1976 BUYERS' GUIDE

CRAMER/CLEVELAND
5735 HARPER ROAD
CLEVELAND
OHIO 44139
TEL. (216) 248-3400

RECEIVED MAY 13 1976

Introducing Cramerkit™

cramer electronics
1455 CARRIAGE TRACE BLVD.
CENTERVILLE, OH 45459
TELEPHONE:
OHIO (800) 362-1140
OUTSIDE OHIO (800) 321-1320

At 10:43 a.m. Peter Doucet, Inside Salesman at Cramer/Newton got into analytical instruments.

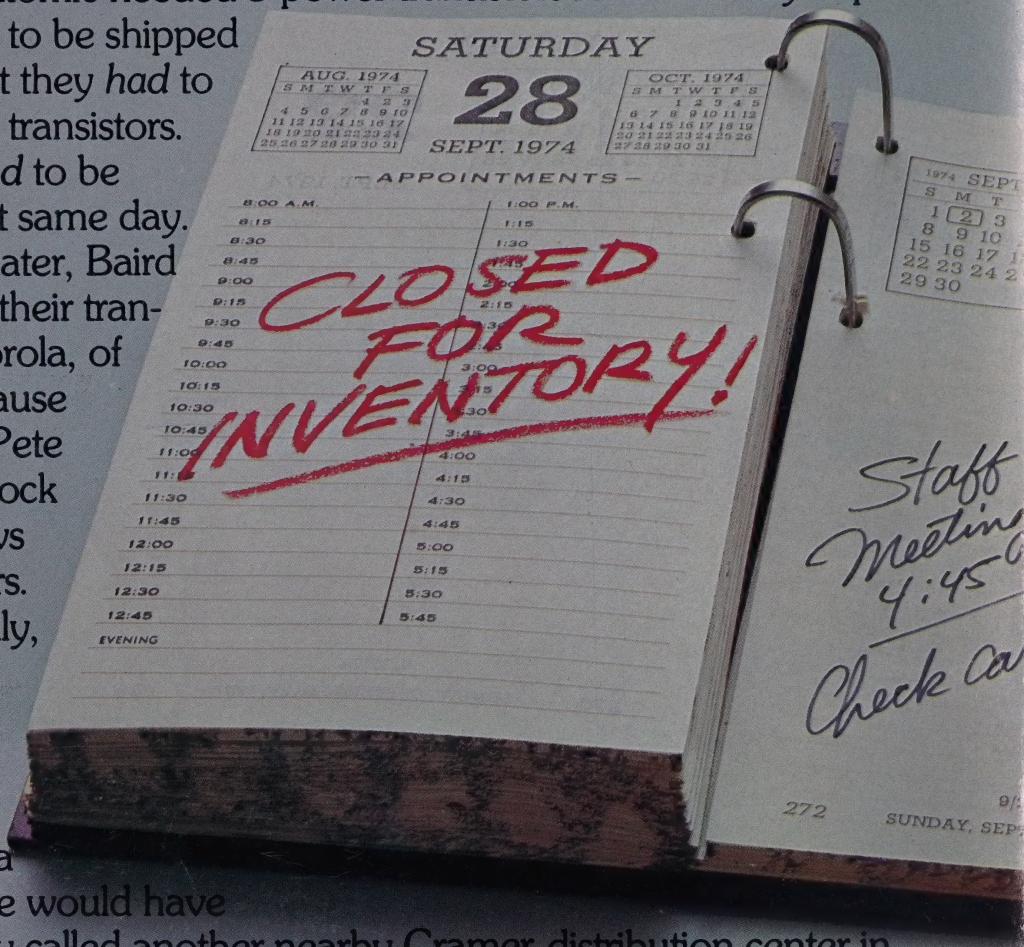
Peter didn't have to get into them that weekend. He *wanted* to. You see, Pete's typical of Cramer's dedicated professionals.

Service comes first. "Sorry, closed for annual inventory" comes second. So when the call from Baird Atomic (Scientific and Nuclear Instruments manufacturer) came in, Pete went right into action.

Baird Atomic needed 3 power transistors for three very expensive systems due to be shipped that day. But they *had* to be Motorola transistors. And they *had* to be received that same day.

Hours later, Baird Atomic had their transistors. Motorola, of course. Because fortunately Pete knows his stock like he knows his customers.

Naturally, if Cramer/Newton did not have a quality line like Motorola in stock, Pete would have automatically called another nearby Cramer distribution center in our $40,000,000 inventory network for an immediate air shipment.

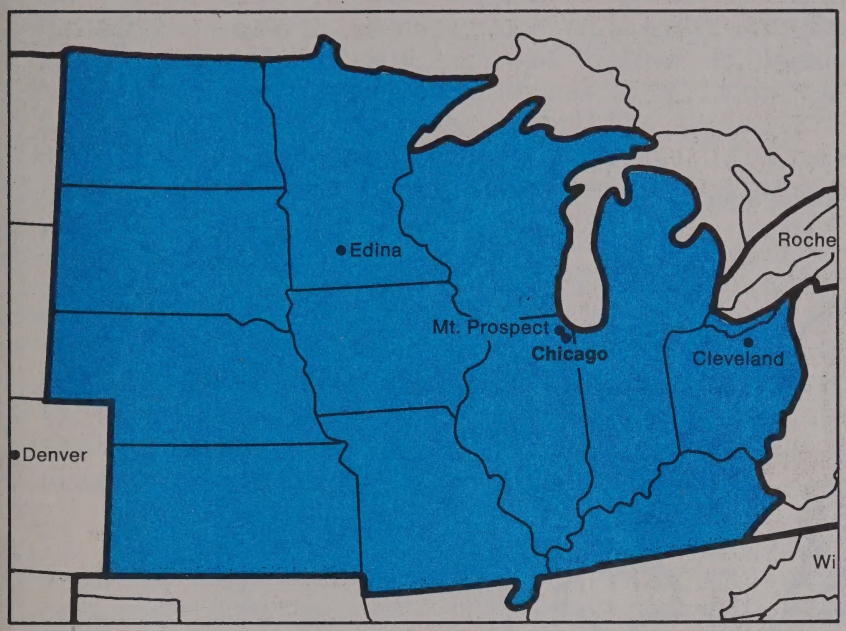


So if you feel like your present component supplier is putting things like "sorry, we're closed" ahead of your needs, call us. You'll always come first. No matter if you're large or small. Computer, communications or aerospace manufacturer. Name it. We've got 1,400 more around the country like Pete Doucet ready to get into your business.

cramer

Our most important component is service.

At Cramer, our most important component is service. For fast, accurate delivery on any line in this catalog, call your nearest Cramer distribution center in the Midwest.



Of all the quality components in this catalog, the one we consider most important is service. That means triple-checking every order for accuracy and shipping it within 24 hours; shipping it from local stock or from our nearest major stocking center.

To back up this service, we can use our computer directed on-line inventory control system to instantly call on our national $40,000,000 total inventory; $10 million of which we have right here in the Midwest.

Call your local Cramer salesman for your next component order. We also invite you to stop by and visit your local Cramer division and our corporate headquarters in Boston. We'd like the opportunity to show you all we have in stock and how we operate to fill your needs quickly and efficiently. You'll find you'll always receive our most important component—service.

Sincerely,

Harry H. Smith

Harry H. Smith
Regional Manager
Midwest Region

Cramer/Chicago, 1911 South Busse Road, Mt. Prospect, Illinois 60056, Tel. (312) 593-8230
Cramer/Cleveland, 5835 Harper Road, Cleveland, Ohio 44139, Tel. (216) 248-8400
Cramer/Minnesota, 7275 Bush Lake Road, Edina, Minnesota 55435, Tel. (612) 835-7811

FIND IT *fast!* USE THUMB TABS

Integrated Circuits & Semiconductors
Tubes
Controls
Resistors
Capacitors
Transformers
Relays
Switches
LED's
Miniature Lamps
Hardware
Connectors
Batteries & Fuses
Wire & Cable
Racks & Cabinets
Chemicals & Tools
Panel Meters
Test Instruments
Index

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Ordering and Shipping Information

When ordering from Cramer Electronics you can be sure that your order receives the most immediate and careful attention. Orders are shipped anywhere in the country within 24 hours and every order has been triple-checked for accuracy by our exclusive quality control department.

Orders, when required, are packed on a cushioned foamcore tray then sealed in a clear, heavy-duty plastic wrapper, using a unique heat-shrink device. This clean, modern process wraps the components firmly on the lightweight tray and provides a sturdy base for the corrugated box container. It also greatly reduces any possibility of breakage.

Open account terms are extended to rated firms, schools, institutions and government agencies. Firms without a published rating may apply for open account by submitting trade or bank references. Orders are filled at prices in effect at time of shipment. Prices shown in this catalog are those in effect at time of publication.

All prices apply only to U.S., Puerto Rico, and Canada. NOTE: We will adjust to current exchange rates all remittances made in Canadian funds.

If bids are required, make sure that Cramer Electronics is on your bidders list. Our 30 years of industrial electronic component distribution experience assures you of prompt service and competitive prices on all your electronic needs.

cramer
CRAMER ELECTRONICS, INC.

Dear Cramer Customer,

This 1976 Cramer Buyer's Guide is bound to be your finest in-depth source for all your component needs. It is comprised of hundreds of pages of the highest quality electronic components you can buy, representing over $40,000,000 of the most complete broadline inventory available. At Cramer, we're proud of the excellent reputations of all the manufacturers whose quality products we distribute.

We're proud, too, of our role in getting these products to you. "The right products at the right time at the right price"-- that's what Cramer's all about. We have over 1400 dedicated distribution professionals aiding in this task, at our 33 stocking centers located world-wide. That's why we say at Cramer, "Our most important component is service."

In the few pages not devoted to quality components we want to show you how our regional centers, our on-line computer system, our modification departments, our educational services, our exciting new universe concept, our huge inventory and our dedicated professionals work to give you the best service in the industry.

I would further like to point out the service stories featured on the inside covers. The stories are true, the people real and the message is clear. We're here to give you the best service possible on all our 100 lines of top quality components.

Call your local Cramer service center for any of the quality components in this catalog. Let us show you why at Cramer we say, "Our most important component is service."

Sincerely,

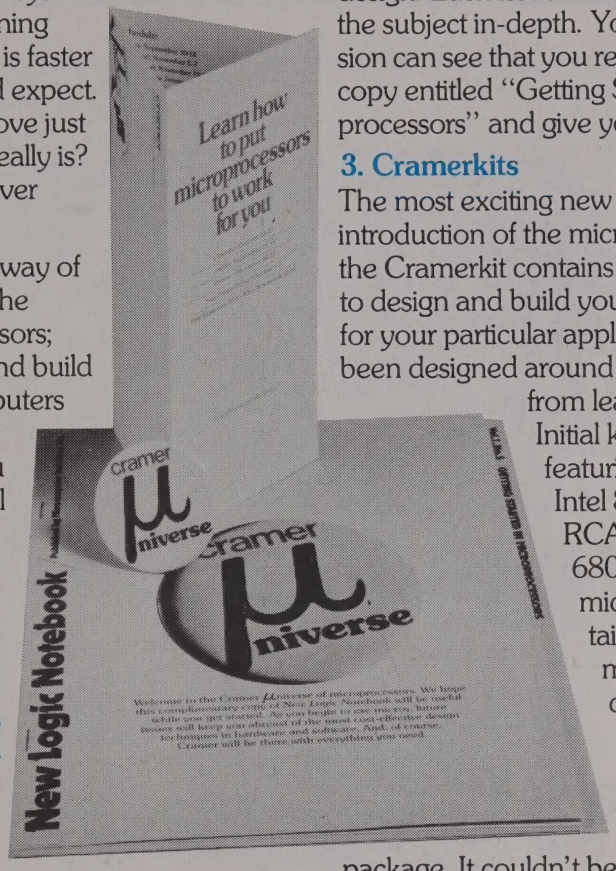
T.X. Cronin,
President

Discover the μniverse

Microprocessors and microcomputers are the electronics industry's newest technology.

They are having as much impact on our industry as the introduction of transistors and IC's did. They are rapidly replacing conventional logic, permitting systems to be smaller, more flexible and more economical. What's more, second sources and lower prices are making microprocessors the logical choice of increasing numbers of system designs. In fact, designing with microprocessors is faster and easier than you'd expect. But why not let us prove just how fast and easy it really is? Let us help you discover the μniverse.

μniverse is Cramer's way of helping you work in the world of microprocessors; helping you design and build your own microcomputers to meet your applications and helping you keep up to date on all the latest microcomputer developments. This help is provided in three phases of a total program.



1. Learning How To Design With Microprocessors

A special three day course scheduled for 11 major U.S. cities in 1975 and many more in 1976. This course is presented by Microcomputer Technique, a leading microcomputer design consulting firm, and it will provide you with a working knowledge necessary to design your particular system with microprocessors. Numerous practical examples show you how to reduce cost and space requirements while simultaneously giving you increased design flexibility. It covers hardware and software design trade-offs and system design techniques. Today's most popular microprocessors are also examined objectively. There is a charge for this course. Contact your local Cramer division for details on course content, dates, locations, costs, materials supplied and special video prep courses that are available.

2. New Logic Notebook

To keep you up to date with microcomputer design techniques and application developments this unique publication can be sent to you monthly. Published by Microcomputer Technique, it is edited by recognized leaders and educators in the field of microcomputer design. Each issue covers a single phase of the subject in-depth. Your local Cramer division can see that you receive a complimentary copy entitled "Getting Started in Microprocessors" and give you subscription costs.

3. Cramerkits

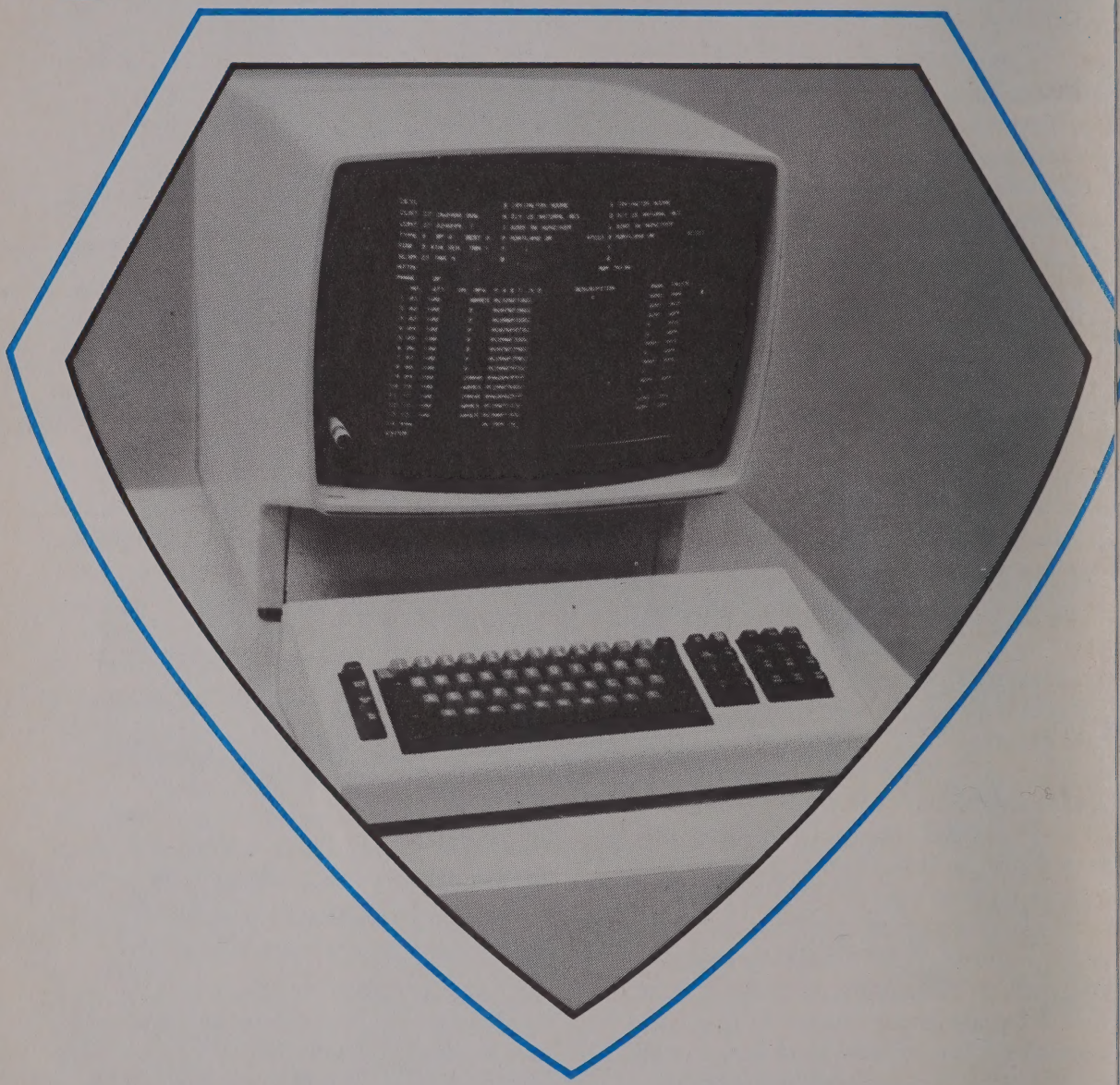
The most exciting new product entry since the introduction of the microprocessor itself, the Cramerkit contains everything you need to design and build your own microcomputer for your particular application. The kits have been designed around microprocessors from leading manufacturers. Initial kits are available featuring the AMD 9080, Intel 8080A, Mostek F8, RCA COS MAC, Motorola 6800 and TI TMS 8080 microprocessors and contain a complete bill of materials, schematic, design manual and audio programming cassettes; all this in a single, well organized ready-to-assemble package. It couldn't be simpler and once you're over the hurdle of your first design you'll rapidly become a microcomputer expert.

These kits are available now. Call your local Cramer salesman for more information.

This gives you a little idea of what the Cramer μniverse is about but you really have to get the full story from your local Cramer division. They'll put you in touch with Microcomputer Technique. If your questions require professional design assistance. Call Cramer today and discover the μniverse. It's the only total, in-depth microcomputer service program available from a single source supplier and supported by the leading logic designers in the industry.

Introducing:

Supersystem



Our new computer-controlled inventory system is completely installed with all our U.S.-based service centers connected to our giant IBM 370/145 computer located in Newton, Massachusetts. It is designed with you, our customer, in mind—so we call it the VIP (Visibility for Inventory Parts) system.

Here's how it can help you:

Let's suppose that you need PROM'S. You also need accurate, concise information on availability, price and delivery time. And you need that information fast.

You call your local Cramer division with a request for immediate delivery of 1500 Intel PROM'S.

The Cramer Sales Professional who takes your call immediately signs into the data bank through his own desk top terminal. He immediately tells you that he can fill your entire order from local stock, and gives you necessary pricing information. If, however, your order were to exceed his available stock, the computer would tell him what other Cramer locations had the PROM's on hand. It would also tell him which locations with available stock are nearest.

In that event, when he placed the order, the computer would automatically generate the order forms at all additional selected stocking locations, while simultaneously updating the necessary inventory information.

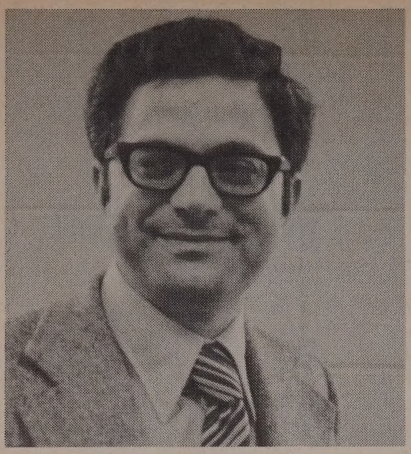
At the warehouses, hard-copy orders would be printed out minutes after you confirm your order. This sets Cramer inventory personnel into action. As hard-copies come directly from the computer to the printers at their locations, your requested stock is assembled and prepared for shipment.

The order is then placed on the first available air-pac to your local Cramer division. The following morning, the orders arrive and are delivered to you.

So what does V.I.P. Supersystem mean to you? Simply, that now with one call to Cramer, we can instantly:

- Locate all existing stock both locally and nationally.
- Provide routing information.
- Generate necessary order information in each affected location.
- Initiate the order and delivery.
- Provide all the information you require in minutes.
- Provide 24 hour turnaround.

No wonder V.I.P. Supersystem is the best components system currently in operation. After all, it's the only one specifically designed for an electronics distributor. But we're not going to settle for just being the best. We're already working on new features and benefits to help make your job easier and more cost-effective. Look for information on these in the near future.



Cramer Italia spa un'unica fonte di approvvigionamento per ogni esigenza di componenti elettronici

Cramer Italia spa è presente sul mercato italiano soltanto da un triennio, e numerosissimi clienti hanno già usufruito e si giovano tuttora del suo servizio.

La nostra Società ha la distribuzione ufficiale per l'intero territorio nazionale della Motorola Semiconduttori spa, della Texas Instruments Italia spa e della Advanced Micro Devices Inc, con un notevole stock di magazzino dei componenti di dette Case.

Inoltre, i clienti che ci conoscono, sanno che rivolgendosi a noi è possibile attingere — mediante la nostra linea privata e continua di telescriventi — direttamente ai magazzini Cramer negli USA, il cui materiale supera i 30 miliardi di lire di valore, ed è costantemente aggiornato dai Product Managers dislocati nei 37 Centri, ivi esistenti.

cramer italia spa
Gianfranco Perlini
DIRETTORE GENERALE

I nostri tre uffici di Roma, Milano e Bologna sono collegati tra di loro con linee telefoniche dirette e continue per assicurare la immediata trasmissione delle informazioni.

Pertanto è sufficiente il costo di una semplice telefonata urbana per accedere personalmente, non solo ai magazzini esistenti in Italia, ma anche ad uno qualsiasi di quelli esistenti nei 37 centri Cramer negli Stati Uniti.

Per questo motivo di fondo Vi chiediamo di usare al massimo delle nostre possibilità, in quanto crediamo che, pur offrendo una dovizia di servizi come quelli descritti finora, siamo in grado di essere competitivi con il mercato dell'approvvigionamento dei componenti.

Fateci essere presenti nelle Vostre richieste di offerte; siate Voi a suggerire i Vostri consumi per aggiornare i nostri magazzini; in sintesi *diteci Voi cosa volete che noi teniamo a stock!*

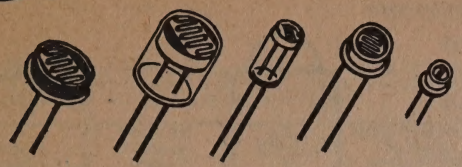
Un nostro sistema di computer installato a Roma ci permette di snellire al massimo la gestione degli ordini e ci consente di consegnarVi materiale disponibile entro 24 ore, se a stock in Italia ed entro 48 ore se a stock negli USA.

Vi ricordiamo infine che i prezzi riportati nel presente catalogo sono puramente indicativi, in quanto soggetti alle oscillazioni di valuta ed a variazioni di prezzo delle case rappresentate.

cramer italia SPA

- **ROMA**, VIA CRISTOFORO COLOMBO 134
  Tel. (06) 513.93.87 - 513.93.90 - 514.03.53 - 514.03.54 TELEX: CRAMERIT 58233
- **Ufficio di MILANO** - VIA MELCHIORRE GIOIA, 74 Tel. (02) 376.40.39 - 376.40.95
- **Ufficio di Bologna** - VIA MALTA, 5 - Tel. (051) 422.890

CLAIREX® Photoconductor Cells



CL5M CL500 CL600 CL700 CL900

Variable resistors controlled by light for automation and control applications. Five series in both metal and glass packages meet most design requirements. Available in low resistance "L" types for transistor and other low voltage uses. Feature stable and closely controlled parameters. High ratio of light-to-dark current at low light levels. High sensitivity and fast response of cadmium selenide. **Operating Temperature:** −50° C to +75° C. **Size:** CL5M series, .490″ dia. x .183″ h.; CL500 series, .500″ dia. x ½″ lg.; CL600 series, .250″ dia. x ½″ lg.; CL700 series, TO-5 case .360″ dia. x .180″ h.; CL900 series, TO-18 case .210″ dia. x .150″ h.

SINGLE ELEMENT CELLS

Clairex No.*	Sensitive Material	Pk. Spectral Response, A	Light Resistance*	Max. Voltage Rating, V	Power† mW
CL5M2	CdS	5150	55K	250	2000–500‡
CL5M2L	CdS	5150	9K	170	2000–500‡
CL5M3	CdSe	7350	7.2K	250	2000–500‡
CL5M4	CdSe	6900	1.5K	250	2000–500‡
CL5M4L	CdSe	6900	0.25K	170	2000–500‡
CL5M5	CdS	5500	9K	250	2000–500‡
CL5M5L	CdS	5500	1.5K	170	2000–500‡
CL5M7	CdS	6150	7.2K	250	2000–500‡
CL5M9M	CdS	5500	11K	110	2000–500‡
CL502	CdS	5150	55K	250	500–250
CL502L	CdS	5150	9K	170	500–250
CL503	CdSe	7350	7.2K	250	500-250‡
CL504	CdSe	6900	1.5K	250	500-250‡
CL504L	CdSe	6900	0.25K	170	500-250‡
CL505	CdS	5500	9K	250	500-250‡
CL505L	CdS	5500	1.5K	170	500-250‡
CL507	CdS	6150	7.2K	250	500-250‡
CL602	CdS	5150	1 meg	300	75
CL603	CdSe	7350	133K	300	75
CL603A	CdSe	7350	75K	300	75
CL603AL	CdSe	7350	3.5K	170	75
CL604	CdSe	6900	30K	300	75
CL604M	CdSe	6900	7.5K	250	75
CL604L	CdSe	6900	1.5K	170	75
CL605	CdS	5500	166K	300	75
CL605L	CdS	5500	7.5K	170	75
CL607	CdS	6150	133K	300	75
CL607L	CdS	6150	3.5K	170	75
CL702	CdS	5150	1 meg	300	125
CL702L	CdS	5150	20K	100	125
CL703	CdSe	7350	133K	300	125
CL703A	CdSe	7350	67K	300	125
CL703M	CdSe	7350	30K	250	125
CL703L	CdSe	7350	2.7K	170	125
CL704	CdSe	6900	30K	300	125
CL704L	CdSe	6900	.6K	170	125
CL705	CdS	5500	166K	300	125
CL705L	CdS	5500	3.3K	170	125
CL705HL	CdS	5500	28K	170	125
CL707	CdS	6150	133K	300	125
CL707L	CdS	6150	2.7K	170	125
CL707H	CdS	6200	600K	300	125
CL707HM	CdS	6200	100K	250	125
CL707HL	CdS	6200	10K	170	125
CL709L	CdS	5500	28K	100	125
CL902	CdS	5150	1 meg	250	50
CL902L	CdS	5150	67K	100	50
CL903	CdSe	7350	133K	250	50
CL903A	CdSe	7350	67K	250	50
CL903N	CdSe	7350	66K	100	50
CL903L	CdSe	7350	6K	100	50
CL904	CdSe	6900	30K	250	50
CL904N	CdSe	6900	15K	100	50
CL904L	CdSe	6900	2K	100	50
CL905	CdS	5500	166K	250	50
CL905N	CdS	5500	83K	100	50
CL905L	CdS	5500	10K	100	50
CL905HN	CdS	5500	700K	100	50
CL905HL	CdS	5500	100K	100	50
CL905HLL	CdS	5500	15K	60	50
CL907	CdS	6150	133K	250	50
CL907N	CdS	6150	66K	100	50
CL907L	CdS	6150	6K	100	50
CL907HN	CdS	6200	300K	100	50
CL907HL	CdS	6200	24K	100	50
CL909L	CdS	5500	100K	100	50

*Average DC resistance (±33⅓%) measured at 2 foot-candles, 2854° K and 25° C ambient, from room light history. †At 25° C ambient; derated linearly to 0 at 75° C. ‡With and without heat sink.

DUAL ELEMENT CELLS

Clairex No.*	Sensitive Material	Pk. Spectral Response, A	Light Resistance*	Max. Voltage Rating, V	Power† mW
CL702L/2	CdS	5150	46K	100	75–125§
CL703/2	CdSe	7350	50K‡	300	75–125§
CL703L/2	CdSe	7350	6.5K‡	170	75–125§
CL704L/2	CdSe	6900	1.5K‡	170	75–125§
CL705/2	CdS	5500	166K‡	300	75–125§
CL705L/2	CdS	5500	7.5K‡	170	75–125§

*Average DC resistance (±33⅓%) measured at 2 foot-candles, 2854° K and 25° C ambient, from room light history. †At 25° C ambient; derated linearly to 0 at 75° C. ‡Each element. §Total power dissipation 125 mW; max. power across one-half, 75 mW.

★QUANTITY PRICES

Clairex No.	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Clairex No.	Net Each, Lots of 1-99	Net Each, Lots of 100-499
CL5M2	$2.21	$1.68	CL703/2	$2.30	$1.95
CL5M2L	2.21	1.68	CL703L/2	2.30	1.95
CL5M3	1.68	1.36	CL704	1.68	1.37
CL5M4	1.68	1.36	CL704L	1.68	1.37
CL5M4L	1.68	1.36	CL704L/2	2.10	1.68
CL5M5	1.68	1.26	CL705	2.15	1.68
CL5M5L	1.68	1.26	CL705L	1.68	1.26
CL5M7	1.68	1.26	CL705/2	2.47	2.10
CL5M9M	3.00	2.00	CL705L/2	2.41	2.05
CL502	2.80	2.14	CL705HL	1.68	1.47
CL502L	2.80	2.14	CL707	1.68	1.26
CL503	2.08	1.73	CL707L	1.68	1.26
CL504	2.08	1.73	CL707H	1.68	1.47
CL504L	2.08	1.73	CL707HM	1.68	1.47
CL505	2.08	1.60	CL707HL	1.68	1.47
CL505L	2.08	1.60	CL709L	3.00	2.30
CL507	2.08	1.60	CL902	2.21	1.68
CL602	1.90	1.46	CL902L	2.21	1.68
CL603	2.22	1.91	CL903	1.63	1.37
CL603A	2.22	1.91	CL903A	1.63	1.37
CL603AL	2.22	1.91	CL903N	1.63	1.37
CL604	2.22	1.91	CL903L	1.63	1.37
CL604M	2.22	1.91	CL904	1.63	1.37
CL604L	2.22	1.91	CL904N	1.63	1.37
CL605	1.90	1.47	CL904L	1.63	1.37
CL605L	1.90	1.47	CL905	1.63	1.26
CL607	1.90	1.47	CL905N	2.21	1.68
CL607L	1.90	1.47	CL905L	1.63	1.26
CL702	2.20	1.70	CL905HN	1.63	1.47
CL702L	1.68	1.26	CL905HL	1.63	1.47
CL702L/2	2.42	2.05	CL907	1.63	1.26
CL703	1.68	1.37	CL907L	1.63	1.26
CL703A	1.68	1.37	CL907N	1.63	1.26
CL703M	1.68	1.37	CL907HN	1.63	1.47
CL703L	1.68	1.37	CL907HL	1.63	1.47
			CL909L	3.00	2.30

DESIGNERS' KIT

Recommended for all prototype design applications. Contains five different photoconductive cells: CL505, CL603A, CL704L, CL707 and CL902; plus designers data sheet and listing of all standard Clairex types.

Clairex Designers' Kit—Net Each.....**$10.00**

HIGH SPEED "CHOPPER" CELLS

Clairex No.	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Clairex No.	Net Each, Lots of 1-99	Net Each, Lots of 100-499
CL903C	$3.20	$2.50	CL903CLS*	$3.30	$2.65
CL903CL	3.20	2.50	CL906CS*	3.20	2.50
CL903CS*	3.30	2.65	CL906CLS*	3.20	2.50

*Photocells with **S** have conductive glass windows and a third lead grounded to the case for complete shielding.

PHOTOMOD® PHOTOCELL-LAMP MODULES

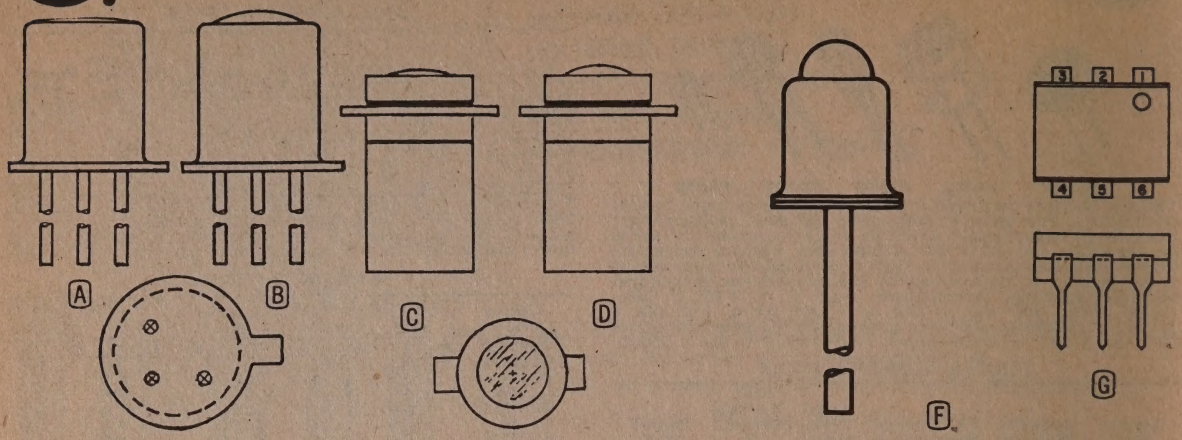
Power Dissipation: Up to 100 mW. **Cell Voltage:** 120 V max. with lamp off. **Module Temperature:** −25° C to 75° C max. operating as measured on the photocell.

Any Model—Net Each, Lots of 1–99.....**$2.70**
Net Each, Lots of 100–299.....**$1.93**; 300–999..... **1.62**

Clairex No.*	Resistance Max. "On" Ohms	Resistance Min. "5-sec. Off" Megs	Max. Time Rise* Sec.	Max. Time Decay† Sec.	Max. Lamp Volts‡	Lamp Cur., mA
CLM3006A	160	100	.060	.17	6	40
CLM4006A	55	1	.080	.17	6	40
CLM3012A	160	100	.080	.21	12	40
CLM4012A	30	1	.080	.18	12	40
CLM3120A	1150	100	.005	.18	120	2.5§
CLM4120A	160	1	.005	.55	120	2.5§
CLM5H10A	3000	10	.120	.070	10	17
CLM7H16A	550	10	.090	.100	16	17

*Time to reach 110% of on resistance. †Time to reach 100K after lamp circuit is broken. ‡For 5,000 hour life. §Neon lamp.

CLAIREX® Silicon Phototransistors



Silicon planar phototransistors in hermetic packages. Light Current (I_L): Light source is a frosted tungsten incandescent lamp at 2854° K t_r and t_f light source is a gallium arsenide LED (light emitting diode) pulsed with a rise and fall time of <0.3 μsec. I_C=200 mA max. Pulsed conditions, 300 μsec, 2% duty cycle (CLT2010–CLT2160 not pulsed). Size: Fig. A, 0.183″ (±.007″) dia. x 0.200″ (±.010″) h.; 0.500″ min. leads. Window 0.155″ (±.005″) dia. x 0.010″ h. max. Physical dimensions in accordance with JEDEC TO-18 outline except for window on top of can. Collector electrically connected to case. Leads gold plated Kovar. Fig. B, same as Fig. A except lens 0.147″ (±.011″) dia. x 0.040″ (±.010″) h. max. Fig. C, 0.060″ (±.003″) dia. x 0.110″ (±0.010″) h. Window 0.040″ (±.005″) dia. x 0.005″ h. max. Case gold plated Kovar. Fig. D, same as Fig. C except lens 0.040″ (±.005″) dia. x 0.025″ (±.004″). h. Fig. E, 0.060″ (±.003″) dia. x 0.588″ (±.015″) lg. Window 0.040″ (±.005″) dia. x 0.005″ h. max. Lead gold plated Kovar. Fig. F, same as Fig. E except lens 0.040″ (±.005″) dia. x 0.025″ (±.004″) h.

NPN SILICON PLANAR EPITAXIAL PHOTOTRANSISTORS

Three terminal phototransistors in a hermetically sealed TO-18 case. Base lead is provided to enable more flexible circuit design. Offer a full range of high current sensitivity for low illumination levels. Applications include beam breakers, signal recognition, photo switching, counters, sorters, processing and control.

Clairex Type	Fig.	Window or Lens	I_L at V_{CE}=5 V H=5 mW/cm² Minimum Min. mA	Max. mA	BV_{CEO} V	BV_{CBO} V	BV_{ECO} V	I_D at 10 V nA	P_D at 25° C_A mW	Typical t_r μsec	t_f μsec	Net Each, Lots of 1-99	100-499
CLT2010	A	W	0.2	0.6	50	80	5	25	250	3	3	$1.89	$1.22
CLT2020	A	W	0.4	1.2	30	60	5	25	250	3	3	2.02	1.31
CLT2030	A	W	1.0	3.0	30	60	5	25	250	3	3	2.28	1.47
CLT2035	A	W	2.5	.....	30	60	5	25	250	3	3	2.33	1.52
CLT2130	B	L	0.6	1.8	50	80	5	25	250	3	3	2.14	1.38
CLT2140	B	L	1.2	3.6	40	80	5	25	250	3	3	2.28	1.47
CLT2150	B	L	2.4	7.2	40	80	5	25	250	3	3	2.42	1.56
CLT216	B	L	4.0	12.0	30	60	5	25	250	3	3	2.56	1.65
CLT2165	B	L	12.0	.....	30	60	5	25	250	3	3	2.70	1.80

NPN SILICON PLANAR EPITAXIAL DARLINGTON PHOTOTRANSISTORS

Same as above except this series is characterized for controlled, high sensitivity at very low irradiance levels. The flat window eliminates the need for critical sensor positioning in applications with low irradiance; lensed window reduces optical cross-talk from stray light.

Clairex Type	Fig.	Window or Lens	I_L at V_{CE}=5 V H=.02 mW/cm² Min. mA	Max. mA	H=.2 mW/cm² Min. mA	Max. mA	Minimum BV_{CEO} V	BV_{EBO} V	I_D at 10 V nA	P_D at 25° C_A mW	Net Each, Lots of 1-99	100-499
CLR2049	A	W	2*	.....	0.2	.....	50	10	100	250	$2.19	$1.72
CLR2050	A	W	6*	.....	0.6	1.8	40	10	100	250	2.49	1.92
CLR2060	A	W	14*	.....	1.4	4.0	40	10	100	250	2.74	2.11
CLR2170	B	L	0.2	0.8	2.0	.....	40	10	100	250	2.64	2.03
CLR2180	B	L	0.6	.....	4.0	.....	40	10	100	250	2.91	2.25

*H=2.0 mW/cm².

SILICON PLANAR EPITAXIAL PHOTOTRANSISTORS

Silicon phototransistors in miniature hermetic package designed for high-density mounting applications in card and tape readers, pattern and character recognition equipment, encoders and associated designs requiring stable characteristics. CLT3020 and CLT3030, types are characterized by a wide acceptance angle, fast switching and narrow tolerance ranges of sensitivity. Flat window minimizes the need for critical sensor positioning in many applications. CLT3160, CLT3170, CLT5160 and CLT5170 types are characterized by a narrow acceptance angle, fast switching and narrow tolerance ranges of sensitivity. Lensed window reduces optical cross-talk from stray light present in many applications.

Clairex Type	Fig.	Window or Lens	I_L at V_{CE}=5 V H=5 mW/cm² Min. mA	H=20 mW/cm² Min. mA	Max. mA	Minimum BV_{CEO} V	BV_{ECO} V	I_D at 10 V nA	P_D at 25° C_A mW	Typical t_r μsec	t_f μsec	Net Each, Lots of 1-99	100-499
CLT3020	C	W	.10	0.40	1.2	50	5.0	10	50	1.5	1.5	$3.60	$2.43
CLT3030	C	W	.25	1.0	3.0	40	5.0	10	50	1.5	1.5	3.87	2.61
CLT3160	D	L	.50	2.0	7.0	50	5.0	10	50	1.5	1.5	3.60	2.43
CLT3170	D	L	2.0	7.0	.....	40	5.0	10	50	1.5	1.5	3.70	2.55
CLT5160	E	L	.50	2.0	7.0	50	5.0	25	50	1.5	1.5	2.82	2.17
CLT5170	E	L	1.4	6.0	.....	40	5.0	25	50	1.5	1.5	3.23	2.49

LISTING CONTINUED ON FOLLOWING PAGE

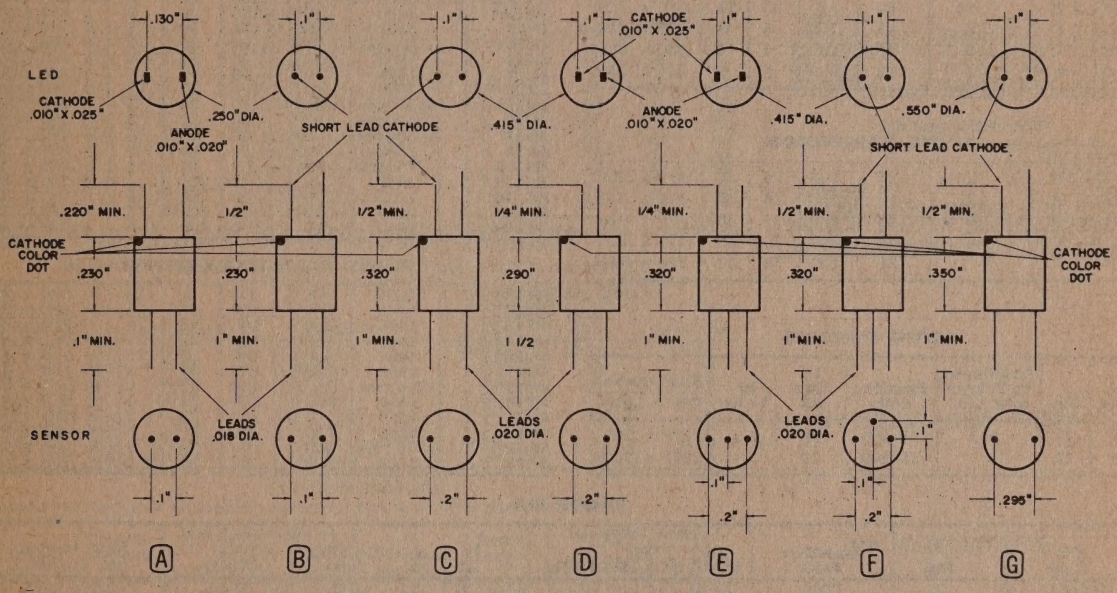
PHOTOTRANSISTORS (CONT'D)

OPTO-ISOLATOR

The Clairex series of opto-isolator features a range of transfer ratios and speeds that are unique in the industry. Emitter is a gallium arsenide diode and detector is an NPN silicon planar phototransistor. Size: .350″ w. x .260″ d. x .130″ h. without leads. Leads: .164″ x .016″ (with .100″ ±.010″ space between leads).

Clairex Type	Min. DC Transfer Ratio*	Min. BV_{CEO}† V	Min. Isolation Voltage Volts (PAC)	Max. Rise or Fall Time‡ μsec	Max. I_{CEO}# nA	Max. V_F§ Volts	Net Each, Lots of 1-99	Net Each, Lots of 100-999
CLI-2	30%	50	1500	5	25	1.5	$2.70	$1.80
CLI-3	100%•	50	1500	5	25	1.5	4.90	4.00
CLI-5	20%	50	1500	2.5▲	25	1.5	3.60	3.00
CLI-10	600%	50	1500	150 typ.	100	1.5	3.20	2.20
CLI-20	20%	30	1500	3	50	1.5	2.25	1.50
CLI510	100%	30	1500	150 typ.	100	1.5	2.40	1.60
CLI511	100%	50	1500	150 typ.	100	1.5	2.95	1.95
CLI116	200%■	25	1500	150 typ.	100	1.5	2.10	1.40
CLI117	500%■	25	2500	150 typ.	100	1.5	2.55	1.70
CLA-7I	20%	40	6000	5	50	1.5	3.90	2.60
CLA-7DI	400%	40	6000	150 typ.	100	1.5	3.90	2.60

*At I_F = 10 mA; V_{CE} = 10 V. †At I_C = 0.1 mA; I_F = 0. ‡At R_L = 100 ohms; I_{CE} = 2 mA; V_{CC} = 10 V. #At I_F = 0; V_{CE} = 10 V. §I_F = 16 mA. •30% at I_F = 1.0 mA. ▲3 μsec at R_L = 1000 ohms.
■At I_F = 1.0 mA; V_{CE} = 10 V.
IAxial-lead package: .510″ l. x .310″ diam., all leads .500″ min. length (Fig. G).



PHOTOISOLATORS

Clairex Type	Fig.	Max. R_{ON} Ohms	Min. R_{OFF} Ohms	Max. Cell Voltage PAC	Isolation Voltage PAC	Typ. t_R msec	Typ. t_D msec	Max. P_D at 25° C mW	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-4999
CLM6000	A	250*	500K	60	2500	3.5	500	50	$2.90	$1.95	$1.40
CLM6200	A	6K†	10 meg	60	2500	3.5	12	50	3.25	2.05	1.50
CLM6500	B	270†	1 meg	100	2500	5.0	80	50	3.40	2.30	1.75
CLM8000	C	400*	500K	220	1500	3.5	500	125	3.75	2.50	1.90
CLM8200	D	2.75K†	10 meg	220	2500	3.0	20	100	3.10	2.00	1.45
CLM8200/2	E	5K†	10 meg	100	2500	3.5	30	100	3.20	2.25	1.55
CLM8500	C	2K†	10 meg	220	1500	3.5	40	125	4.15	2.90	2.15
CLM8500/2	F	1K†	1 meg	100	1500	5.0	150	125	5.25	3.60	2.80
CLM8500HV	C	5K†	10 meg	400	1500	3.5	40	125	4.40	3.00	2.35
CLM8600	C	2K†	10 meg	480	2500	3.5	40	100	3.55	2.30	1.70
CLM9000	G	800K#	1000 meg	3500	4000	.....	.....	400	5.40	3.60	2.65

*At 40 mA. †At 16 mA. #At 25 mA.

OPTICAL SWITCHES

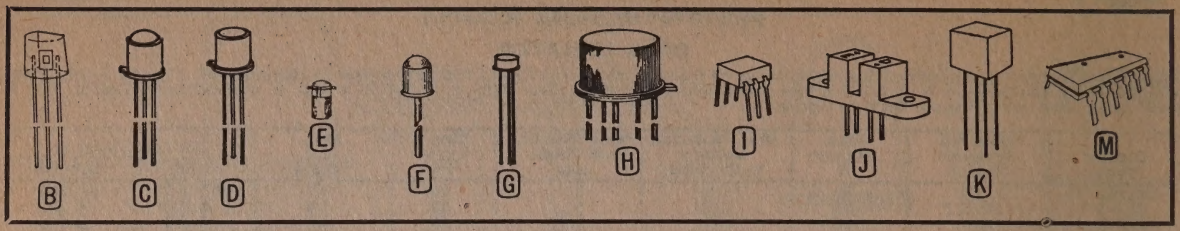
The CLI55 and CLI200 utilize hermetically sealed infrared LED's and hermetically sealed silicon sensors. A Darlington phototransistor is used in the CLI55 and a phototransistor is used in the CLI200. Glass lens are used on all of the emitters and sensors to provide a narrow light path across the gap and to reduce maintenance. The CLI55 optical switch housing has 12 inch leads for circuit connections. The CLI200 is designed for circuit board plug-in.

Clairex Type	Min. Sensor Current I_{CE}	BV_{CEO} I_C = .1mA	I_D V_{CE} = 10mA mA	V_R I_R = 10A Volts	V_F I_F = 16mA Volts	Net Each, Lots of 1-9	Net Each, Lots of 10-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
CLI55	12mA*	30	100	3	1.5	$9.25	$6.70	$5.20	$3.90
CLI200	1mA	40	50	3	1.5	8.88	5.90	4.80	3.75

*At 10 mA. †At 20 mA.

SOLID STATE

OPTOELECTRONICS



DETECTORS
PHOTO TRANSISTORS

GE Type	Fig.	Minimum Sensitivity mA/mW/cm²	BV_{CEO} Volts	I_D Max. nA	Typical t_r µsec	Typical t_f µsec	Size, Inches Dia. x Lgth.
L14H1	B	.05	50	100	6	6	.170 x .210
L14H2	B	.1	50	100	15	10	.170 x .210
L14H3	B	.25	50	100	20	15	.170 x .210
L14H4	B	.05	50	100	25	20	.170 x .210
L14G1	C	.6	45	100	5	5	.230 x .255
L14G2	C	.3	45	100	5	5	.230 x .255
L14G3	C	1.2	45	100	5	5	.230 x .255

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2N5777	B	.25	25	100	75	50	.170 x .210
2N5778	B	.25	40	100	75	50	.170 x .210
2N5779	B	1.0	25	100	75	50	.170 x .210
2N5780	B	1.0	40	100	75	50	.170 x .210
L14F	C	15	25	100	75	50	.230 x .255

PHOTO SWITCHES

GE Type	Fig.	Irradiance To Trigger mW/cm²	Blocking Volts	I_D Max. µA	V_F Volts	Size, Inches Dia. x Lgth.
L8	G	4.2	25–200	10	1.4	.370 x .260
L9	G	10	25–200	10	1.4	.370 x .260

COUPLERS
PHOTO TRANSISTOR OUTPUT

GE Type	Fig.	Isolation Volts	Min. Current Transfer Ratio	I_D nA	BV_{CEO} Volts	Typical t_r µsec	Typical t_f µsec	Size, Inches W. x Lgth.
H11A1	I	2500	50%	50	30	5	5	.280 x .350
H11A2	I	1500	20%	50	30	5	5	.280 x .350
H11A3	I	2500	20%	50	30	6	5	.280 x .350
H11A4	I	1500	10%	50	30	5	5	.280 x .350
H11A5	I	1500	30%	100	30	5	5	.280 x .350
H15A1	K	4000	20%	100	30	5	5	.250 x .375
H15A2	K	4000	10%	100	30	5	5	.250 x .375
4N25	I	2500	20%	50	30	5	5	.280 x .350
4N25A	I	1775 rms	20%	50	30	5	5	.280 x .350
4N26	I	1500	20%	50	30	5	5	.280 x .350
4N27	I	1500	10%	50	30	5	5	.280 x .350
4N28	I	500	10%	100	30	5	5	.280 x .350
4N35	I	2500 rms	100%	50	30	5	5	.280 x .350
4N36	I	1750 rms	100%	50	30	5	5	.280 x .350
4N37	I	1050 rms	100%	50	30	5	5	.280 x .350
4N38	I	1500	20%	50	80	5	5	.280 x .350
4N38A	I	1775 rms	20%	50	80	5	5	.280 x .350
H11D1	I	2500	20%	100	300	5	5	.280 x .350
H11D2	I	1500	20%	100	200	5	5	.280 x .350
H11D3	I	1500	20%	100	200	5	5	.280 x .350
H11D4	I	1500	10%	100	200	5	5	.280 x .350

PHOTO DARLINGTON OUTPUT

H11B1	I	2500	500%	100	25	125	100	.280 x .350
H11B2	I	1500	200%	100	25	125	100	.280 x .350
H11B3	I	1500	100%	100	25	125	100	.280 x .350
H15B1	K	4000	400%	100	25	125	100	.250 x .375
H15B2	K	4000	200%	100	25	125	100	.250 x .375
4N29	I	2500	100%	100	30	5	40	.280 x .350
4N29A	I	1775 rms	100%	100	30	5	40	.280 x .350
4N30	I	1500	100%	100	30	5	40	.280 x .350
4N31	I	1500	50%	100	30	5	40	.280 x .350
4N32	I	2500	500%	100	30	5	100	.280 x .350
4N32A	I	1775 rms	500%	100	30	5	100	.280 x .350
4N33	I	1500	500%	100	30	5	100	.280 x .350

PHOTO SCR

GE Type	Fig.	Isolation Volts	I_F to Trigger mA RGK10K	I_F to Trigger mA RGK27K	I_D µA	Blocking Volts	V_F Volts	Size, Inches W. x Lgth.
H11C1	I	2500	20	11	50	200	1.5	.280 x .350
H11C2	I	1500	20	11	50	200	1.5	.280 x .350
H11C3	I	1500	30	14	50	200	1.5	.280 x .350
H11C4	I	2500	20	11	150	400	1.5	.280 x .350
H11C5	I	1500	20	11	150	400	1.5	.280 x .350
H11C6	I	1500	30	14	150	400	1.5	.280 x .350

*Diameter.

PHOTON COUPLED INTERRUPTER MODULES
PHOTO TRANSISTOR OUTPUT

GE Type	Fig.	Output Current* µA	I_D nA	BV_{CEO} Volts	Typical t_{on} µsec	Typical t_f µsec	Size, Inches ‡ x Lgth.
H13A1	J	200	100	30	5	5	.125 x .984
H13A2	J	50	100	30	5	5	.125 x .984
H17A1	B	50	100	30	5	5	.170 x .210

PHOTO DARLINGTON OUTPUT

H13B1	J	1000†	100	25	150	150	.125 x .984
H13B2	J	500†	100	25	150	150	.125 x .984
H17B1	B	1000	100	25	150	150	.170 x .210

*At I_F = 20 mA. †At I_F = 10 mA. ‡Length between pins.

INFRARED EMITTERS

GE Type	Min. Power Output at I_F = 100 mA	Max. Forward Voltage at I_F = 100 mA	Peak Emission Wavelength Typical Nanometers	Rise Time Typical Nanoseconds	Fall Time Typical Nanoseconds	Max. Power Diss. mW	Max. Forward Current Continuous mA	Package Outline
LED55B	3.5 mW	1.7	940	300	200	1300	100	E
LED55BF	3.5 mW	1.7	940	300	200	1300	100	F
LED55C	5.4 mW	1.7	940	300	200	1300	100	E
LED55CF	5.4 mW	1.7	940	300	200	1300	100	F
LED56	1.5 mW	1.7	940	300	200	1300	100	E
LED56F	1.5 mW	1.7	940	300	200	1300	100	F

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VISIBLE RED LED—INDICATOR AND PANEL

Litronix Number	Lens Description	Features	Net Each, Lots of 1-99	100-999	1000 Up
ARL-18	Red clear	8 diode array position indicator stackable in any quantity	$4.60	$3.80	$2.95
RL-2*	Red diffusive	Front panel mounting; molded plastic package	.70	.55	.45
RL-2-02	Red clear		.70	.55	.45
RL-20*†	Red diffusive	High luminance; large full flood radiating area	.70	.55	.45
RL-20-02	Red clear		.70	.55	.45
RL-21‡	Red diffusive	Extra wide viewing angle—180°	.65	.43	.36
RL-21-02	Red clear		.65	.43	.36
RL-50*	Water clear	Subminiature axial lead frame package for maximum strength at minimum linear spacing	.43	.29	.24
RL-50-01	Red diffusive		.43	.29	.24
RL-50-02	Red clear		.43	.29	.24
RL-54	Red diffusive	Low cost	.34	.23	.19
RL-55	Red diffusive	High intensity	.47	.31	.26
RL-55-5	Red diffusive	Low cost	.34	.23	.19
RL-209*†	Red diffusive	Subminiature radial lead; low cost	.47	.31	.26
RL-209-02	Red clear		.47	.31	.26
RL-T1*†	Red diffusive	Identical to RL-209 except flangeless	.47	.31	.26
RL-T1-02	Red clear		.47	.31	.26
RL-2000	Red diffusive	High brightness	.63	.42	.35
RL-4403	Red diffusive	High luminance; large full flood area	.50	.34	.28
RL-4415	Red diffusive	Right angle leads	.88	.59	.49
RL-4484§	Red diffusive	Miniature commercial grade	.31	.20	.17
RL-4850	Red diffusive	Commercial panel mount	.31	.20	.17
RL-5054-1	Red diffusive	Extra high luminance for back panel lighting; projects ¼" spot	.40	.28	.23
RL-5054-2	Red diffusive		.80	.54	.45
RL-5054-5	Red diffusive		.31	.20	.17
RLC-200	Red diffusive	Constant intensity	.70	.55	.45
RLC-201	Red diffusive	Constant intensity	.70	.55	.45
RLC-210	Red diffusive	Constant intensity	.90	.60	.50
RLC-400	Red diffusive	Voltage indicator	.80	.54	.45
RLC-410	Red diffusive	Voltage indicator	.90	.60	.50

*White diffusive (-03); †Water clear diffusive (-04); ‡White diffusive lens available at same price. §Pkg. similar to RL-209. #For sense-source applications.

INFRARED, GREEN, ORANGE AND VISIBLE YELLOW EMITTERS

Litronix Number	Description	Features	Net Each, Lots of 1-99	100-999	1000 Up
GL-56	Green	Axial lead	$0.88	$0.60	$0.49
YL-56	Yellow	Axial lead	.88	.60	.49
GL-4484	Green	T1 Pkg.	.98	.73	.59
YL-4484	Yellow	T1 Pkg.	.98	.73	.59
GL-4850	Green	T1 ¾ Pkg.	.98	.73	.59
YL-4850	Yellow	T1 ¾ Pkg.	.98	.73	.59
IRL-40	Infrared	TO-46 Header	1.65	1.40	1.25
IRL-60	Infrared	Axial lead	.78	.54	.49

OPTO-ISOLATORS

Optically coupled pair employing infrared LED and NPN phototransistor.

Litronix Number	Break-down V	Net Each, Lots of 1-99	100-999	1000 Up	Litronix Number	Break-down V	Net Each, Lots of 1-99	100-999	1000 Up
IL-1	2500	$1.62	$1.08	$0.90	ILA-55*	1500	$2.16	$1.44	$1.20
IL-5	2500	1.80	1.20	1.00	ILD-74	1500	2.43	1.62	1.35
IL-12	1000	1.06	.71	.59	ILQ-74	1500	4.68	3.12	2.60
IL-15	1500	1.48	.98	.82	ILCA2-30†	.....	2.43	1.62	1.35
IL-16	1500	1.71	1.14	.95	ILCA2-55†	.....	2.70	1.80	1.50
IL-74	1500	1.24	.83	.69	ILCT-6	1500	3.33	2.22	1.85
ILA-30*	1500	1.94	1.30	1.08	IL-100	1500	6.95	5.50	4.95

*Infrared emitter and photo darlington. †LED and photo darlington transistor.

SINGLE AND DUAL DIGIT NUMERIC DISPLAYS

Litronex Number	Char. Ht., In.	Description	Polarity	Net Each, Lots of 1-99	100-999	1000 Up
DL-707†	0.3	7 segment, DP left	CA	$2.95	$2.16	$1.80
DL-707R†	0.3	7 segment, DP right	CA	2.95	2.16	1.80
DL-701	0.3	Overflow, polarity indicator	CA	2.95	2.16	1.80
DL-721†	0.5	Overflow, polarity indicator	CA	7.50	5.00	4.20
DL-727†	0.5	7 segment, DP right	CA	7.50	5.00	4.20
DL-746	0.63	Overflow, polarity indicator	CA	4.90	3.30	2.75
DL-747	0.63	7 segment, DP left	CA	4.90	3.30	2.75
DL-702	0.3	7 segment, DP left	CC	2.95	2.16	1.80
DL-704	0.3	Overflow, polarity indicator	CC	2.95	2.16	1.80
DL-722†	0.5	Overflow, polarity indicator	CC	7.50	5.00	4.20
DL-728†	0.5	7 segment, DP right	CC	7.50	5.00	4.20
DL-749	0.63	Overflow, polarity indicator	CC	4.90	3.30	2.75
DL-750	0.63	7 segment, DP left	CC	4.90	3.30	2.75

†Dual Digit Module.

MAGNIFIED SINGLE DIGIT NUMERIC DISPLAYS—COMMON CATHODE

DL-44M	0.19	Dual, 7 segment, DP right	$7.10	$5.85	$4.90
DL-34M	0.11	Quad, 7 segment, DP right	9.15	7.55	6.30

ALPHA-NUMERIC DISPLAYS

DL-57	0.32	5 x 7 dot matrix, DP left	$10.98	$7.32	$6.10
DL-16	0.157	Magnified, 16 segment, DP left, starburst, monolithic	8.15	6.75	5.65

SPACE PROHIBITS LISTING ALL LITRONIX PRODUCTS
WRITE FOR DATA AND PRICING

PHOTOTRANSISTORS

Litronix Number	Equiv.	Net Each, Lots of 1-99	100-999
LPT 100	FPT 100	$0.80	$0.60
LPT 100A	FPT 100A	.95	.70
LPT 100B	FPT 100B	1.15	.85
LPT 110	FPT 110	1.00	.75
LPT 110A	FPT 110A	1.25	.95
LPT 110B	FPT 110B	1.50	1.10

NUMERIC DISPLAYS COMMON CATHODE

Litronix Number	Equiv.	Net Each, Lots of 1-99	100-999
DL-10	MAN 1	$9.00	$7.50
DL-10A	MAN 10A	6.30	5.25

DISPLAY STICKS

Litronix Number	Description	Net Each 1-99
DL-4520A	.5" 4-digit clock	$10.80
DL-3531	.5" 3½-digit DPm	10.80
DL-3531-4	.5" 4-digit multi.	10.80

WATCH DISPLAYS

Litronix Number	Description	Net Each, Lots of 1-99	100-999
DL-5175	4-digit disp.	$17.85	$13.85
DL-5177	4-digit disp.	17.56	13.65

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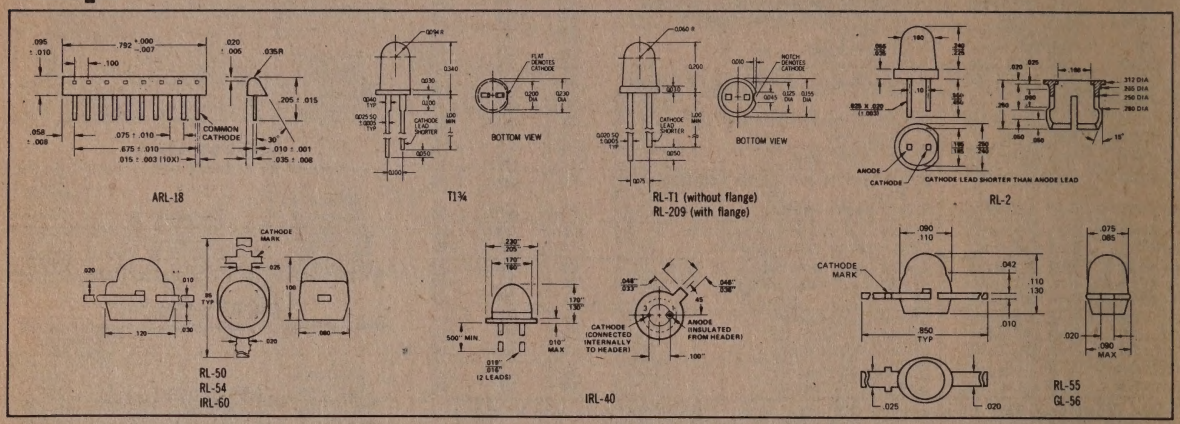
COMPONENT NEEDS.

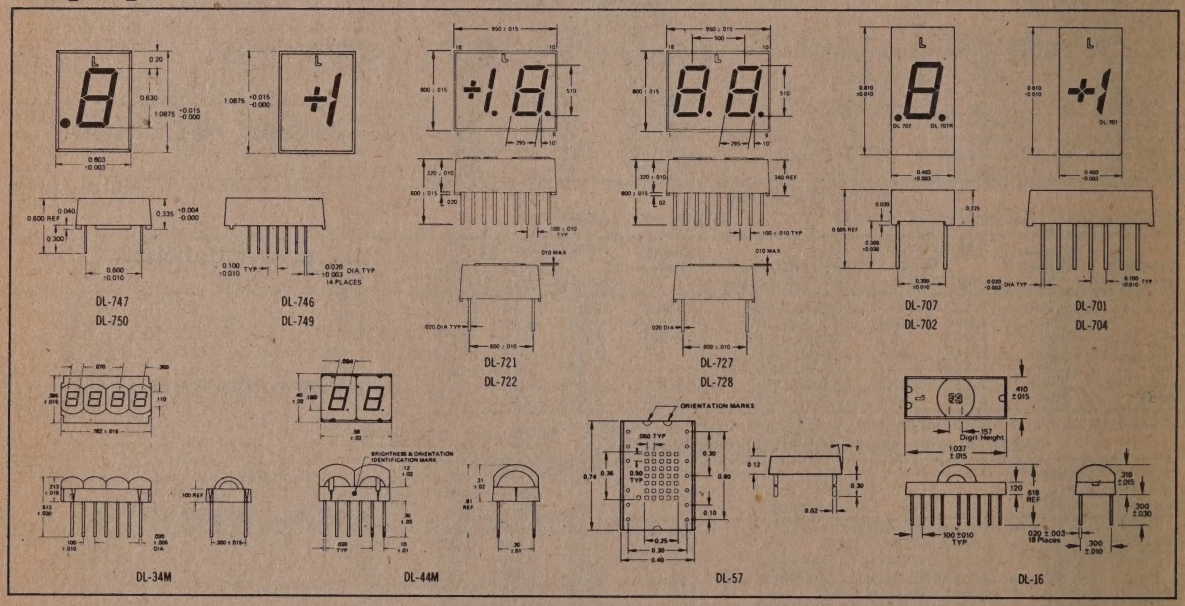
DIMENSIONS

litronix

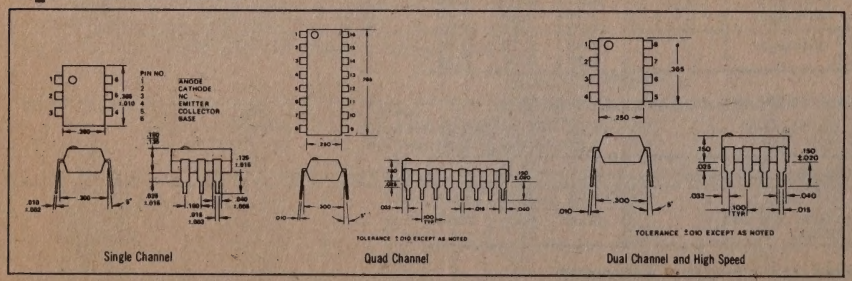
Lamps



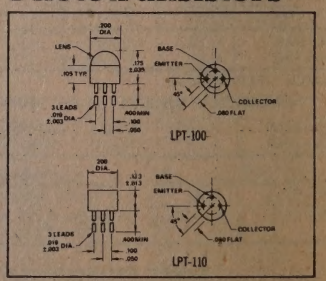
Displays

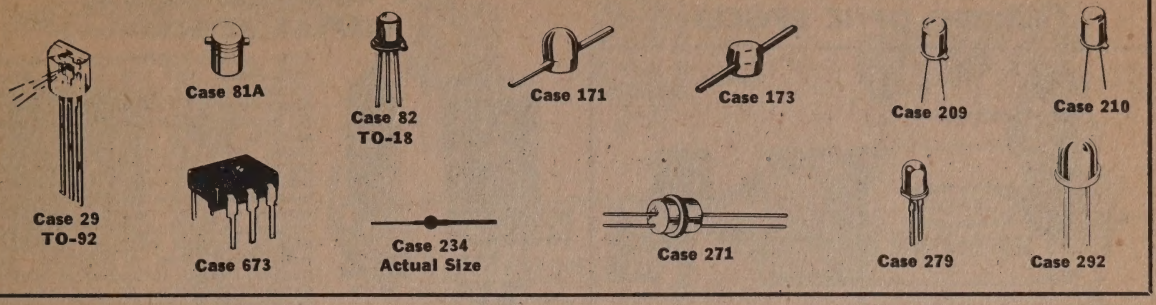


Opto-Isolators



Phototransistors





OPTOELECTRONIC DEVICES

LIGHT EMITTING DIODES

Visible red (660 nM typ. peak emission wavelength) gallium arsenide phosphide emitters for use in panel and circuit indicators, light modulators, alphanumeric displays and film annotation. Diffusing red lens except MLED50, MLED600, MLED610 and MLED640 are clear red lens.

Motorola Type	Case	Brightness at I_F fL (Typ.)	Brightness at I_F mA	Forward Voltage V_F (Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED50	234	750	20	1.6	$0.59	$0.39
MLED55	234	750	2	1.6	.59	.39
MLED455	292	1.2*	20	1.6	.54	.35
MLED500	29	0.3*	20	1.6	.32	.19
MLED600	171	1100	50	1.6	1.27	.85
MLED610	81A	1100	50	1.6	3.90	2.60
MLED640	279	2.0*	20	1.6	.59	.39
MLED650	279	.....	.....	1.6	.50	.37
MLED655	279	2.0*	20	1.6	.59	.39

*Typ. Io value, mcd.

Same as above except visible green diffusing lens; 560 nM typ. peak emission wavelength.

Motorola Type	Case	I_O at I_F Typ. mcd	I_O at I_F mA	Forward Voltage V_F (Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED750	279	0.5*	25	2.1	$1.49	$0.99

*Typ. Io value, mcd.

INFRARED EMITTING DIODES

Infrared (900 nM typ. peak emission wavelength) gallium arsenide emitters provide high power output in light modulators, shaft or position encoders, punched card and tape readers, optical switching and logic circuits. They are spectrally matched for use with silicon detectors.

Motorola Type	Case	Power Output at I_F μW (Typ.)	Power Output at I_F mA	Forward Voltage V_F (Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED60	234	550	50	1.2	$0.62	$0.49
MLED92	29	150	50	1.2	.38	.31
MLED90	234	350	50	1.2	.58	.45
MLED900	171	550	50	1.2	.85	.69
MLED910	81A	150	50	1.2	3.60	2.40
MLED930	209	650	100	1.2	3.50	2.30

COUPLERS (CASE 673)

Gallium arsenide LEDs optically coupled to silicon phototransistors and designed for applications requiring electrical isolation, high current transfer ratios, small package size and low cost. DC current transfer ratio at V_{CE} = 10 V and I_C = 10 mA.

Motorola Type	DC Current Transfer Ratio % Min.	DC Current Transfer Ratio % Typ.	Inspection VDC	Typ. $t_s = t_r + t_f$ μs	Freq. Resp. kHz	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MOC1200	100	100	1500	15.6	30	2.60	1.75
MOC2000*	.....	.....	1500	5.6	300	4.75	3.10

*Case 271; collector light current = 0.5 mA min. at V_{CE} = 5.0 V and I_F = 15 mA.

AS NEW MOTOROLA TYPES ARE DEVELOPED WE WILL HAVE THEM IN STOCK FOR IMMEDIATE DELIVERY

PIN SILICON PHOTODIODES

Designed for application in laser detection, light demodulation, detection of radiation from visible and near infrared LEDs, shaft or position encoders, switching and logic circuits or any design requiring radiation sensitivity and stable characteristics. High speed devices with response time of less than 1.0 ns typical. Dark current = 2.0 nA max. at V_R = 20 V; response time = 1.0 ns typ.

Motorola Type	Case	Lens	H = 2.0 mW/cm² Sensitivity μA/mW/cm²	H = 2.0 mW/cm² Light Current	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MRD500	209	Convex	1.2 min.	6.0 μA min.	$10.90	$7.25
MRD510	210	Flat	0.3 min.	1.5 μA min.	9.90	6.60

NPN SILICON PHOTOTRANSISTORS

H is radiation flux density emitted from a tungsten source at 2870 K.

HIGH DENSITY PHOTOTRANSISTORS

Subminiature NPN silicon phototransistors designed for use in card and tape readers, pattern and character recognition equipment, shaft encoders or any design requiring radiation sensitivity, stable characteristics and high stability. Light current at H = 20 mW/cm².

Motorola Type	Case	Min. Light Current mA	Max. Dark Current nA	Typ. t_s μs	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MRD150	173	0.2*	100†	6.5‡	$1.20	$0.80
MRD601	81A	0.5	25	4.8	3.45	2.30
MRD602	81A	2.0	25	4.8	3.60	2.40
MRD603	81A	4.0	25	4.8	3.80	2.60
MRD604	81A	7.0	25	4.8	4.10	2.75

*At H = 5.0 mW/cm²; sensitivity = 0.04 mA/mW/cm² at H = 5.0 mW/cm². †V_{CC} = 20 V; all others V_{CC} = 30 V. ‡Maximum.

LOW DENSITY PHOTOTRANSISTORS

NPN silicon phototransistors designed for use in industrial inspection, processing and control systems, counters, sorters, switching and logic circuits or any design requiring radiation sensitivity, stable characteristics and moderate mounting density in arrays or single device applications. Sensitivity and light current at H = 5.0 mW/cm²; dark current at V_{CC} = 20 V.

Motorola Type	Case	Sensitivity mA/mW/cm² Min.	Dark Current nA Max.	Light Current mA Min.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MRD300*	82	0.8	25	4.0	$2.50	$1.75
MRD310*	82	0.2	25	1.0	2.25	1.50
MRD450*	171	0.2	100	1.0	1.13	.75
MRD810†	210	0.2	50	1.0	6.00	4.00
MRD3050‡	82	0.02	100	0.1	1.20	.80
MRD3051‡	82	0.04	100	0.2	1.35	.90
MRD3052‡	82	0.02 –0.08	100	.1–.4	1.80	1.20
MRD3053‡	82	0.05 –0.2	100	.25–1	1.80	1.20
MRD3054‡	82	0.125–0.5	100	.625–2.5	1.95	1.30
MRD3055‡	82	0.3	100	1.5	1.45	.95
MRD3056‡	82	0.4	100	2.0	1.65	1.10

*Maximum Switching Time: 6.5 μs; †11 μs; ‡5.5 μs typical.

SILICON PHOTO DARLINGTON AMPLIFIERS

Designed for use where extremely high sensitivity is required. Plastic side reading devices are the most economical detectors available. Sensitivity and light current at H = 2.0 mW/cm²; dark current at H = 0. Switching time, 400 μsec.

Motorola Type	Case	Sensitivity mA/mW/cm² Typ.	Dark Current nA Max.	Light Current mA Typ.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N5777	29	2.0	100	4.0	$0.60	$0.50
2N5778	29	2.0	100	4.0	.70	.55
2N5779	29	4.0	100	8.0	1.00	.70
2N5780	29	4.0	100	8.0	1.20	.80
MRD14B	29	1.0	100	2.0	.55	.40

RCA SOLID STATE ELECTRO-OPTIC DEVICES

OP-3
Approx. 2X
Actual Size

OP-10
Approx. 2X
Actual Size

OP-12
Approx.
Actual Size

IR EMITTING DIODES

Non-lasing GaAs devices emitting radiant flux in the IR (940 nm). Line width, at half-power points, is 50 nm typical. Types are designed for either pulse or CW applications at room temperature.

RCA Type	Pkg.	P_O at I_F Min. mW	mA	P_{om} at I_{FM} Typ. mW	A	Net Each, Lots of 1-99	100-999	1000 Up
SG1001	OP-1	1.0	50	24	1	$7.15	$4.70	$3.60
SG1002	OP-10	1.0	50	24	1	2.75	2.00	1.65
SG1003	OP-10	1.5	50	30	1	3.95	2.90	2.35
SG1004	OP-10	2.4	50	40	1	5.00	3.65	3.05

SINGLE-DIODE LASERS

GaAs devices emitting radiant flux in the IR (904 nm). Line width, at half-power points, is 3.5 nm typical. Types are designed for pulse applications at room temperature. Forward current pulse duration is 0.2 μs max. (SG2014, SG2015, 0.1 μs).

RCA Type	Pkg.	P_{OM} at I_{FM} Min. W	A	Max. Duty Factor %	Emitting Area Mils	Net Each, Lots of 1-99	100-999	1000 Up
SG2001	OP-3	1	10	0.1	3 x	$ 28.00	$ 22.45	$ 19.65
SG2002	OP-3	2	10	0.1	0.08	44.85	33.30	24.05
SG2003	OP-3	3	25	0.04	6 x	14.85	10.85	7.75
SG2004	OP-3	5	25	0.1	0.08	17.60	12.60	10.35
SG2005	OP-3	5	20	0.1		26.75	21.15	16.90
SG2006	OP-3	7	40	0.04	9 x	11.50	9.50	7.55
SG2007	OP-3	10	40	0.1	0.08	20.30	18.30	14.90
SG2008	OP-3	10	30	0.1		16.20	11.65	9.60
SG2009	OP-3	12	75	0.04	16 x	28.30	20.65	17.20
SG2010	OP-3	15	75	0.1	0.08	45.30	41.05	37.45
SG2011	OP-3	15	60	0.1		42.25	37.45	32.60
SG2012	OP-12	20	100	0.04	24 x	49.45	45.90	42.90
SG2013	OP-12	25	100	0.04	0.08	39.80	29.00	24.15
SG2014	OP-12	40	250	0.005	55 x	39.80	29.00	24.15

STACKED-DIODE LASER

GaAs device consisting of three diode pellets series connected and vertically stacked. Emit radiant flux in the IR (904 nm). Line width, at half-power points, is 3.5 nm typical. Designed for pulse operation at room temperature. Forward current pulse duration is 0.2 μs max.

RCA Type	Pkg.	P_{OM} at I_{FM} Min. W	A	Max. Duty Factor	Net Each, Lots of 1-24	25-99	100-Up
SG3001	OP-12	25	40	0.04%	$34.80	$31.65	$28.45

CRYOGENIC LASER ARRAYS

GaAs types consisting of series-parallel connected diodes. Emit radiant flux in the IR (855 nm). Line width, at half-power points, is 15 nm typical. Designed for operation at 77° K (−196° C). Forward current pulse duration is 0.2 μs max.

RCA Type	No. of Ports	No. of Diodes Typical	Min. P_{OM} at I_{FM} = 6 A	Max. Duty Factor	Net Each
SG4001	2	184	10	3%	$2365.00
SG4002	4	368	20	3%	4515.00
SG4003	6	552	30	3%	6480.00

RCA NUMITRON DIGITAL DISPLAY DEVICES

DR2000 Series

DR2100, DR2200 Series

Low voltage digital readout devices with sharp, high brightness numeric display, reliable at all light levels, indoors and out. Fully compatible with IC decoder/drivers and may be operated in either a direct or multiplex mode. Wide spectrum light emission permits use of unlimited color filters. Simple voltage controls make brightness fully adjustable. High contrast segmented digits viewed against dark background. "Upfront" display permits wide-angle viewing (120°–140°) with display free of "clutter" and residual images. Incandescent readout device is free from induced or radiated interference. Rugged, single-plane unit construction for reliable service with 100,000 hours min. life expectancy. Solderable base pins permit direct PC board mounting. In addition to numerals, plus or minus, and decimals, individual segments may be addressed to provide symbol or alphabetical output such as letters A, C, E, F, H, J, L, P, U and Y.

DR2000 Series: Fits low cost 9-pin miniature sockets; 0.8″ mounting centers. Character size, 0.6″ h. x 0.35″ w.

DR2100 and DR2200 Series: Fit TO-5 style, 10-pin sockets; 0.5″ mounting centers. Character size, 0.4″ h. x 0.234″ w.

Application information and specifications available on request.

RCA Type	NUMITRON Description	Net, 1-99*
DR2000	Numerals 0 thru 9	$5.50
DR2010	Numerals 0 thru 9 with decimal	5.75
DR2020	Plus or minus and numeral 1	3.25
DR2030	Plus or minus	3.25
DR2100*	Numerals 0 thru 9	5.75
DR2110*	Numerals 0 thru 9 with decimal on left	5.90
DR2120*	Plus or minus and numeral 1	3.25
DR2130*	Plus or minus	3.25
DR2200*	Low power version of DR2100	5.75
DR2210*	Low power version of DR2110	5.90
DR2220*	Low power version of DR2120	3.25
DR2220*	Low power version of DR2130	3.25

*Available with leads bent to form a 0.38″ pin circle for ease of direct PC board mounting. To order, add suffix **V1** (DR2100**V1**, DR2200**V1**); price is the same. ***Larger quantity prices on request.**

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ON ALL NEW

OR UNLISTED ITEMS.

RAYTHEON Raysistor® OPTOELECTRONIC DEVICES

Metal Tube

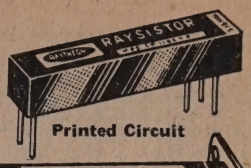
Shell with 7- or 9-Pin Header

Epoxy Shell with Flying Leads

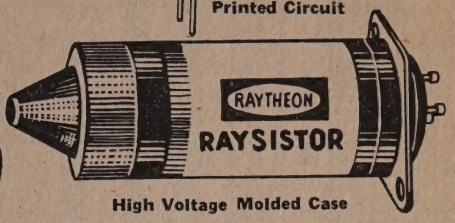
TO-5

Crystal Can with 4- or 6-Pin Header

High Voltage with Flying Leads



Printed Circuit



High Voltage Molded Case

The Raysistor® is a four-terminal optoelectronic device which performs a variety of control functions. It provides noise-free control of AC or DC signals over a wide dynamic range without transients or contact (or wiper) chatter. Since there are no moving parts, Raysistors are exceptionally rugged and have inherently long life in such typical applications as variable resistors, solid state switches, relays, and voltage or signal isolators. These units operate on the principle of controlled light acting on a photoresistive element. No electrical or mechanical connection exists between the control and signal circuits. Available in the ten case styles described at right.

®Registered Raytheon Company trademark.

CASE STYLES AND SIZES

Metal tube 2.25″ lg. nom. (example, Model CK1101); standard TO-5 case 0.370″ dia. max. x 0.260″ h. max. with flexible leads 1.5″ lg. min. (Model CK1114); crystal can 0.735″ w. x 0.350″ th. x 0.745″ h. with pins 0.310″ lg. (Model CK1121); printed circuit type in case 1.94″ w. x 0.375″ th. x 0.42″ h. with PC mounting tabs (Model CK1101P); shell 0.730″ dia. x 1.150″ h. with 7-pin header (Model CK2033); epoxy shell 0.900″ dia. x 1.150″ h. with 9-pin header (Model CK2042); epoxy shell 0.438″ dia. x 1.125″ lg. with flying leads (Model CK2034); high-voltage type in case 0.635″ dia. x 2.715″ lg. nom. with flying leads (Model CK2029); crystal can 0.735″ w. x 0.625″ th. x 0.745″ h. with 6-pin header (Model CK2020); high-voltage type in 1.28″ dia. x 3.65″ lg. molded case with pins 0.44″ lg. (Model CK1105).

Raytheon Model No.	Control Lamp		Signal (Photocell)						Light Source Type‡	Case Style (See Description Above)	Net Each, Lots of		
			Resistance, Ohms		Max. Volts	Max. Power, mW‡	Typical Switching Time, sec.#						
	Volts	mA	Max. On*	Min. Off†			On‡	Off§			1-9	10-24	25-99
CK1101	120•	1–3▲	1000	10^7	100	75	.0012**	.060	N	Metal tube	$13.65	$11.15	$ 9.30
CK1101P	120	1–3▲	1000	10^7	100	75	.0012**	.060	N	Printed circuit	13.40	10.95	9.15
CK1102	0–1	0–50	700	10^6	100	75	.020	.300	I	Metal tube	13.65	11.15	9.30
CK1102P	0–1	0–50	700	10^6	100	75	.020	.300	I	Printed circuit	13.40	10.95	9.15
CK1103	0–5	0–200	150	10^6	100	75	.020	.800	I	Metal tube	13.65	11.15	9.30
CK1103P	0–5	0–200	150	10^6	100	75	.020	.800	I	Printed circuit	13.40	10.95	9.15
CK1104	0–25	0–37	150	10^6	100	75	.010	.450	I	Metal tube	13.65	11.15	9.30
CK1104P	0–25	0–37	150	10^6	100	75	.010	.450	I	Printed circuit	13.40	10.95	9.15
CK1105	120•	1–3▲	10,000	10^6	300	250	.020	1.0	N	High voltage; molded case	35.00	28.50	23.80
CK1106	0–120	0–25	300	10^7	250	250	.050	.700	I	High voltage; molded case	Prices on request		
CK1108	0–5	0–200	250	10^6	300	250	.030	1.0	I	High voltage; molded case	35.00	28.50	23.80
CK1112	0–10	0–17	700	10^6	100	75	.030	.400	I	Molded metal tube	13.65	11.15	9.30
CK1112P	0–10	0–17	700	10^6	100	75	.030	.400	I	Printed circuit	13.40	10.95	9.15
CK1113	.....	0–25	400	10^7	100	100	.005	.175	L	Metal tube	Prices on request		
CK1113P	.....	0–25	400	10^7	100	100	.005	.175	L	Printed circuit	Prices on request		
CK1114	0–1	0–17	850	10^6	100	100	.018	.060	I	TO-5	11.28	9.22	7.74
CK1114R	0–1	0–17	850	10^6	100	100	.018	.060	I	TO-5	13.65	11.15	9.30
CK1115	0–4	0–55	200	10^7	200	100	.020	.300	I	TO-5	12.14	9.90	8.30
CK1116	0–4	0–17	350	10^7	200	100	.010	.300	I	TO-5	12.14	9.90	8.30
CK1117	0–3	0–15	400	10^7	100	100	.030	.300	I	TO-5, CdSe	Prices on request		
CK1121	0–5	0–55	150	10^7	200	100	.020	.250	I	Crystal can with socket	5.65	4.60	3.88
CK1122	0–10	0–17	1000	10^7	200	100	.030	.225	I	Crystal can with socket	6.21	4.97	4.04
CK1122B	0–10	0–18	850	10^8	200	125	.030	.225	I	Crystal can, CdSe	6.21	4.97	4.04
CK1122W	0–10	0–18	850	10^8	200	125	.030	.225	I	Crystal can, CdSe	6.21	4.97	4.04
CK1123	0–25	0–37	150	10^7	200	100	.010	.300	I	Crystal can with socket	6.21	4.97	4.04
CK1124■	150•	.2–1.2▲	3000	10^7	200	100	.002**	.100	N	Crystal can with socket	6.21	4.97	4.04
CK2000	0–25	0–37	40	10^6	100	100	.030	.300	I	Crystal can with socket	6.58	5.33	4.61
CK2000B	0–25	0–37	40	10^7	100	100	.040	.400	I	Crystal can, CdSe	10.83	8.80	7.45
CK2003	0–10	0–17	225	10^7	150	100	.035	.250	I	Crystal can with socket	7.10	6.21	5.62
CK2008P	120	.5–3.5	300	10^7	100	100	.005	.120	N	Printed circuit	13.34	11.04	9.25
CK2011	0–120	0–25	300	10^6	250	250	.050	.700	I	High voltage; molded case	31.05	28.75	23.50
CK2013	0–25	0–37	100	10^6	100	100	.035	.700	I	Crystal can, CdS/Se	17.25	12.65	9.78
CK2014	0–3	0–47	500	2×10^7	200	100	.050	.700	I	TO-5	34.50	30.36	29.10
CK2015	0–25	0–37	1500	10^8	200	100	.015	0.75	I	Crystal can with socket	6.21	4.97	4.04
CK2016■	150	.2–1.2	1000	10^6	150	100	.010	.250	N	Crystal can with socket	6.21	4.97	4.04
CK2018	0–5	0–55	150	10^9	200	100	.010	.175	I	Crystal can with socket	6.58	5.53	4.61
CK2019	0–10	0–17	1000	10^6	150	100	.040	1.5	I	Crystal can CdS with socket	6.21	4.97	4.04
CK2020	0–10	0–17	1500	10^6	150	100	.040	1.5	I	1 lamp/crystal; 2 cells CdS‡‡	10.00	9.00	8.00
CK2021	0–10	0–17	500	10^7	150	100	.040	.250	I	1 lamp/crystal; 2 cells CdSe‡‡	10.00	9.00	8.00
CK2025P	0–10	0–18	1000	10^6	100	100	.030	.650	I	Printed circuit	Prices on request		
CK2028A	0–25	0–37	200	10^6	100	100	.050	1.5	I	Crystal can CdS with socket	9.20	7.48	6.33
CK2028B	0–25	0–37	200	10^6	100	100	.050	1.5	I	Crystal can CdS with socket§§	9.20	7.48	6.33
CK2029	0–10	0–35	2000	10^8	250	250	.020	.160	I	High voltage; flying leads	22.56	17.55	13.79
CK2030	0–10	0–17	700	10^7	250	250	.040	.450	I	High voltage; molded case	28.18	23.00	19.20
CK2032	0–10	0–17	420	10^7	250	250	.040	.250	I	High voltage; flying leads	22.56	17.55	13.79
CK2033	0–10	0–17	3500♦	10^7	200	100	.050	1.5	I	1 lamp/2 cells CdS; 7-pin hdr.	7.94	6.33	5.35
CK2034	0–25	0–37	300	10^6	100	100	.060	1.4	I	1 lamp/2cls. CdS; flying lds.††	9.20	7.48	6.33
CK2035	120	1–3▲	1000	10^7	250	200	.010	.125	N	High voltage; flying leads.	22.56	17.55	13.79
CK2036	0–10	0–17	3000	10^7	200	100	.040	.250	I	1 lamp/2 cls; flying leads††	9.20	7.48	6.33
CK2037	0–4	0–55	1000	10^6	200	100	.040	1.5	I	TO-5 CdS	10.06	8.22	6.90

*Nominal On resistance = typical photocell resistance when nominal voltage is applied at control terminals, measured at 25° C; won't exceed max. value indicated. †Has negative temperature coefficient; typical values: 100 megohms at +25° C, 20 megs at +65° C and 1000 megs at −55° C measured with 50-volt signal. ‡Time required for voltage across photocell to fall to 10% of initial value, measured from instant that max. rated control voltage is applied to lamp. §Time required for voltage across photocell to rise to 90% of final value from instant that max. rated control voltage is removed from lamp. #Test conditions: Signal voltage, 50 volts; signal circuit load, 100,000 ohms. •DC or peak voltage; current-limiting resistor must be used in series with control lamp (typical value, 20,000 ohms; 100,000 ohms for CK1124). ▲Control current is linear with voltage over stated range, but light source may be operated below lower limit. ■Observe correct polarity to realize specified performance. ♦Tracking. ‡Letter N indicates gas-discharge type light source; I, incandescent type; L, LED. ‡100 mW rating applies only to room ambient temperatures and below; max. dissipation, 25 mW at 65° C. **Depends upon rate of successive firing of lamp; initial switch-on time may vary up to 100 msec; specified values apply when control circuit is energized at 2 Hz or faster rate. ††Epoxy shell. ‡‡With socket. §§Black anodized.

RAYSISTORS (CONTINUED)

Raytheon Model No.	Control Lamp		Signal (Photocell) Resistance, Ohms		Max. Volts	Max. Power, mW‡	Typical Switching Time, sec.#		Light Source Type¤	Case Style (See Description Above)	Net Each, Lots of		
	Volts	mA	Max. On*	Min. Off†			On‡	Off§			1-9	10-24	25-25
CK2038	0–10	0–18	1500	10^6	200	125	.045	.850	I	7-pin header††	7.94	6.33	5.35
CK2039	0–1	0–18	800	10^6	100	100	.030	.300	I	TO-5, CdSe	11.04	8.86	7.59
CK2040	.....	0–25	1200	10^6	200	125	.012	.450	L	7-pin header,†† dual LED	Prices on request		
CK2042	0–10	0–17	1500	10^6	150	100	.050	1.5	I	1 lamp/3 cells CdS; 9-pin hdr.††	10.00	9.00	8.00
CK2043	0–25	0–37	300	10^6	150	100	.040	1.3	I	1 lamp/3 cells CdS; 9-pin hdr.††	10.00	9.00	8.00
CK2045	0–25	0–37	300	10^6	150	125	.045	.950	I	9-pin header††	Prices on request		
CK2046	0–1	0–17	350	10^6	100	100	.030	.090	I	TO-5	11.04	8.91	7.59
CK2051	0–10	0–17	2000	10^6	200	100	.040	.350	I	Crystal can CdS with socket	7.16	5.82	4.58
CK2052	0–25	0–37	300	10^6	200	100	.018	1.2	I	Crystal can CdS with socket	7.16	5.82	4.58
CK2053	0–5	0–55	1250	10^6	200	100	.020	1.2	I	Crystal can CdS with socket	7.16	5.82	4.58
CK2061	150	.2–1.2	2500	10^7	150	125	.010	.125	N	Epoxy case, flying leads	Prices on request		
CK2062	0–10	0–18	750	10^7	150	175	.035	.300	I	Epoxy case, flying leads	Prices on request		
CK2065	0–10	0–18	500	10^7	300	250	.030	.500	I	High voltage; molded case	Prices on request		
CK2066	0–25	0–37	350	10^7	300	250	.040	.650	I	High voltage; molded case	Prices on request		
CK2067	.....	0–25	750	10^7	300	250	.010	.650	L	High voltage; molded case	Prices on request		
CK2070	0–1	0–18	2500	10^6	100	100	.025	.550	I	TO-5, CdSe	Prices on request		
CK2071	0–4	0–55	1000	10^6	200	100	.100	.900	I	TO-5 CdS	10.06	8.32	6.90
CK2072	0–4	0–17	1800	10^6	200	100	.015	.400	I	TO-5 CdS	10.75	8.91	7.59
CK2078	0–10	0–18	850	10^7	150	125	.035	.350	I	TO-5††	5.63	4.58	3.87
CK2080	0–4	0–55	750	10^8	240	150	.035	.550	I	TO-5 CdS/Se	Prices on request		
CK2086	0–10	0–18	1000	10^7	150	125	.030	.300	I	Crystal can, CdSe	5.83	4.78	4.07
CK2095	0–4	0–20	1200	10^6	75	75	.035	.850	I	TO-5, CdS	Prices on request		
CK2101	0–5	0–22	50	10^6	100	100	.020	.500	I	TO-5, CdSe	10.06	8.22	6.90
CK2112	0–10	0–18	300	10^7	150	125	.035	.350	I	Crystal can, CdS/Se	8.80	7.71	6.97
CK-2118	0–4	0–55	100	10^6	100	100	.035	.300	I	TO-5 CdS/Se	10.75	8.91	7.59
CK2124	0–3	0–15	450	10^6	100	100	.025	.800	I	TO-5, CdS/Se	17.82	14.72	10.68
CK2127	0–3	0–15	700	10^6	100	100	.025	.700	I	TO-5, CdS/Se	Prices on request		
CK2129	120	.5–3.5	2000	10^7	250	250	.010	.350	N	High voltage; flying leads	Prices on request		
CK2132	0–10	0–18	750	10^8	150	125	.030	.125	I	Crystal can; CdSe	11.04	8.91	7.59
CK2137	0–12	0–25	500	10^7	150	125	.050	.750	I	TO-5††	Prices on request		
CK2139	0–5	0–55	100	10^7	125	125	.040	.300	I	Crystal can, CdS/Se	8.15	6.69	5.73
CK2140	.....	0–25	7500	5×10^7	100	75	.002	.015	L	TO-5, CdSe	7.02	6.09	5.52
CK2141	.....	0–25	5000	5×10^7	150	100	.004	.120	L	TO-5, CdSe	7.02	6.09	5.52
CK2142	.....	0–25	500	10^7	150	100	.005	.650	L	TO-5, CdS/Se	7.02	6.09	5.52
CK2143	.....	0–25	3000	5×10^6	150	100	.005	.850	L	TO-5, CdS/Se	7.02	6.09	5.52
CK2145	.....	0–25	250	5×10^5	60	50	.003	.900	L	Tubular epoxy, axial leads	5.75	4.02	3.28
CK2146	.....	0–25	2500	10^7	100	100	.002	.30	L	Tubular epoxy, axial leads	5.75	4.02	3.28
CK2147	.....	0–25	1000	10^8	150	125	.003	.075	L	Crystal can, CdSe	Prices on request		
CK2148	.....	0–25	300	10^6	125	125	.015	.350	L	Crystal can, CdS/Se	Prices on request		
CK2149	.....	0–25	150	10^6	125	125	.015	.700	L	Crystal can, CdS/Se	Prices on request		
CK2150	0–5	0–55	300	10^6	75	75	.040	.800	I	TO-5, dual	10.92	9.08	7.94
CK2151	0–5	0–55	850	10^6	75	75	.060	.850	I	TO-5, dual	Prices on request		
CK2153	0–3	0–15	1000	10^6	75	75	.050	.800	I	TO-5, dual	Prices on request		
CK2154	0–3	0–15	8000	10^6	75	75	.050	.850	I	TO-5, dual	Prices on request		
CK2155	.....	0–40	900	10^6	75	75	.010	.500	L	TO-5, dual	Prices on request		
CK2157	.....	0–40	600	10^6	75	75	.010	.650	L	TO-5, dual	Prices on request		
CK2160	0–10	0–18	850	10^7	75	75	.035	.450	I	Flying lead††, dual	10.92	9.08	7.94
CK2161	0–10	0–18	3000	10^6	75	75	.035	.850	I	Flying lead††, dual	10.92	9.08	7.94
CK2162	.....	0–25	1500	10^6	75	75	.010	.600	L	Flying lead††, dual	Prices on request		
CK2170	0–10	0–18	850	10^6	75	75	.035	.080	I	Crystal can, dual	9.20	7.48	6.33
CK2171	0–10	0–18	2000	10^6	75	75	.035	.950	I	Crystal can, dual	9.20	7.48	6.33
CK2172	0–25	0–37	300	10^6	75	75	.045	.950	I	Crystal can, dual	Prices on request		
CK2173	.....	0–25	600	10^6	75	75	.010	.650	L	Crystal can, dual	Prices on request		
CK2177	0–12	0–24	400	10^7	250	350	.040	.300	I	Tubular epoxy, flying leads	Prices on request		
CK2178	0–12	0–24	1500	10^7	300	350	.040	.500	I	Tubular epoxy, flying leads	5.75	4.02	3.28

*Nominal On resistance = typical photocell resistance when nominal voltage is applied at control terminals, measured at 25° C; won't exceed max. value indicated. †Has negative temperature coefficient; typical values: 100 megohms at +25° C, 20 megs at +65° C and 1000 megs at −55° C measured with 50-volt signal. ‡Time required for voltage across photocell to fall to 10% of initial value, measured from instant that max. rated control voltage is applied to lamp. §Time required for voltage across photocell to rise to 90% of final value from instant that max. rated control voltage is removed from lamp. #Test conditions: Signal voltage, 50 volts; signal circuit load, 100,000 ohms. •DC or peak voltage; current-limiting resistor must be used in series with control lamp (typical value, 20,000 ohms; 100,000 ohms for CK1124). ▲Control current is linear with voltage over stated range, but light source may be operated below lower limit. ■Observe correct polarity to realize specified performance. ♦Tracking. ¤Letter N indicates gas-discharge type light source; I, incandescent type; L, LED. ‡100 mW rating applies only to room ambient temperatures and below; max. dissipation, 25 mW at 65° C. **Depends upon rate of successive firing of lamp; initial switch-on time may vary up to 100 msec; specified values apply when control circuit is energized at 2 Hz or faster rate. ††Epoxy shell. ††With socket. §§Black anodized.

PHOTOCONDUCTIVE CELLS

Raytheon Model No.	Sensitive Material	Peak Spectral Response (Angstroms)	Resis. @ 2 Ft. Cdls. (ohms)	Dark Resis. "Off R" (ohms)	Rise Time Typ. (sec.)	Fall Time Typ. (sec.)	Voltage Max. (VDC)	Power Max. (mW)	Net Each, Lots of 1-99	100-499	500-999
HERMETIC SEALED, ¼" GLASS VIAL											
CK1201	CdSe	7150	600	10^7	.005	.080	75	75	$1.75	$1.65	$1.50
CK1202	CdSe	7150	1200	10^7	.005	.060	100	100	1.75	1.65	1.50
CK1203	CdSe	7150	3500	10^7	.006	.060	150	100	1.75	1.65	1.50
CK1204	CdSe	7150	7000	10^8	.006	.050	200	125	1.75	1.65	1.50
CK1205	CdS/Se	6550	10,000	10^6	.006	.150	150	125	1.75	1.65	1.50
CK1206	CdSe	7150	20,000	10^8	.005	.040	200	150	1.75	1.65	1.50
CK1207	CdSe	7150	100K	10^9	.004	.015	200	150	1.75	1.65	1.50
CK1208	CdS/Se	6150	3000	10^6	.005	.175	75	75	Prices on request		
CK1209	CdS/Se	5500	6000	10^6	.005	.250	75	75	Prices on request		
CK1221	CdS	5150	7000	500K	.007	.900	75	75	1.75	1.65	1.50
CK1222	CdS	5150	12,000	10^6	.007	.800	75	75	1.75	1.65	1.50

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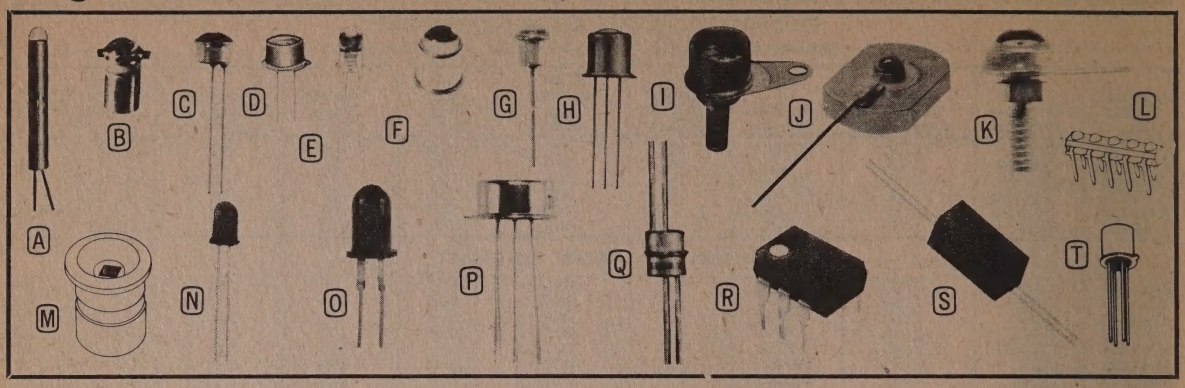
PHOTOCONDUCTIVE CELLS (CONTINUED)

HERMETIC SEALED, ¼" GLASS VIAL (CONTINUED)

Raytheon Model No.	Sensitive Material	Peak Spectral Response (Angstroms)	Resis. @ 2 Ft. Cdls. (ohms)	Dark Resis. "Off R" (ohms)	Rise Time Typ. (sec.)	Fall Time Typ. (sec.)	Voltage Max. (VDC)	Power Max. (mW)	Net Each, Lots of 1-99	100-499	500-999
CK1223	CdS	5150	20,000	10^6	.007	.500	100	100	1.75	1.65	1.50
CK1224	CdS/Se	6550	1000	10^7	.006	.900	75	75	1.75	1.65	1.50
CK1225	CdS/Se	6150	10,000	10^7	.006	.700	125	125	1.75	1.65	1.50
CK1226	CdS/Se	5500	15,000	10^6	.007	.950	100	100	1.75	1.65	1.50
CK1227	CdS/Se	6150	100K	5 x 10^7	.005	.500	200	150	Prices on request		
CK1228	CdS	5150	130K	5 x 10^7	.005	.500	200	150	Prices on request		
HERMETIC SEALED, TO-5 CASE											
CK1241	CdSe	7150	800	10^7	.005	.080	75	75	$2.70	$2.00	$1.80
CK1242	CdSe	7150	1200	10^7	.005	.060	100	100	2.70	2.00	1.80
CK1243	CdSe	7150	3500	10^7	.006	.060	100	100	2.70	2.00	1.80
CK1244	CdSe	7150	7000	10^8	.006	.060	100	100	2.70	2.00	1.80
CK1245	CdS/Se	6550	1500	10^6	.005	.450	100	100	2.70	2.00	1.80
CK1246	CdSe	7150	10,000	10^8	.005	.010	200	150	2.70	2.00	1.80
CK1247	CdSe	7150	30,000	10^8	.005	.005	200	150	2.70	2.00	1.80
CK1248	CdS/Se	6150	7000	10^7	.005	.250	100	125	Prices on request		
CK1249	CdS/Se	6150	4000	10^6	.006	.500	100	100	Prices on request		
CK1261	CdS	5150	6000	500K	.007	1.200	75	75	2.70	2.00	1.80
CK1262	CdS	5150	12,000	10^6	.007	.900	75	75	2.70	2.00	1.80
CK1263	CdS	5150	20,000	10^6	.007	.500	100	100	2.70	2.00	1.80
CK1264	CdS	5150	10,000	10^7	.006	.500	100	100	2.70	2.00	1.80
CK1265	CdS/Se	6550	3000	10^7	.005	.400	100	100	2.70	2.00	1.80
CK1266	CdS/Se	6150	3000	10^6	.005	.375	75	75	2.70	2.00	1.80
CK1267	CdS/Se	6150	15,000	10^7	.007	.200	200	125	Prices on request		
CK1268	CdS	5150	80,000	10^7	.006	.300	200	125	Prices on request		
HERMETIC SEALED, TO-8 CASE											
CK1251	CdSe	7150	250	10^7	.005	.175	150	125	Prices on request		
CK1252	CdSe	7150	12,000	10^8	.005	.150	300	250	Prices on request		
CK1253	CdS/Se	6550	8000	10^7	.005	.450	200	150	Prices on request		
CK1254	CdS/Se	6550	10,000	10^7	.006	.400	300	250	Prices on request		
CK1255	CdS/Se	6100	8000	10^6	.005	.600	200	150	Prices on request		
CK1256	CdS/Se	6100	4000	10^7	.006	.500	250	250	Prices on request		
CK1257	CdS	5150	10,000	10^6	.005	.950	200	150	Prices on request		
CK1258	CdS	5150	12,000	10^8	.007	.650	200	200	Prices on request		
TO-3 POWER CELL											
CK1286	CdSe	7150	12,000	10^8	3.0	300	300	600	Prices on request		
CK1287	CdS/Se	6550	6500	10^8	3.5	400	300	600	Prices on request		
CK1288	CdS/Se	5550	9000	10^8	4.0	550	300	600	Prices on request		
CK1289	CdS/Se	5150	12,000	10^8	5.0	650	300	600	Prices on request		
HERMETIC SEALED, TO-6 CASE											
CK1290	CdS	5100	6500	10^7	4.0	575	450	1000	Prices on request		
CK1291	CdS	5100	12,000	10^7	4.0	575	450	1000	Prices on request		
CK1292	CdS/Se	5500	5000	10^7	4.0	450	450	1000	Prices on request		
CK1293	CdS/Se	5100	3000	10^8	3.0	325	450	1000	Prices on request		
EPOXY COATED "OPEN," TO-18 DIAMETER											
CK1210	CdSe	7150	8500	10^7	.007	.250	100	75	Prices on request		
CK1211	CdS/Se	6550	6000	10^6	.006	.500	100	75	Prices on request		
CK1212	CdS/Se	6100	1500	5 x 10^5	.007	1.2	100	75	Prices on request		
CK1213	CdS/Se	5500	9000	5 x 10^5	.009	1.2	75	75	Prices on request		
CK1214	CdS/Se	5100	7000	5 x 10^5	.010	1.3	100	75	Prices on request		
EPOXY COATED "OPEN," TO-5 DIAMETER											
CK1216	CdSe	7150	1000	10^7	.005	.175	100	125	Prices on request		
CK1217	CdS/Se	6550	1500	10^7	.004	.400	100	125	Prices on request		
CK1218	CdS/Se	6550	3500	10^6	.005	.550	150	125	Prices on request		
CK1219	CdS/Se	5500	5000	10^6	.006	.700	100	125	Prices on request		
CK1220	CdS/Se	5500	7000	10^6	.007	.950	150	125	Prices on request		
EPOXY COATED "OPEN," TO-8 DIAMETER											
CK1230	CdSe	7150	12,000	10^7	.005	.125	200	250	Prices on request		
CK1231	CdS/Se	6550	10,000	10^7	.006	.400	250	250	Prices on request		
CK1232	CdS/Se	6100	4000	10^6	.005	.600	300	250	Prices on request		
CK1233	CdS/Se	5500	7500	10^6	.005	.750	250	250	Prices on request		
CK1234	CdS	5100	14,000	10^6	.005	.950	250	250	Prices on request		

DUAL PHOTOCELLS

Raytheon Style No.	Peak Spectral Response (Angstroms)	Resis. @ 2 Ft. Cdls. ½ (ohms)	Dark Resis. ½ (ohms)	Balance %	Tracking %	No. of Leads	Voltage ½ (VDC)	Power ½ (mW)	Net Each, Lots of 1-99	100-499	500-999
HERMETIC SEALED, TO-5 CASE											
CK1280	7150	1500	10^7	85	10	4	125	75	$4.00	$3.20	$2.95
CK1281	6550	4500	10^7	85	10	4	125	75	4.00	3.20	2.95
CK1282	6150	9000	10^6	85	10	4	125	75	4.00	3.20	2.95
CK1283	5150	15.000	10^6	85	10	4	125	75	4.00	3.20	2.95
CK1284	7150	25,000	10^8	85	10	4	125	75	4.00	3.20	2.95
CK1285	7150	120K	10^8	85	10	3	150	100	4.00	3.20	2.95
HERMETIC SEALED, TO-8 CASE											
CK1273	7150	1500	10^7	85	10	3	125	125	$4.00	$3.20	$2.95
CK1274	6550	6500	10^7	85	10	3	125	125	4.00	3.20	2.95
CK1275	6150	6000	10^6	85	10	3	125	125	4.00	3.20	2.95
CK1276	7150	1800	10^7	85	10	4	125	125	4.00	3.20	2.95
CK1277	6550	7500	10^7	85	10	4	125	125	4.00	3.20	2.95
CK1278	5150	12,000	10^6	85	10	4	125	125	4.00	3.20	2.95



SILICON PLANAR LIGHT SENSORS

Light current given is minimum value; all other values are maximum. H = 20 mW/cm². Source is an unfiltered tungsten linear-filament bulb operating at a color temperature of 2870° K.

TI Type	Fig.	Current at Voltage: Light mA	Light V	Dark nA	Dark V	P_D mW	Net Ea., Lots 1-99	Net Ea., Lots 100 Up
1N5722	B	0.5	5	25	30	50		
1N5723	B	2	5	25	30	50		
1N5724	B	4	5	25	30	50		
1N5725	B	7	5	25	30	50		
LS600	B	0.8*	5	25	30	50		
TIL63	C	0.4	5	25	30	50		
TIL64	C	0.4	5	25	30	50		
TIL65	C	10	5	25	30	50		
TIL66	C	2.5	5	25	30	50		
TIL67	C	6	5	25	30	50		
TIL78	E	1	5	25	30	50		
TIL81	F	5	5	100	10	250		
TIL99	D	1	5	100	10	250		
TIL401	A	0.5	5	25	30	50		
TIL402	A	2	5	25	30	50		
TIL403	A	5	5	25	30	50		
TIL404	A	8	5	25	30	50		
TIL405	A	10	5	25	30	50		
TIL406	A	15	5	25	30	50		
TIL601	B	0.5	5	25	30	50		
TIL602	B	2	5	25	30	50		
TIL603	B	4	5	25	30	50	Prices on Request	
TIL604	B	7	5	25	30	50		
TIL605	B†	0.5	5	25	30	50		
TIL606	B†	2	5	25	30	50		
TIL607	B†	4	5	25	30	50		
TIL608	B†	7	5	25	30	50		
TIL609	G	0.5	5	25	30	50		
TIL610	G	2	5	25	30	50		
TIL611	G	4	5	25	30	50		
TIL612	G	7	5	25	30	50		
TIL613	G†	0.5	5	25	30	50		
TIL614	G†	2	5	25	30	50		
TIL615	G†	4	5	25	30	50		
TIL616	G†	7	5	25	30	50		
TIL621	L	1.5	5	50	30	50		
TIL622	L	1.5	5	50	30	50		
TIL623	L	1.5	5	50	30	50		
TIL624	L	1.5	5	50	30	50		
TIL625	L	1.5	5	50	30	50		
TIL626	L	1.5	5	50	30	50		
TIL627	L	1.5	5	50	30	50		
TIL628	L	1.5	5	50	30	50		
TIL629	L	1.5	5	50	30	50		
TIL630	L	1.5	5	50	30	50		

*H = 9 mW/cm², wavelength = 0.7 to 1 μm. †Less lens.

GALLIUM ARSENIDE INFRARED SOURCES

TI Type	Fig.	Min. P_O at I_F mW	Min. P_O at I_F mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIL23	B	0.4	50		
TIL24	B	1.0	50		
TIL26	C	1	35		
TIL31	H	3.3	100		
TIL32	E	0.5	20		
TIL33	H	2.5	100		
TIL34	H	1.6	100	Prices on Request	
TIL41	L	0.5	20		
TIL42	L	0.5†	20		
TIL43	L	0.5†	20		
TIL44	L	0.5†	20		
TIL45	L	0.5†	20		
TIL46	L	0.5†	20		
TIL47	L	0.5†	20		
TIL48	L	0.5†	20		
TIL49	L	0.5†	20		

GALLIUM ARSENIDE (CONT.)

TI Type	Fig.	Min. P_O at I_F mW	Min. P_O at I_F mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIXL06	I	0.6	500		
TIXL12	I	40	300		
TIXL13	I	20	300		
TIXL14	I	60	1000	Prices on Request	
TIXL15	I	30	1000		
TIXL16A	J	100	2000		
TIXL16B	J	200	2000		
TIXL16C	J	350	2000		
TIXL35	I	0.9	50		
TIXL36	M	1	50		

†Output per element.

VISIBLE LIGHT SOURCES

TI Type	Fig.	Light Color	Output Min. @ I_F (μcd)	Output Min. @ I_F (mA)	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIL209A	N	Red	500	20		
TIL211	N	Green	800	25		
TIL220	O	Red	800	20		
TIL221	O	Red	1000	20		
TIL222	O	Green	500	20		
TIL223	O	Green	500†	20		
TIL261	L	Red	500†	20		
TIL262	L	Red	500†	20		
TIL263	L	Red	500†	20		
TIL264	L	Red	500†	20		
TIL265	L	Red	500†	20		
TIL266	L	Red	500†	20	Prices on Request	
TIL267	L	Red	500†	20		
TIL268	L	Red	500†	20		
TIL269	L	Red	500†	20		
TIL270	L	Red	500†	20		
TIL271	L	Green	800	25		
TIL272	L	Green	800†	25		
TIL273	L	Green	800†	25		
TIL274	L	Green	800†	25		
TIL275	L	Green	800†	25		
TIL276	L	Green	800†	25		
TIL277	L	Green	800†	25		
TIL278	L	Green	800†	25		
TIL279	L	Green	800†	25		
TIL280	L	Red	800†	25		

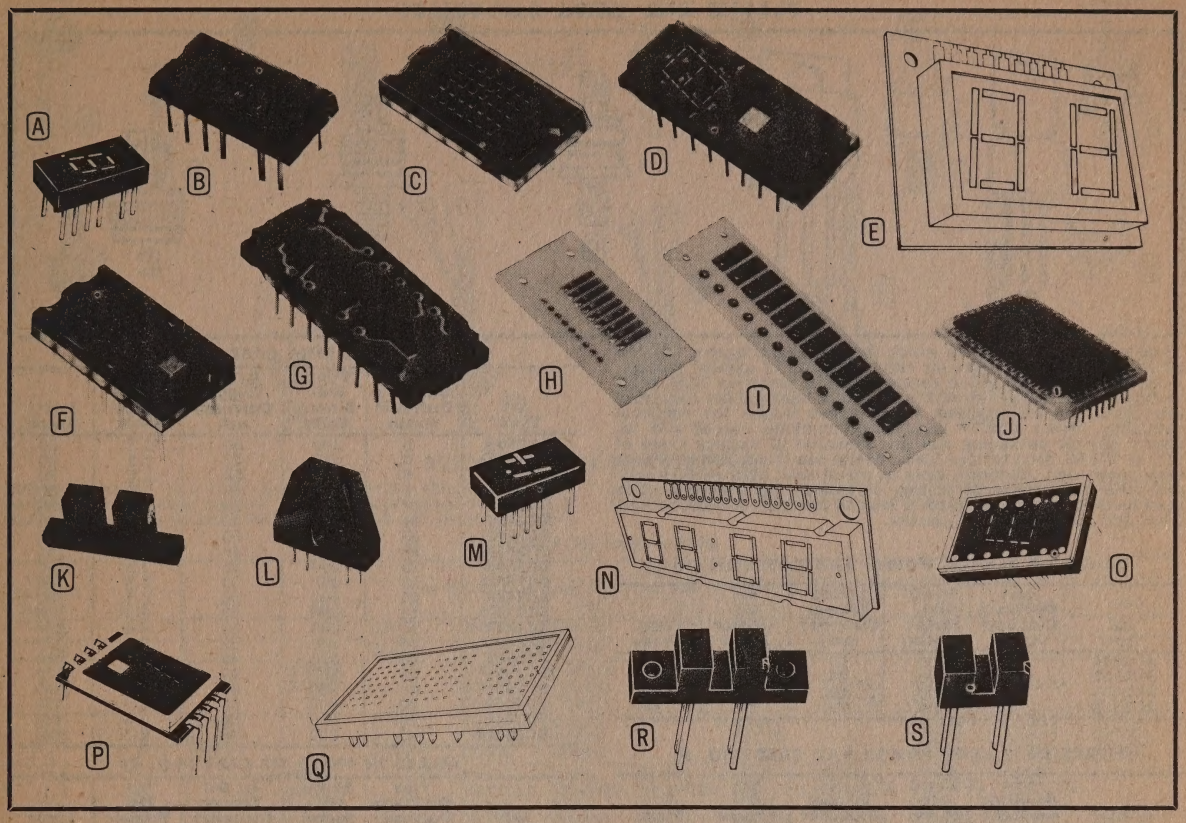
†Output per element.

OPTICALLY COUPLED ISOLATORS

Data sheets available on request.

TI Type	Fig.	Isolation Voltage ±kV	$I_{C(ON)}$ Min. @ I_F mA	$I_{C(ON)}$ Min. @ I_F mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
3N219	Q	1	0.5	15		
3N220	Q	1	1.6	15		
4N22	P	1	2.5	10		
4N23	P	1	6	10		
4N24	P	1	10	10		
TIL102	P	1	2.5	10		
TIL103	P	1	10	10		
TIL107	Q	1	0.5	15		
TIL108	Q	1	1.6	15		
TIL109	S	5	0.25	35	Prices on Request	
TIL111	R	1.5	2	10		
TIL112	R	1.5	0.2	10		
TIL113	R	1.5	30	10		
TIL114	R	2.5	2	10		
TIL115	R	2.5	0.2	10		
TIL116	R	2.5	2	10		
TIL117	R	2.5	5	10		
TIL118	R	1.5	1	10		
TIL119	R	1.5	30	10		
TIL120	T	1	2.5	10		
TIL121	T	1	5	10		

SEE FOLLOWING TI PAGE FOR ADDITIONAL OPTOELECTRONIC DEVICES



VISIBLE DISPLAYS

TI Type	Fig.	Type of Char.(s)	Char. Hgt. (Ins.)	Display Color	No. of Leads†	Net Each, Lots of 1-9	Net Each, Lots of 10-99
TIL302	B	7-seg.	.27	Red	14	Prices on Request	
TIL303	B						
TIL304	B	Pol. & overflow	.27	Red	14		
TIL305	C	5 x 7 a.n.	.30	Red	14		
TIL306	D	7-seg.	.27	Red	16		
TIL307	D						
TIL308	D						
TIL309	D						
TIL311	F	Hexadec.	.27	Red	14		
TIL312	A	7-seg.	.30	Red	14		
TIL313	A						
TIL314	A	7-seg.	.30	Green	14		
TIL315	A						
TIL316	A	7-seg.	.30	Amber	14		
TIL317	A						
TIL321	.....	7-seg.	.50	Red	10		
TIL322	.....						
TIL323	.....	7-seg.	.50	Green	10		
TIL324	.....						
TIL325	.....	7-seg.	.50	Amber	10		
TIL326	.....						
TIL327	M	Pol. & overflow	.30	Red	14		
TIL328	M		.30	Green	14		
TIL329	M		.30	Amber	14		
TIL330	.....		.50	Red	10		
TIL331	.....		.50	Green	10		
TIL332	.....		.50	Amber	10		
TIL360	G	7-seg.	.10	Red	16		
TIL361	E		.50	Red	.....		
TIL362	E		.50	Green	.....		
TIL363	E		.50	Amber	.....		
TIL364	N	7-seg.	.50	Red	.....		
TIL365				Green	.....		
TIL366				Amber	.....		
TIL367				Red	.....		
TIL368				Green	.....		
TIL369				Amber	.....		
TIL370	N	7-seg.	.50	Red	.....		
TIL371				Green	.....		
TIL372				Amber	.....		
TIL373				Red	.....		
TIL374				Green	.....		
TIL375				Amber	.....		

VISIBLE DISPLAYS (CONT.)

TI Type	Fig.	Type of Char.(s)	Char Hgt. (Ins.)	Display Color	No. of Leads†	Net Each Lots of 1-9	Net Each Lots of 10-99
TIL501	O	7-seg.	.27	Red	14#	Prices on Request	
TIL502							
TIL503							
TIL504	O	5 x 7 a.n.	.30	Red	14#		
TIL505	O	Hexadec.	.30	Red	14#		
TIL506	P	7-seg.	.30	Red	8#		
TIL507	O	5 x 7 a.n.	.30	Red	16#		
TIL508	O		.24		16#		
TIL560	Q		.5		28#		

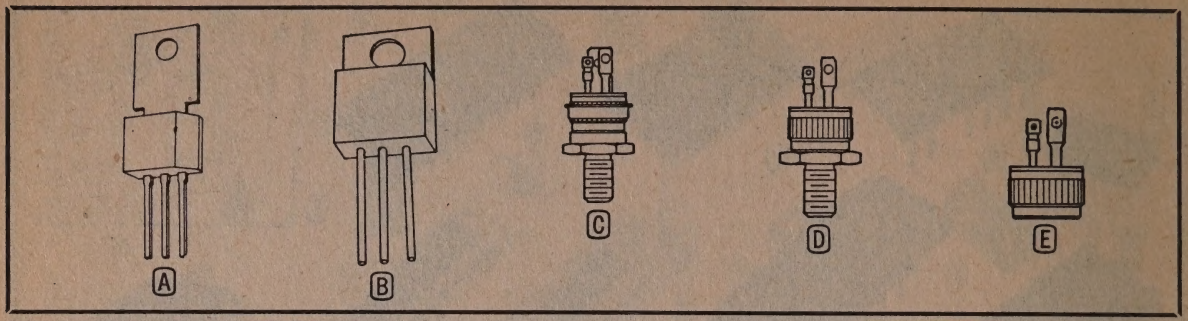
†Plastic DIP. #Hermetically sealed.

SENSOR/EMITTER ARRAYS

TI Type	Fig.	Description	Net Each, Lots of 1-9	Net Each, Lots of 10-99
TIL131	H	Nine-element LED array	Prices on Request	
TIL132	H	Nine-element photo-transistor array		
TIL133	H	Nine-channel LED/ phototransistor array		
TIL134	I	Twelve-element LED array		
TIL135	I	Twelve-element photo-transistor array		
TIL136	I	Twelve-channel LED/ phototransistor array		
TIL138	K	One-channel trans-missive assembly		
TIL139	L	One-channel reflective assembly		
TIL141	....	Twelve-channel optical reader		
TIL142	....	Twelve-channel optical reader w/plug-in conn.		
TIXL143	R	One-channel trans-missive assembly		
TIXL144	R			
TIXL145	R			
TIXL146	R			
TIXL147	S			
TIXL147	S			
TIXL148	S			

Triacs and Triac Triggers

PLASTIC AND METAL CAN TRIACS



Triac is a silicon AC switch which may be gate triggered from an OFF-state to an ON-state for either polarity of applied voltage. Triac is also an AC phase controller, that performs in a single device the function of two SCR's connected back to back to control heat, light and motor speed. Plastic triacs feature low cost and reliability. **Power Glas**™ passivated junctions, rugged and industry proven packaging and are available in various types of (TO-5, TO-66, etc.) formed leads. Metal can triacs feature **Power Glas** passivated junctions, glass to metal seal, high performance and reliability, transient voltage immunity and comprehensive specifications. Triacs are used in control circuitry in various electrical and mechanical equipments.

TRIACS IN PLASTIC POWER TAB CASE (FIG. A)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC136A	3	100	10	2	30
SC136B	3	200	25	2	30
SC136C	3	300	10	20	30
SC136D	3	400	25	2	30

TRIACS IN PLASTIC POWER PAC CASE (FIG. B)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC141B	6	200	50	2.5	80
SC141D	6	400	50	2.5	80
SC141E	6	500	50	2.5	80
SC141M	6	600	50	2.5	80
SC146B	10	200	50	2.5	100
SC146D	10	400	50	2.5	100
SC146E	10	500	50	2.5	100
SC146M	10	600	50	2.5	100
SC151B	15	200	50	2.5	120
SC151D	15	400	50	2.5	120
SC151E	15	500	50	2.5	120
SC151M	15	600	50	2.5	120

TRIACS IN ISOLATED POWER PAC CASE (FIG. B)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC142B	8	200	50	2.5	80
SC142D	8	400	50	2.5	80
SC142E	8	500	50	2.5	80
SC142M	8	600	50	2 5	80

TRIACS IN ISOLATED STUD CASE (FIG. C)

GE Type#	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC240B2, 3	6	200	50	2.5	80
SC240D2, 3	6	400	50	2.5	80
SC240E2, 3	6	500	50	2.5	80
SC240M2, 3	6	600	50	2.5	80
SC245B2, 3	10	200	50	2.5	100
SC245D2, 3	10	400	50	2.5	100
SC245E2, 3	10	500	50	2.5	100
SC245M2, 3	10	600	50	2.5	100
SC250B2, 3	15	200	50	2.5	100
SC250D2, 3	15	400	50	2.5	100
SC250E2, 3	15	500	50	2.5	100
SC250M2, 3	15	600	50	2.5	100
SC260B2, 3	25	200	50	2.5	250
SC260D2, 3	25	400	50	2.5	250
SC260E2, 3	25	500	50	2.5	250
SC260M2, 3	25	600	50	2.5	250

#Types shown are standard types; for zero voltage switch types, add suffix -2 to GE No.; for selected four quadrant types, add suffix -3; for 400 Hz types, add suffix -4. †At 12 volts, 25° C. ‡Surge current at 60 Hz, one cycle non-negative. §MT2+G+, MT2−G−, MT2+G−.

TRIACS IN STUD CASE (FIG. D)

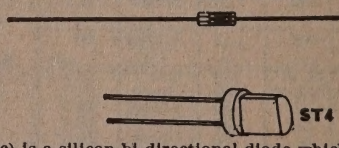
GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC240B	6	200	50	2.5	80
SC240D	6	400	50	2.5	80
SC240E	6	500	50	2.5	80
SC240M	6	600	50	2.5	80
SC245B	10	200	50	2.5	100
SC245D	10	400	50	2.5	100
SC245E	10	500	50	2.5	100
SC245M	10	600	50	2.5	100
SC250B	15	200	50	2.5	100
SC250D	15	400	50	2.5	100
SC250E	15	500	50	2.5	100
SC250M	15	600	50	2.5	100
SC260B	25	200	50	2.5	250
SC260D	25	400	50	2.5	250
SC260E	25	500	50	2.5	250
SC260M	25	600	50	2.5	250
SC265B	40	200	80	2.5	300
SC2650	40	400	80	2.5	300
SC265E	40	500	80	2.5	300
SC265M	40	600	80	2.5	300

TRIACS IN PRESS FIT CASE (FIG. E)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC241B	6	200	50	2.5	80
SC241D	6	400	50	2.5	80
SC241E	6	500	50	2.5	80
SC241M	6	600	50	2.5	80
SC246B	10	200	50	2.5	100
SC246D	10	400	50	2.5	100
SC246E	10	500	50	2.5	100
SC246M	10	600	50	2.5	100
SC251B	15	200	50	2.5	100
SC251D	15	400	50	2.5	100
SC251E	15	500	50	2.5	100
SC251M	15	600	50	2.5	100
SC261B	25	200	50	2.5	250
SC261D	25	400	50	2.5	250
SC261E	25	500	50	2.5	250
SC261M	25	600	50	2.5	250
SC266B	40	200	80	2.5	300
SC266D	40	400	80	2.5	300
SC266E	40	500	80	2.5	300
SC266M	40	600	80	2.5	300

*Types shown are standard types; for zero voltage switch types, add suffix -12 to GE Number; for selected four quadrant types, add suffix -13 to GE Number; for 400 Hz types, add suffix -14 to GE Number. †At 12 volts, 25° C. ‡Surge current at 60 Hz, one cycle non-negative. §MT2+G+, MT2−G−, MT2+G−.

TRIAC TRIGGERS



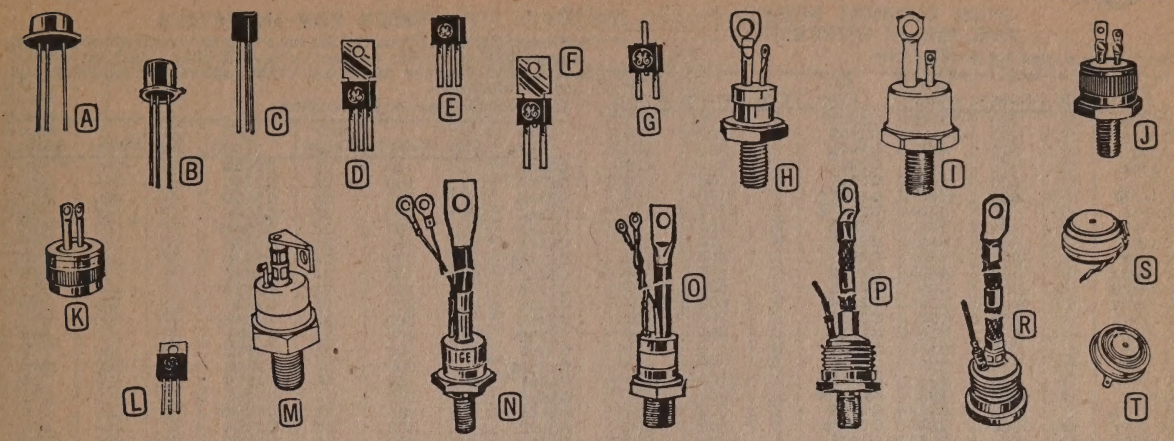
ST2 (diac) is a silicon bi-directional diode which may be used for triggering triacs or SCR's. It has three layer structure with negative resistance switching characteristics in both directions. ST4 is an asymmetrical AC trigger integrated circuit for use in triac phase control applications. This device reduces the snap-on effects that are present in conventional trigger circuits by eliminating control circuit hysteresis. This performance is possible with a single RC time constant where as a symmetrical circuit of comparable performance would require at least three more passive components.

GE Type	V_{S2} Switching Volts Min.	V_{S2} Switching Volts Max.	V_{S1} Switching Volts Min.	V_{S1} Switching Volts Max.	Max. Switching Current μA	Min. Pulse Output Volts
ST2	28*	36*	28*	36*	200	3.0
ST4	7	9	14	18	80	3.5

*For ST2, $V_{S2} = V_{S1} \pm 10\%$.

SEE LAST PAGES OF LISTING FOR OEM SEMICONDUCTOR PRICING

Silicon Controlled Rectifiers



SCR'S FOR PHASE CONTROL

"Phase Control" is a term used to describe silicon controlled rectifiers having slow turn-off time. Primary application for a device with relatively slow turn-off time are AC phase control— hence the name "phase control". This type of device is also used for zero voltage switching and selected pulse applications.

15 VOLTS TO 500 VOLTS

rms Current Amps	Fig.	GE Type For Repetitive Peak Forward and Blocking Voltage of (Volts) 15	25	30	50	100	150	200	250	300	400	500
0.5	B			2N877	2N878*	2N879	2N880	2N881				
0.8	C			C103Y	C103YY*	C103A		C103B				
1.6	A		2N2344		2N2345	2N2346	2N2347	2N2348				
1.6	A		2N2322		2N2323	2N2324	2N2325	2N2326	2N2327	2N2328	2N2329	
1.6	A				2N1595	2N1596		2N1597	2N1598	2N1599		
4.0	D,E,F,G	C106Q		C106Y	C106F	C106A		C106B		C106C	C106D	C106E
4.0	D,E,F,G	C107Q		C107Y	C107F	C107A		C107B		C107C	C107D	C107E
5	D,E,F,G,	C108Q		C108Y	C108F	C108A		C108B		C108C	C108D	C108E
7.4	H		C10U		C10F	C10A	C10G	C10B	C10H	C10C	C10D	
7.4	H		2N1770A		2N1771A	2N1772A	2N1773A	2N1774A	2N1775A	2N1776A	2N1777A	
7.4	H		C11U		C11F	C11A	C11G	C11B	C11H	C11C	C11D	
7.4	H		2N1770		2N1771	2N1772	2N1773	2N1774	2N1775	2N1776	2N1777	2N1778
7.4	J		C220U		C220F	C220A		C220B		C220C	C220D	C220E
7.4	K		C222U		C222F	C222A		C222B		C222C	C222D	C222E
8.0	H		C15		C15F	C15A	C15G	C15B	C15H	C15C	C15D	C15E
8.0	L				C122F			C122B			C122D	C122E
16.0	H		2N1842		2N1843	2N1844	2N1845	2N1846	2N1847	2N1848	2N1849	2N1850
16.0	H		C36U		C36F	C36A	C36G	C36B	C36H	C36C	C36D	C36E
25.0	J		C230U		C230F	C230A		C230B	C230H	C230C	C230D	C230E
25.0	J		C231U		C231F	C231A		C231B	C231H	C231C	C231D	C231E
25.0	K		C232U		C232F	C232A		C232B	C232H	C232C	C232D	C232E
25.0	K		C233U		C233F	C233A		C233B	C233H	C233C	C233D	C233E
25.0	H		C37U		C37F	C37A		C37B		C37C	C37D	C37E
25.0	H		2N681		2N682	2N683	2N684	2N685	2N686	2N687	2N688	2N689
35.0	H		C35U		C35F	C35A	C35G	C35B	C35H	C35C	C35D	C35E
35.0	H		C38U		C38F	C38A	C38G	C38B	C38H	C38C	C38D	C38E
35.0	H											C137E
35.0	J				C228F	C228A		C228B		C228C	C228D	C228E
35.0	K				C229F	C229A		C229B		C229C	C229D	C229E
55.0	M		C45U		C45F	C45A	C45G	C45B	C45H	C45C	C45D	C45E
55.0	N		C46U		C46F	C46A	C46G	C46B	C46H	C46C	C46D	C46E
63.0	I		C147U		C147F	C147A	C147G	C147B	C147H	C147C	C147D	C147E
110.0	N		2N1909		2N1910	2N1911	2N1912	2N1913	2N1914	2N1915	2N1916	C50E
110.0	M		C52U		2N1792	2N1793	2N1794	2N1795	2N1796	2N1797	2N1798	C52E
110.0	N											C150E
110.0	M											C152E
110.0	N		2N2023		2N2024	2N2025	2N2026	2N2027	2N2028	2N2029	2N2030	C60E
110.0	M		C62U		C62F	C62A	C62G	C62B	C62H	C62C	C62D	C62E

*60 volts.

600 VOLTS TO 1300 VOLTS

rms Current Amps	Fig.	GE Type For Repetitive Peak Forward and Blocking Voltage of (Volts) 600	700	800	900	1000	1100	1200	1300
25.0	H	C37M*	C37S	C37N					
25.0	H	2N690	2N691	2N692					
25.0	J	C230M							
35.0	H	C35M	C35S	C35N					
35.0	H	C137M	C137S	C137N	C137T	C137P	C137PA	C137PB	
35.0	H	2N5204		2N5205		2N5206		2N5207	
35.0	J	C228M							
35.0	K	C229M							
55.0	M	C45M	C45S	C45N					
55.0	N	C46M	C46S	C46N					
63.0	I	C147M	C147S	C147N	C147T	C147P	C147PA	C147PB	
110.0	N	C50M	C50S	C50N					
110.0	M	C52M	C52S	C52N					
110.0	N	C150M	C150S	C150N	C150T	C150P	C150PA	C150PB	C150PC
110.0	M	C152M	C152S	C152N	C152T	C152P	C152PA	C152PB	C152PC
110.0	N	C60M	C60S	C60N					
110.0	M	C62M	C62S	C62N					

*Also available at 7.4 amps (600 volts); order by GE Type 2N2619 (Fig. H).

SEE LAST PAGES OF LISTING FOR OEM SEMICONDUCTOR PRICING

Silicon Controlled Rectifiers

HIGH CURRENT SCR's FOR PHASE CONTROL

See previous page for illustrations.

GE Type	Fig.	Volts*	rms Amps	GE Type	Fig.	Volts*	rms Amps
C350A	T	100	180	C290M	P	600	470
C350B	T	200	180	C290S	P	700	470
C350C	T	300	180	C290N	P	800	470
C350D	T	400	180	C290T	P	900	470
C350E	T	500	180	C290P	P	1000	470
C350M	T	600	180	C290PA	P	1100	470
C350S	T	700	180	C290PB	P	1200	470
C350N	T	800	180	C291A	R	100	470
C350T	T	900	180	C291B	R	200	470
C350P	T	1000	180	C291C	R	300	470
C350PA	T	1100	180	C291D	R	400	470
C350PB	T	1200	180	C291E	R	500	470
C350PC	T	1300	180	C291M	R	600	470
C180E	O	500	235	C291S	R	700	470
C180M	O	600	235	C291N	R	800	470
C180S	O	700	235	C291T	R	900	470
C180N	O	800	235	C291P	R	1000	470
C180T	O	900	235	C291PA	R	1100	470
C180P	O	1000	235	C291PB	R	1200	470
C180PA	O	1100	235	C390E	T	500	850
C180PB	O	1200	235	C390M	T	600	850
C180PC	O	1300	235	C390S	T	700	850
C280S	P	700	235	C390N	T	800	850
C280N	P	800	235	C390T	T	900	850
C280T	P	900	235	C390P	T	1000	850
C280P	P	1000	235	C390PA	T	1100	850
C280PA	P	1100	235	C390PB	T	1200	850
C280PB	P	1200	235	C391PC	T	1300	850
C280PC	P	1300	235	C391PD	T	1400	850
C280PD	P	1400	235	C391PE	T	1500	850
C280PE	P	1500	235	C391PM	T	1600	850
C280PM	P	1600	235	C391PS	T	1700	850
C280PS	P	1700	235	C391PN	T	1800	850
C380A	T	100	380	C501M	S	600	850
C380B	T	200	380	C501S	S	700	850
C380C	T	300	380	C501N	S	800	850
C380D	T	400	380	C501T	S	900	850
C380E	T	500	380	C501P	S	1000	850
C380M	T	600	380	C501PA	S	1100	850
C380S	T	700	380	C501PB	S	1200	850
C380N	T	800	380	C501PC	S	1300	850
C380T	T	900	380	C501PD	S	1400	850
C380P	T	1000	380	C501PE	S	1500	850
C380PA	T	1100	380	C501PM	S	1600	850
C380PB	T	1200	380	C501PS	S	1700	850
C380PC	T	1300	380	C441PA	T	1100	1100
C282S	P	700	400	C441PB	T	1200	1100
C282N	P	800	400	C441PC	T	1300	1100
C282T	P	900	400	C441PD	T	1400	1100
C282P	P	1000	400	C441PE	T	1500	1100
C282PA	P	1100	400	C441PM	T	1600	1100
C282PB	P	1200	400	C441PS	T	1700	1100
C282PC	P	1300	400	C441PN	T	1800	1100
C282PD	P	1400	400	C530A	S	100	1100
C282PE	P	1500	400	C530B	S	200	1100
C282PM	P	1600	400	C530C	S	300	1100
C282PS	P	1700	400	C530D	S	400	1100
C283S	R	700	400	C530E	S	500	1100
C283N	R	800	400	C530M	S	600	1100
C283T	R	900	400	C520A	S	100	1250
C283P	R	1000	400	C520B	S	200	1250
C283PA	R	1100	400	C520C	S	300	1250
C283PB	R	1200	400	C520D	S	400	1250
C283PC	R	1300	400	C440E	T	500	1400
C283PD	R	1400	400	C440M	T	600	1400
C283PE	R	1500	400	C440S	T	700	1400
C283PM	R	1600	400	C440N	T	800	1400
C283PS	R	1700	400	C440T	T	900	1400
C286S	P	700	400	C440P	T	1000	1400
C286N	P	800	400	C440PA	T	1100	1400
C286T	P	900	400	C440PB	T	1200	1400
C286P	P	1000	400	C600E	T	500	1400
C286PA	P	1100	400	C600M	T	600	1400
C286PB	P	1200	400	C600S	T	700	1400
C286PC	P	1300	400	C600N	T	800	1400
C286PD	P	1400	400	C600T	T	900	1400
C286PE	P	1500	400	C600P	T	1000	1400
C286PM	P	1600	400	C600PA	T	1100	1400
C287S	R	700	400	C600PB	T	1200	1400
C287N	R	800	400	C601PA	T	1100	1100
C287T	R	900	400	C601PB	T	1200	1100
C287P	R	1000	400	C601PC	T	1300	1100
C287PA	R	1000	400	C601PD	T	1400	1100
C287PB	R	1200	400	C601PE	T	1500	1100
C287PC	R	1300	400	C601PM	T	1600	1100
C287PD	R	1400	400	C601PS	T	1700	1100
C287PE	R	1500	400	C701PA	T	1100	1950
C287PM	R	1600	400	C701PB	T	1200	1950
C290A	P	100	470	C701PD	T	1400	1950
C290B	P	200	470	C701PE	T	1500	1950
C290C	P	300	470	C701PM	T	1600	1950
C290D	P	400	470	C701PS	T	1700	1950
C290E	P	500	470				

GE Series C602—(940 amps) available from 1600 to 2600 volts; write for more information.

*Repetitive peak forward and reverse voltage.

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SCR's FOR INVERTERS

These SCR's are optimized for turn-off time (commutation speed), capability and other dynamic characteristics. Ideal for AC/DC inverters, choppers and other pulse applications requiring high speed capability.

See previous page for illustrations.

GE Type	Fig.	Volts‡	rms Amps	GE Type	Fig.	Volts‡	rms Amps
C234F	J	50	25	C164B	N	200	110
C234A	J	100	25	C164C	N	300	110
C234B	J	200	25	C164D	N	400	110
C234C	J	300	25	C164E	N	500	110
C234D	J	400	25	C164M	N	600	110
C234E	J	500	25	C165A	N	100	110
C234M	J	600	25	C165B	N	200	110
C235F	K	50	25	C165C	N	300	110
C235A	K	100	25	C165D	N	400	110
C235B	K	200	25	C165E	N	500	110
C235C	K	300	25	C165M	N	600	110
C235D	K	400	25	C354A	T	100	215
C235E	K	500	25	C354B	T	200	215
C235M	K	600	25	C354C	T	300	215
C140F*	H	50	35	C354D	T	400	215
C140A*	H	100	35	C354E	T	500	215
C140B*	H	200	35	C354M	T	600	215
C140C*	H	300	35	C355A	T	100	215
C140D*	H	400	35	C355B	T	200	215
C141F†	H	50	35	C355C	T	300	215
C141A†	H	100	35	C355D	T	400	215
C141B†	H	200	35	C355E	T	500	215
C141C†	H	300	35	C355M	T	600	215
C141D†	H	400	35	C358E	T	500	225
C138E	H	500	35	C358M	T	600	225
C138M	H	600	35	C358S	T	700	225
C138S	H	700	35	C358N	T	800	225
C138N	H	800	35	C358T	T	900	225
C139E	H	500	35	C358P	T	1000	225
C139M	H	600	35	C358PA	T	1100	225
C139S	H	700	35	C358PB	T	1200	225
C139N	H	800	35	C186E	O	500	235
C144E	H	500	35	C186M	O	600	235
C144M	H	600	35	C186S	O	700	235
C144S	H	700	35	C186N	O	800	235
C144N	H	800	35	C186T	O	900	235
C149A	I	100	63	C186P	O	1000	235
C149B	I	200	63	C186PA	O	1100	235
C149C	I	300	63	C186PB	O	1200	235
C149D	I	400	63	C185A	O	100	300
C149E	I	500	63	C185B	O	200	300
C149M	I	600	63	C185C	O	300	300
C151E	N	500	110	C185D	O	400	300
C151M	N	600	110	C185E	O	500	300
C151S	N	700	110	C185M	O	600	300
C151N	N	800	110	C364A	S	100	275
C151T	N	900	110	C364B	S	200	275
C151P	N	1000	110	C364C	S	300	275
C153E	M	500	110	C364D	S	400	275
C153M	M	600	110	C364E	S	500	275
C153S	M	700	110	C364M	S	600	275
C153N	M	800	110	C365A	S	100	275
C153T	M	900	110	C365B	S	200	275
C153P	M	1000	110	C365C	S	300	275
C154A	N	100	110	C365D	S	400	275
C154B	N	200	110	C365E	S	500	275
C154C	N	300	110	C365M	S	600	275
C154D	N	400	110	C385A	S	100	400
C154E	N	500	110	C385B	S	200	400
C154M	N	600	110	C385C	S	300	400
C156A	M	100	110	C385D	S	400	400
C156B	M	200	110	C385E	S	500	400
C156C	M	300	110	C385M	S	600	400
C156D	M	400	110	C386S	T	700	400
C156E	M	500	110	C386N	T	800	400
C156M	M	600	110	C386T	T	900	400
C155A	N	100	110	C386P	T	1000	400
C155B	N	200	110	C386PA	T	1100	400
C155C	N	300	110	C386PB	T	1200	400
C155D	N	400	110	C387E	T	500	550
C155E	N	500	110	C387M	T	600	550
C155M	N	600	110	C387S	T	700	550
C157A	M	100	110	C387N	T	800	550
C157B	M	200	110	C387T	T	900	550
C157C	M	300	110	C387P	T	1000	550
C157D	M	400	110	C387PA	T	1100	550
C157E	M	500	110	C387PB	T	1200	550
C157M	M	600	110	C388E	T	500	550
C158E	N	500	110	C388M	T	600	550
C158M	N	600	110	C388S	T	700	550
C158S	N	700	110	C388N	T	800	550
C158N	N	800	110	C388T	T	900	550
C158T	N	900	110	C388P	T	1000	550
C158P	N	1000	110	C388PA	T	1100	550
C158PA	N	1100	110	C388PB	T	1200	550
C158PB	N	1200	110	C397E	T	500	700
C159E	M	500	110	C397M	T	600	700
C159M	M	600	110	C397S	T	700	700
C159S	M	700	110	C397N	T	800	700
C159N	M	800	110	C397T	T	900	700
C159T	M	900	110	C397P	T	1000	700
C159P	M	1000	110	C397PA	T	1100	700
C159PA	M	1100	110	C397PB	T	1200	700
C159PB	M	1200	110	C398E	T	500	700
C164A	N	100	110	C398M	T	600	700

*Also available as 2N3649, 50, 51, 52 and 53. †Also available as 2N3654, 55, 56, 57 and 58. ‡Repetitive peak forward and reverse voltage.

LISTING CONTINUED ON NEXT PAGE

SCR's and Silicon Rectifiers

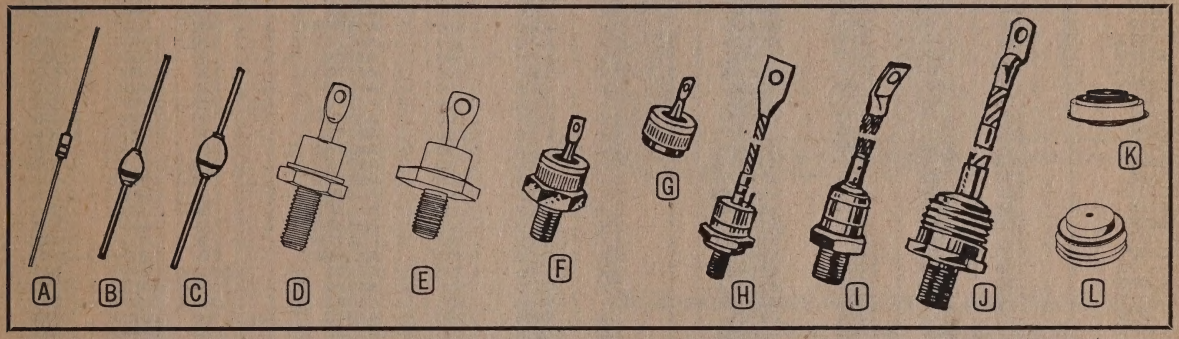
SCR's FOR INVERTERS (CONTINUED)

GE Type	Fig.	Volts‡	rms Amps
C398S	T	700	700
C398N	T	800	700
C398T	T	900	700
C398P	T	1000	700
C398PA	T	1100	700
C398PB	T	1200	700
C392A	T	100	500
C392B	T	200	500
C392C	T	300	500
C392D	T	400	500
C392E	T	500	500
C392M	T	600	500
C393A	T	100	500
C393B	T	200	500
C393C	T	300	500
C393D	T	400	500
C393E	T	500	500
C393M	T	600	500
C394A	T	100	700
C394B	T	200	700
C394C	T	300	700
C394D	T	400	700
C394E	T	500	700
C394M	T	600	700

GE Type	Fig.	Volts‡	rms Amps
C395A	T	100	700
C395B	T	200	700
C395C	T	300	700
C395D	T	400	700
C395E	T	500	700
C395M	T	600	700
C509M	T	600	775
C509S	T	700	775
C509N	T	800	775
C509T	T	900	775
C509P	T	1000	775
C509PA	T	1100	775
C509PB	T	1200	775
C609M	T	600	1000
C609S	T	700	1000
C609N	T	800	1000
C609T	T	900	1000
C609P	T	1000	1000
C609PA	T	1100	1000
C609PB	T	1200	1000
C447E	T	500	1000
C447M	T	600	1000
C447S	T	700	1000
C447N	T	800	1000

GE Type	Fig.	Volts‡	rms Amps
C447T	T	900	1000
C447P	T	1000	1000
C447PA	T	1100	1000
C447PB	T	1200	1000
C448E	T	500	1000
C448M	T	600	1000
C448S	T	700	1000
C448N	T	800	1000
C448T	T	900	1000
C448P	T	1000	1000
C448PA	T	1100	1000
C448PB	T	1200	1000
C444A	T	100	1200
C444B	T	200	1200
C444C	T	300	1200
C444D	T	400	1200
C444E	T	500	1200
C444M	T	600	1200
C445A	T	100	1200
C445B	T	200	1200
C445C	T	300	1200
C445D	T	400	1200
C445E	T	500	1200
C445M	T	600	1200

SILICON RECTIFIERS—0.25 TO 1500 AMPS, UP TO 3000 VOLTS



GE Type	Fig.	I_F* Amps	I_{Fm}† Amps	Volts‡
DT230F	A	.25	5	50
DT230A	A	.25	5	100
DT230B	A	.25	5	200
A14F	B	1	50	50
A14A	B	1	50	100
1N5059	B	1	50	200
A14C	B	1	50	300
1N5060	B	1	50	400
A14E	B	1	50	500
1N5061	B	1	50	600
1N5062	B	1	50	800
A14P	B	1	50	1000
A14D	B	1	50	1400
1N4245	B	1	25	200
1N4246	B	1	25	400
1N4247	B	1	25	600
1N4248	B	1	25	800
1N4249	B	1	25	1000
A14F§	B	1	40	50
A14A§	B	1	40	100
A14B§	B	1	40	200
A14C§	B	1	40	300
A14D§	B	1	40	400
A14E§	B	1	40	500
A14M§	B	1	40	600
A14N§	B	1	40	800
A15F	C	3	125	50
A15A	C	3	125	100
1N5624	C	3	125	200
A15C	C	3	125	300
1N5625	C	3	125	400
1N5626	C	3	125	600
1N5627	C	3	125	800
A115F§	C	3	110	50
A115A§	C	3	110	100
A115B§	C	3	110	200
A115C§	C	3	110	300
A115D§	C	3	110	400
A115E§	C	3	110	500
A115M§	C	3	110	600
1N1612	D	5	150	50
1N1613	D	5	150	100
1N1614	D	5	150	200
1N1615	D	5	150	400
1N1616	D	5	150	600
1N1341A	D	6	150	50

GE Type	Fig.	I_F* Amps	I_{Fm}† Amps	Volts‡
1N1342A	D	6	150	100
1N1344A	D	6	150	200
1N1345A	D	6	150	300
1N1346A	D	6	150	400
1N1347A	D	6	150	500
1N1348A	D	6	150	600
1N3988	D	6	150	800
1N3990	D	6	150	1000
1N3879§	D	6	75	50
1N3880§	D	6	75	100
1N3881§	D	6	75	200
1N3882§	D	6	75	300
1N3883§	D	6	75	400
1N1199A	D	12	240	50
1N1200A	D	12	240	100
1N1202A	D	12	240	200
1N1203A	D	12	240	300
1N1204A	D	12	240	400
1N1205A	D	12	240	500
1N1206A	D	12	240	600
1N3671A	D	12	240	800
1N3673A	D	12	240	1000
1N5331	D	12	240	1200
1N3889§	D	12	150	50
1N3890§	D	12	150	100
1N3891§	D	12	150	200
1N3892§	D	12	150	300
1N3893§	D	12	150	400
A129M§	D	12	150	600
A129N§	D	12	150	800
A129P§	D	12	150	1000
A28F§	D	12	240	50
A28A§	D	12	240	100
A28B§	D	12	240	200
A28C§	D	12	240	300
A28D§	D	12	240	400
1N248B	E	20	350	50
1N249B	E	20	350	100
1N250B	E	20	350	200
1N1195A	E	20	350	300
1N1196A	E	20	350	400
1N1197A	E	20	350	500
1N1198A	E	20	350	600
1N3899§	E	20	225	50
1N3900§	E	20	225	100
1N3901§	E	20	225	200

GE Type	Fig.	I_F* Amps	I_{Fm}† Amps	Volts‡
1N3902§	E	20	225	300
1N3903§	E	20	225	400
1N3208	F	20	300	50
1N3209	F	20	300	100
1N3210	F	20	300	200
1N3211	F	20	300	300
1N3212	F	20	300	400
1N3213	F	20	300	500
1N3214	F	20	300	600
A44F	G	20	300	50
A44A	G	20	300	100
A44B	G	20	300	200
A44C	G	20	300	300
A44D	G	20	300	400
A44E	G	20	300	500
A44M	G	20	300	600
A139E§	G	25	400	500
A139M§	G	25	400	600
A139N§	G	25	400	800
A139P§	G	25	400	1000
1N2154	E	25	400	50
1N2155	E	25	400	100
1N2156	E	25	400	200
1N2157	E	25	400	300
1N2158	E	25	400	400
1N2159	E	25	400	500
1N2160	E	25	400	600
1N3909§	E	30	300	50
1N3910§	E	30	300	100
1N3911§	E	30	300	200
1N3912§	E	30	300	300
1N3913§	E	30	300	400
1N1183	E	35	500	50
1N1184	E	35	500	100
1N1186	E	35	500	200
1N1187	E	35	500	300
1N1188	E	35	500	400
1N1189	E	35	500	500
1N1190	E	35	500	600
1N3766	E	35	500	800
1N3768	E	35	500	1000
1N5332	E	35	500	1200

LISTING CONTINUED ON NEXT PAGE

*Avg. forward current. †Surge current. ‡Maximum repetitive reverse voltage. §Fast recovery types. #Series A295 available up to 1800, write for information; also available is series A510 (I. = 740A, I.— = 8400A, Fig. L) from 500–3000 volts, write for complete information. *Series A540 available up to 1800 volts, write for information.

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SILICON RECTIFIERS (CONTINUED)

GE Type	Fig.	I_F* Amps	I_{Fm}† Amps	Volts‡
A70B 1N3289	H	100	1600	200
A70C 1N3290	H	100	1600	300
A70D 1N3291	H	100	1600	400
A70E 1N3292	H	100	1600	500
A70M 1N3293	H	100	1600	600
A70N 1N3294	H	100	1600	800
A70P 1N3295	H	100	1600	1000
A70PB 1N3296	H	100	1600	1200
A177A	H	100	1600	100
A177B	H	100	1600	200
A177C	H	100	1600	300
A177D	H	100	1600	400
A177E	H	100	1600	500
A177M	H	100	1600	600
A177S	H	100	1600	700
A177N	H	100	1600	800
A177T	H	100	1600	900
A177P	H	100	1600	1000
A177PA	H	100	1600	1100
A177PB	H	100	1600	1200
A177PC	H	100	1600	1300
A177PD	H	100	1600	1400
A177PE	H	100	1600	1500
A180A	I	150	2500	100
A180B	I	150	2500	200
A180C	I	150	2500	300
A180D	I	150	2500	400
A180E	I	150	2500	500
A180M	I	150	2500	600
A180S	I	150	2500	700
A180N	I	150	2500	800
A180T	I	150	2500	900
A180P	I	150	2500	1000
A180PA	I	150	2500	1100
A180PB	I	150	2500	1200
A180PC	I	150	2500	1300
A180PD	I	150	2500	1400
A180PE	I	150	2500	1500
A187A§	I	150	2000	100
A187B§	I	150	2000	200
A187C§	I	150	2000	300
A187D§	I	150	2000	400
A187E§	I	150	2000	500
A187M§	I	150	2000	600
A187S§	I	150	2000	700
A187N§	I	150	2000	800
A187T§	I	150	2000	900
A187P§	I	150	2000	1000
A187PA§	I	150	2000	1100
A187PB§	I	150	2000	1200
A187PC§	I	150	2000	1300
A187PD§	I	150	2000	1400
A187PE§	I	150	2000	1500
1N3260	I	160	2000	50
1N3261	I	160	2000	100
1N3263	I	160	2000	200
1N3265	I	160	2000	300
1N3267	I	160	2000	400
1N3268	I	160	2000	500
1N3269	I	160	2000	600
1N3271	I	160	2000	800
1N3273	I	160	2000	1000
A90A 1N3735	I	250	4500	100
A90B 1N3736	I	250	4500	200
A90C 1N3737	I	250	4500	300
A90D 1N3738	I	250	4500	400
A90E 1N3739	I	250	4500	500
A90M 1N3740	I	250	4500	600
A90N 1N3741	I	250	4500	800
A90P 1N3742	I	250	4500	1000
A90PB	I	250	4500	1200
A96A	I	250	3300	100
A96B	I	250	3300	200
A96C	I	250	3300	300
A96D	I	250	3300	400
A96E	I	250	3300	500
A96M	I	250	3300	600
A96N	I	250	3300	800
A96P	I	250	3300	1000
A190A	I	250	4500	100
A190B	I	250	4500	200
A190C	I	250	4500	300
A190D	I	250	4500	400
A190E	I	250	4500	500
A190M	I	250	4500	600
A190S	I	250	4500	700
A190N	I	250	4500	800
A190T	I	250	4500	900
A190P	I	250	4500	1000
A190PA	I	250	4500	1100
A190PB	I	250	4500	1200
A190PC	I	250	4500	1300
A190PD	I	250	4500	1400
A190PE	I	250	4500	1500
A197A§	I	250	3500	100
A197B§	I	250	3500	200
A197C§	I	250	3500	300
A197D§	I	250	3500	400
A197E§	I	250	3500	500
A197M§	I	250	3500	600
A197S§	I	250	3500	700
A197N§	I	250	3500	800
A197T§	I	250	3500	900
A197P§	I	250	3500	1000
A197PA§	I	250	3500	1100
A197PB§	I	250	3500	1200
A197PC§	I	250	3500	1300
A197PD§	I	250	3500	1400
A197PE§	I	250	3500	1500
A291PC	J	250	4500	1300
A291PD	J	250	4500	1400
A291PE	J	250	4500	1500
A291PM	J	250	4500	1600
1N4044	I	275	5000	50
1N4045	I	275	5000	100
1N4047	I	275	5000	200
1N4049	I	275	5000	300
1N4050	I	275	5000	400
1N4051	I	275	5000	500
1N4052	I	275	5000	600
1N4054	I	275	5000	800
1N4056	I	275	5000	1000
A390M	K	400	4500	600
A390N	K	400	4500	800
A390P	K	400	4500	1000
A390PB	K	400	4500	1200
A390PC	K	400	4500	1300
A390PD	K	400	4500	1400
A390PE	K	400	4500	1500
A396A	K	400	3300	100
A396B	K	400	3300	200
A396C	K	400	3300	300
A396D	K	400	3300	400
A396E	K	400	3300	500
A397A§	K	400	3500	100
A397B§	K	400	3500	200
A397C§	K	400	3500	300
A397D§	K	400	3500	400
A397E§	K	400	3500	500
A397M§	K	400	3500	600
A397S§	K	400	3500	700
A397N§	K	400	3500	800
A397T§	K	400	3500	900
A397P§	K	400	3500	1000
A397PA§	K	400	3500	1100
A397PB§	K	400	3500	1200
A397PC§	K	400	3500	1300
A397PD§	K	400	3500	1400
A397PE§	K	400	3500	1500
A295B	J	500	7000	200
A295C	J	500	7000	300
A295D	J	500	7000	400
A295E	J	500	7000	500
A295M	J	500	7000	600
A295N	J	500	7000	800
A295P	J	500	7000	1000
A295PB#	J	500	7000	1200
A437A§	L	750	10000	100
A437B§	L	750	10000	200
A437C§	L	750	10000	300
A437D§	L	750	10000	400
A437E§	L	750	10000	500
A437M§	L	750	10000	600
A437S§	L	750	10000	700
A437N§	L	750	10000	800
A437T§	L	750	10000	900
A437P§	L	750	10000	1000
A437PA§	L	750	10000	1100
A437PB§	L	750	10000	1200
A437PC§	L	750	10000	1300
A437PD§	L	750	10000	1400
A437PE§	L	750	10000	1500
A430A	L	1000	10000	100
A430B	L	1000	10000	200
A430C	L	1000	10000	300
A430D	L	1000	10000	400
A430E	L	1000	10000	500
A430M	L	1000	10000	600
A430S	L	1000	10000	700
A430N	L	1000	10000	800
A430T	L	1000	10000	900
A430P	L	1000	10000	1000
A430PA	L	1000	10000	1100
A430PB	L	1000	10000	1200
A430PC	L	1000	10000	1300
A430PD	L	1000	10000	1400
A430PE	L	1000	10000	1500
A540A	L	1000	10000	100
A540B	L	1000	10000	200
A540C	L	1000	10000	300
A540D	L	1000	10000	400
A540E	L	1000	10000	500
A540M	L	1000	10000	600
A540N	L	1000	10000	800
A540P	L	1000	10000	1000
A540PB	L	1000	10000	1200
A540PD•	L	1000	10000	1400
A570A	L	1500	15000	100
A570B	L	1500	15000	200
A570C	L	1500	15000	300
A570D	L	1500	15000	400
A570E	L	1500	15000	500
A570M	L	1500	15000	600

*Avg. forward current. †Surge current. ‡Maximum repetitive reverse voltage. §Fast recovery types. #Series A295 available up to 1800, write for information; also available is series A510 (I_F = 740A, I_{Fm} = 8400A, Fig. L) from 500–3000 volts, write for complete information. •Series A540 available up to 1800 volts, write for information.

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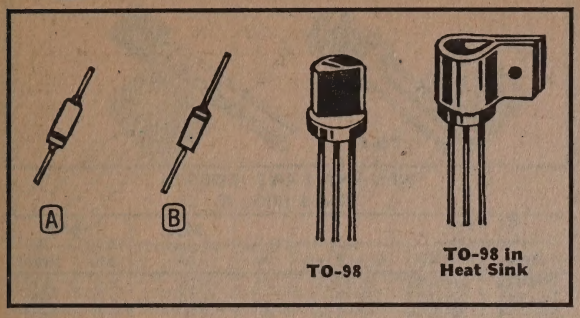
WRITE FOR FULL INFORMATION ON NEW OR UNLISTED ITEMS.

SILICON SIGNAL DIODES AND TRANSISTORS



SILICON SIGNAL DIODES (DO-35 PACKAGE)

GE Type	Min. B_V V	Min. B_V μA	V_F at I_F V	V_F at I_F mA	Max. I_R at 25° C nA	Max. I_R at 25° C V	Max. Cap. at 0 V pF	t_{rr} nsec
1N914	100	100	1.0	10	25	20	4	4
1N914A	100	100	1.0	20	25	20	4	4
1N914B	100	100	1.0	100	25	20	4	4
1N916	100	100	1.0	10	25	20	2	4
1N916A	100	100	1.0	20	25	20	2	4
1N916B	100	100	1.0	30	25	20	2	4
1N4148*	100	100	1.0	10	25	20	4	4
1N4149	100	100	1.0	10	25	20	2	4
1N4150*	50	1	1.0	200	100	50	2.5	6†
1N4151	75	5	1.0	50	50	50	2	2
1N4152	40	5	0.88	20	50	30	2	2
1N4153*	75	5	0.88	20	50	50	2	2
1N4154	35	5	1.0	30	100	25	4	2
1N4305	75	5	0.85	10	100	50	2	2
1N4444	70	5	1.0	100	50	50	2	7‡
1N4446	100	100	1.0	20	25	20	4	4
1N4447	100	100	1.0	20	25	20	2	4
1N4448	100	100	1.0	100	25	20	4	4
1N4449	100	100	1.0	30	25	20	2	4
1N4450	40	5	1.0	200	50	30	4	4‡
1N4451	40	5	1.0	300	50	30	6	10‡
1N4454*	75	5	1.0	10	100	50	2	4‡
1N4606	85	100	1.0	200	100	50	4	4‡
1N4607	85	100	1.0	350	100	50	4	10‡
1N4608	85	100	1.0	450	100	50	4	10‡
1N4727	30	5	0.85	10	100	20	4	§
1N4863	70	5	1.2	100	50	50	2	7‡
1N4864	125	100	1.1	100	100	80	1.3	4
DZ800	2	5	0.8	10	2#	2	4	§
DZ805	15	5	0.8	10	2#	12	4	§
DZ806	25	5	0.8	10	2#	22	4	§
DA1701	100	100	1.0	50	50	50	1	2
DA1702	75	5	1.0	50	50	50	1	2
DA1703	40	5	1.0	50	50	30	2	2
DA1704	25	5	1.1	50	100	20	3	4
DT230A	100	.....	1.1	250	1000	250	5	300
DT230B	200	.....	1.1	250	1000	250	5	300
DT230F	50	.....	1.1	250	1000	250	5	300
DT230G	150	.....	1.1	250	1000	250	5	300
DT230H	250	.....	1.0	200	1000	250	5	300
DT230H1	250	.....	1.1	250	1000	250	5	300

*JAN and JANTX type available. †I_F = 10 mA, I_R = 1 mA, recovery to 0.1 mA. ‡I_F = I_R = 10 mA, recovery to 1.0 mA. §Q_S = 40 pC. #μA.

MULTIPELLET STABISTORS (FIG. A)

Power dissipation = 400 mW. Derate 2.67 mW/° C for T_A above 25° C. Capacitance value at f = 1 MHz.

GE Type	Min. B_V V	Min. B_V μA	Max. V_R V	V_F at I_F = 10 mA V	Max. I_R at 25° C nA	Max. I_R at 25° C V	Max. Cap. at 0 V pF
1N4156	30	5	20	1.38–1.58	50	20	25
1N4157	30	5	20	2.12–2.32	50	20	20
1N4453	30	5	20	.690–.800	50	20	30
1N4829	30	100	20	1.16–1.61	100	20	25
1N4830	30	100	20	1.90–2.35	100	20	20
1N5179	30	5	20	2.60–3.20	50	20	20
MPD200	30	5	30	1.39–1.54	30	30	15 typ.
MPD300	60	5	60	2.10–2.33	30	30	10 typ.
MPD400	90	5	90	2.80–3.07	30	30	7 typ.
STB567	12	5	12	1.31–1.61	.....	.....	.....
STB568	12	5	12	2.09–2.31	.....	.....	.....
STB569	12	5	20	2.72–3.01	.....	.....	.....

MHD (FIG. B)

Milli heatsink diodes rated 500 mW at 25° C free air.

GE Type	DHD Type	Max. I_R at 25° C	GE Type	DHD Type	Max. I_R at 25° C
1N4531*	1N914	25 nA	MA1701	DA1701	50 nA
1N4532	1N4454	100 nA	MA1702	DA1702	50 nA
1N4533	1N4152	50 nA	MA1703	DA1703	50 nA
1N4534	1N4153	50 nA	MA1704	DA1704	100 nA
1N4536	1N4154	100 nA			

*JAN and JANTX types available.

TO-98 plastic packaged devices engineered to deliver excellent performance with maximum value. NPN construction except as otherwise noted. All TO-98 devices can be supplied with leads formed to fit either a TO-5 or TO-18 socket; prices on request.

SMALL SIGNAL AMPLIFIERS
AUDIO TO 30 MHz

P_T = 360 mW.

GE Type	h_{FE} I_C = 2 mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	NF dB	Typical C_{ob} pF	Typical f_t MHz
2N2711	30–90	18	0.2	.....	7	120
2N2712	75–225	18	0.2	.....	7	120
2N2923	90–180	25	0.2	15†	7	120
2N2924	150–300	25	0.2	15†	7	120
2N2925	235–470	25	0.2	15†	7	120
2N2926*	35–470	18	0.2	.....	7	120
2N3390	400–800	25	0.2	.....	7	120
2N3391	250–500	25	0.2	1.9	7	120
2N3391A	250–500	25	0.2	5.0	7	120
2N3392	150–300	25	0.2	15†	7	120
2N3393	90–180	25	0.2	15†	7	120
2N3394	55–110	25	0.2	15†	7	120
2N3395*	150–500	25	0.2	.....	7	120
2N3396*	90–500	25	0.2	.....	7	120
2N3397*	55–500	25	0.2	.....	7	120
2N3398*	55–800	25	0.2	.....	7	120
2N3721	60–660	18	0.2	.....	7	120
2N3900	250–500	18	0.2	1.9	7	120
2N3900A	250–500	18	0.2	5.0	7	120
2N3901	350–700	18	0.2	5.0	7	120
2N5172	100–500	25	0.25‡	.....	7	120
2N5998	150–300	25	0.1	0.5	4	350

*Supplied in narrow spread, distinctively color-coded beta groups. †Input impedance, ohms. ‡Maximum.

HIGH FREQUENCY AMPLIFIERS AND OSCILLATORS
262.5 kHz TO 100 MHz EPITAXIAL

GE Type	h_{FE} I_C = 2 mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	Max. NF dB	Typical C_{ob} pF	Typical f_t MHz
2N3843	20–40	30	0.065	10.2	2.8	135
2N3843A	20–40	30	0.065	8.5	2.8	135
2N3844	35–70	30	0.065	10.2	2.8	135
2N3844A	35–70	30	0.065	8.5	2.8	135
2N3845	60–120	30	0.065	10.2	2.8	135
2N3845A	60–120	30	0.065	8.5	2.8	135
2N3854	35–70	18	0.085	16*	2.5	300
2N3854A	35–70	30	0.085	16*	2.5	300
2N3855	60–120	18	0.085	16*	2.5	350
2N3855A	60–120	30	0.085	16*	2.5	350
2N3856	100–200	18	0.085	16*	2.5	375
2N3856A	100–200	30	0.085	16*	2.5	375
2N3858	60–120	30	0.055	10*	2.5	135
2N3859	100–200	30	0.055	10*	2.5	135
2N3860	150–300	30	0.055	10*	2.5	135
2N5232	250–500	50	0.055	.....	2.5	135
2N5232A	250–500	50	0.055	5	2.5	135
2N5249	400–800	50	0.055	.....	2.5	135
2N5249A	400–800	50	0.055	5	2.5	135
2N5309	60–120§	50	0.055	.....	2.5	135
2N5310	100–300§	50	0.055	.....	2.5	135
2N5311	250–500§	50	0.055	.....	2.5	135

100 MHz TO 950 MHz EPITAXIAL

2N3662	20 min.†	12	0.6‡	4	1.2	700
2N3663	20 min.†	12	0.6‡	4	1.2	700
D16G6	20 min.#	12	0.6‡	4	1.5	500

*C_{ib}, pF. †I_C = 8 mA, V_{CE} = 10 V. ‡Maximum. §I_C = 10 μA. #I_C = 5 mA, V_{CE} = 10 V.

TYPE D13V
INTEGRATED VOLTAGE REGULATOR (IVR)

The IVR consists of two NPN transistors, a zener diode and a resistor on a monolithic chip mounted in a TO-98 three-lead plastic package. It is designed for use as a shunt voltage regulating element and reference amplifier with simple resistor programming. Characteristics: Regulated Voltage Range: 10 volts min.; 40 volts max. TC of Regulated Voltage: 0.3%/°C typ.; 0.1%/°C max. Thevenin Impedance: 10 ohms typ.; 50 ohms max. Thevenin Reference Voltage: 8.5 volts typ.; 10 volts max. Total Average Power: 400 mW.

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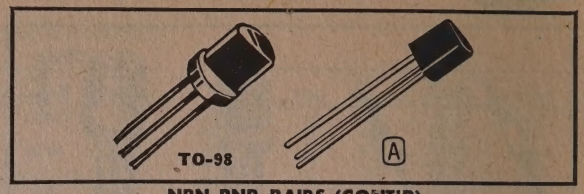
NPN AND PNP SILICON SIGNAL TRANSISTORS

TO-98 and TO-18 (Fig. A) plastic encapsulated devices engineered to deliver excellent performance with maximum value. All signal devices can be supplied with formed leads to fit either TO-5 or TO-18 sockets. Data and pricing on request.



NPN LARGE SIGNAL AMPLIFIERS AND MEDIUM SPEED SWITCHES—EPITAXIAL (TO-98)

GE Type	h_{FE} I_C = 2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typical C_{obo} pF	Typical f_t MHz
2N2713	30–90	18	0.3	360	6.0	120
2N2714	75–225	18	0.3	360	6.0	120
2N3402*	75–225	25	0.3	900	6.0	120
2N3403*	180–540	25	0.3	900	6.0	120
2N3404*	75–225	50	0.3	900	6.0	120
2N3405*	180–540	50	0.3	900	6.0	120
2N3414	75–225	25	0.3	360	6.0	120
2N3415	180–540	25	0.3	360	6.0	120
2N3416	75–225	50	0.3	360	6.0	120
2N3417	180–540	50	0.3	360	6.0	120
2N4256	100–500	30†	0.25	360	4.0	135
2N4424	180–540	40	0.3	360	6.0	120
2N4425*	180–540	40	0.3	900	6.0	120
2N5418	40–120	25	0.25	360	6.0	140
2N5419	100–300	25	0.25	360	6.0	140
2N5420	250–500	25	0.25	360	6.0	140

*TO-98 in heat sink. †V_{CES} value. ‡I_C = 50 mA.

NPN DARLINGTON AMPLIFIERS (TO-98)

Monolithic Darlington amplifiers ideal for preamplifier input stages requiring high input impedances of several megohms. Available with heatsink which raises P_T to 560 mW. h_{ie} value at f = 1 kHz.

GE Type	h_{FE} I_C = 2 mA V_{CE} = 5 V	Min. BV_{CEO} V	Max. h_{ie} I_C = 2 mA V_{CE} = 5 V	P_T at 25° C mW	Max. C_{obo} pF
D16P1	2,000 min.	12	400K ohms	400	10
2N5305	2,000–20,000	25	500K ohms	400	10
2N5306	7,000–70,000	25	500K ohms	400	10
2N5306A†	7,000–70,000	25	500K ohms	400	10
2N5307	2,000–20,000	40	600K ohms	400	10
2N5308	7,000–70,000	40	600K ohms	400	10
2N5308A†	7,000–70,000	40	600K ohms	400	10

†Low noise versions.

PNP DARLINGTON AMPLIFIERS (TO-18)

GE Type	h_{FE} I_C = 2 mA V_{CE} = 5 V	V_{CEO} V	Max. $V_{CE(SAT)}$ I_C = 500 mA	P_T at 25° C mW	Max. C_{obo} pF
D34C1	2K–20K	40	1.75	500	8
D34C2	7K–70K	40	1.75	500	8
D34C3	50K	40	1.75	500	8
D34C4	2K–20K	25	1.75	500	8
D34C5	7K–70K	25	1.75	500	8
D34C6	50K	25	1.75	500	8

PNP SILICON TRANSISTORS (TO-98)

GE Type	h_{FE}	V_{CEO} V	P_T mW	$V_{CE(SAT)}$ V	Typical C_{obo} pF	Typical f_t MHz
2N5354	40–120	25	360	.25	8	340
2N5355	100–300	25	360	.25	8	340
2N5365	40–120	40	360	.25	5.5	340
2N5366	100–300	40	360	.25	5.5	340

NPN HIGH VOLTAGE APPLICATIONS (TO-98)

GE Type	h_{FE} I_C = 2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typical C_{obo} pF	Typical f_t MHz
2N3858A	60–120	60	0.25	360	2.5	135
2N3859A	100–200	60	0.25	360	2.5	135
2N3877	20 min.	70	1.0	360	2.5	135
2N3877A	20 min.	85	1.0	360	2.5	135
2N5174	40–600*	75	0.95	360	2.5	135
2N5175	55–160*	100	0.95	360	2.5	135
2N5176	140–300*	100	0.95	360	2.5	135

*I_C = 10 mA.

NPN HIGH VOLTAGE APPLICATIONS (TO-18)

2N6218	20	300	1	500	5	50
2N6219	20	250	1	500	5	50
2N6220	20	200	1	500	5	50
2N6221	20	150	1	500	5	50

NPN-PNP COMPLEMENTARY PAIRS

P_T = 500 mW except 2N6000 Series P_T = 400 mW. Available with heatsink (exc. 2N6000 Series) which raises P_T to 1 W at 25° C Tc.

TO-98

GE Type Polarity NPN	GE Type Polarity PNP	h_{FE} I_C = 2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{obo} pF	Typical f_t MHz
D33D21	D29E1	60–200	25	0.75	9.4	150
D33D22	D29E2	150–500	25	0.75	9.4	165
D33D24	D29E4	60–120	40	0.75	9.4	120
D33D25	D29E5	100–200	40	0.75	9.4	135
D33D26	D29E6	150–300	40	0.75	9.4	150
D33D29	D29E9	60–120	60	0.75	9.4	115
D33D30	D29E10	100–200	60	0.75	9.4	135

NPN-PNP PAIRS (CONT'D) TO-18 (FIG. A)

GE Type Polarity NPN	GE Type Polarity PNP	h_{FE} I_C = 2 mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{obo} pF	Typical f_t MHz
2N5810	2N5811	60–200	25	0.75	9.0	200
2N5812	2N5813	150–500	25	0.75	9.0	200
2N5814	2N5815	60–120	40	0.75	9.0	200
2N5816	2N5817	100–200	40	0.75	9.0	200
2N5818	2N5819	150–300	40	0.75	9.0	200
2N5820	2N5821	60–120	60	0.75	9.0	200
2N5822	2N5823	100–200	60	0.75	9.0	200
2N6000	2N6001	100–300*	25	0.175†	5.0	250
2N6002	2N6003	250–500*	25	0.175†	5.0	300
2N6004	2N6005	100–300*	40	0.175†	5.0	250
2N6006	2N6007	250–500*	40	0.175†	5.0	300
2N6010	2N6011	100–300*	40	0.130‡	9.0	200
2N6014	2N6015	100–300*	60	0.130‡	9.0	200

*I_C = 10 mA. †NPN; PNP, 0.350 V. ‡NPN; PNP, 0.300 V.

NPN AMPLIFIERS AND SWITCHES (FIG. A)

In TO-18 plastic package. Electrical replacements for hermetic transistors. P_T = 360 mW at T_A = 25° C.

HIGH SPEED SWITCHES—EPITAXIAL

V_{CEO} = 15 volts except GET3646, V_{CEO} = 20 volts.

GE Type	h_{FE} I_C = 10 mA	Max. $V_{CE(SAT)}$ V	Typical C_{obo} pF	Typical f_t MHz	Maximum t_{on} nsec	Maximum t_{off} nsec	Maximum t_s nsec
GET706	20 min.	.250	6.0	350	40	75	35
GET708	30–120	.250	5.5	350	40	75	25
GET914	30–120	.250	5.5	350	40	40	20
GET3013	30–120*	.180	4.5	400	15	16	18
GET3014	30–120*	.180	4.5	400	16	25	18
GET3646	30–120*	.200	4.5	400	18	28	18

*I_C = 30 mA.

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

GE Type	h_{FE} at I_C Min.-Max.	h_{FE} at I_C mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{obo} pF	Typical f_t MHz
GET929	60–120	10*	50	.125	2.5	135
GET930	100–300	10*	50	.125	2.5	135
GET2221	40–120	150	30	.300	5.6	250
GET2221A	40–120	150	40	.300	5.6	250
GET2222	100–300	150	30	.300	5.6	250
GET2222A	100–300	150	40	.300	5.6	250
GET3638†	20 min.	1	25	.250	5.8	340
GET3638A†	100 min.	10	25	.250	5.8	340
2N5824	60–120	2	40	.125	1.9	150
2N5825	100–300	2	40	.125	1.9	150
2N5826	150–450	2	40	.125	1.9	150
2N5827	250–500	2	40	.125	1.9	250
2N5828	400–800	2	40	.125	1.9	250

*μA. †PNP.

REFERENCE AMPLIFIERS

Designed for applications in power supplies where they can serve the dual function of a voltage reference element and an error voltage amplifier. Integrated devices comprised of zener diode and NPN transistor in a single pellet. Cancellation of temperature coefficients between the zener diode and transistor result in a transfer characteristic having a very low net TC. Circuit Characteristics: V_{CB} = 3 V, I_C = 0.5 mA (RA3 Series, 0.1 mA), I_Z = 0 (RA3 Series, 5 mA), R_B = 1 K. For further information see PIB 35.35.

GE Type	Temperature Coeff. Range %/° C	Temperature Coeff. Range ° C	Min.-Max. V_{REF} V	Min. G_{MC} μhmo	h_{FE} V_{CE} = 3 V I_C = .5mA	I_{CBO} V_{CB} = 30 V Typ.	I_{CBO} V_{CB} = 30 V Max.
RA1	.02	0					
RA1A	.005	to	6.3–7.7	3000	10–120	.004	1.0
RA1B	.002	70					
RA2	.02	−55					
RA2A	.005	to	6.65–7.35	6000	40–120	.004	0.1
RA3	.02	−55					
RA3A	.005	to	6.65–7.35	2000	30–90*	.006†	0.1†
RA3B	.002	+150					

*V_{CE} = 3 V, I_C = .1 mA. †V_{CB} = 45 V.

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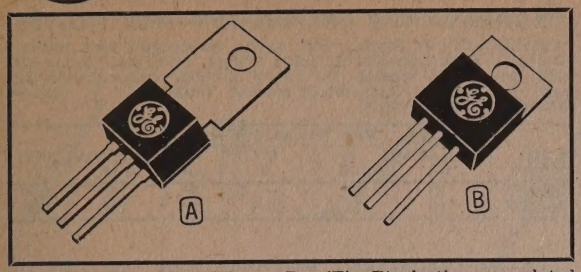
Silicon Power Transistors



Power Tab (Fig. A) and Power Pac (Fig. B) plastic encapsulated devices engineered to deliver excellent performance with maximum value. Can be supplied with formed leads to fit TO-5 or TO-66 configurations. Data and pricing on request.

SILICON POWER TAB TRANSISTORS (FIG. A)

D40D/D41D, D40E/D41E, D42C/D43C are complementary; D40N and D40P applications in CRT video output, regulators, inverters. D40C, D40D, D40E, D40K, D41D, D41E, D42C, D43C applications as audio output, 3 watts to 20 watts; regulators, drivers, inverters, motor controls, lamp controls and relays.

NPN Darlington h_{FE} at V_{CE} = 5 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = 500 mA and I_B = 0.5 mA. P_T at 25° C tab.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D40C1	10K–60K	30	0.5	1.0	1.5	5	75	6.25
D40C2	40K min.	30	0.5	1.0	1.5	5	75	6.25
D40C3	90K min.	30	0.5	1.0	1.5	5	75	6.25
D40C4	10K–60K	40	0.5	1.0	1.5	5	75	6.25
D40C5	40K min.	40	0.5	1.0	1.5	5	75	6.25
D40C7	10K–60K	50	0.5	1.0	1.5	5	75	6.25
D40C8	40K min.	50	0.5	1.0	1.5	5	75	6.25

NPN Darlington h_{FE} at V_{CE} = 5 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = 1.5 amps and I_B = 3 mA. P_T at 25° C tab.

D40K1	10K min.	30	1.5	2.5	1.5	5	75	10
D40K2	10K min.	50	1.5	2.5	1.5	5	75	10

NPN h_{FE} at V_{CE} = 10 V and I_C = 20 mA. P_T at 25° C tab.

D40N1	30–90	250	0.1	0.2	.....	3	80	6.25
D40N2	60–180	250	0.1	0.2	.....	3	80	6.25
D40N3	30–90	300	0.1	0.2	.....	3	80	6.25
D40N4	60–180	300	0.1	0.2	.....	3	80	6.25
D40N5	20 min.	375	0.1	0.2	.....	3	80	6.25

NPN h_{FE} at V_{CE} = 2 V and I_C = 100 mA. $V_{CE(SAT)}$ at I_C = 500 mA and I_B = 50 mA. P_T at 25° C tab.

D40D1	50–150	30	1.0	1.5	0.5	8	200	6.25
D40D2*	120–360	30	1.0	1.5	0.5	8	200	6.25
D40D3	290 min.	30	1.0	1.5	0.5	8	200	6.25
D40D4	50–150	45	1.0	1.5	0.5	8	200	6.25
D40D5	120–360	45	1.0	1.5	0.5	8	200	6.25
D40D7	50–150	60	1.0	1.5	1.0	8	200	6.25
D40D8	120–360	60	1.0	1.5	1.0	8	200	6.25
D40D10	50–150	75	1.0	1.5	1.0	8	200	6.25
D40D11	120–360	75	1.0	1.5	1.0	8	200	6.25
D40D13	50–150	75	1.0	1.5	1.0	8	200	6.25
D40D14	120–360	75	1.0	1.5	1.0	8	200	6.25

NPN h_{FE} at V_{CE} = 2 V and I_C = 100 mA. P_T at T_C = 25° C.

D40E1	50 min.†	30	2	.....	8
D40E5	50 min.†	60	2	.....	8
D40E7	50 min.†	80	2	.....	8

NPN h_{FE} at V_{CE} = 10 V and I_C = 80 mA. $V_{CE(SAT)}$ at I_C = 100 mA and I_B = 10 mA. P_T at 25° C tab.

D40P1	40 min.*	120	0.5	1.0	1.0	6	50	6.25
D40P3	40 min.*	180	0.5	1.0	1.0	6	50	6.25
D40P5	40 min.*	225	0.5	1.0	1.0	6	50	6.25

PNP h_{FE} at V_{CE} = 2 V and I_C = 100 mA. $V_{CE(SAT)}$ at I_C = −50 mA and I_B = −50 mA. P_T at 25° C tab.

D41D1	50–150	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D2	120–360	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D3	290 min.	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D4	50–150	−45	−1.0	−1.5	−0.5	10	150	6.25
D41D5	120–360	−45	−1.0	−1.5	−0.5	10	150	6.25
D41D7	50–150	−60	−1.0	−1.5	−1.0	10	150	6.25
D41D8	120–360	−60	−1.0	−1.5	−1.0	10	150	6.25
D41D10	50–150	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D11	120–360	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D13	50–150	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D14	120–360	−75	−1.0	−1.5	−1.0	10	150	6.25

PNP h_{FE} at V_{CE} = 2 V and I_C = 100 mA. P_T at T_C = 25° C.

D41E1	50 min.†	−30	2	.....	8
D41E5	50 min.†	−60	2	.....	8
D41E7	50 min.†	−80	2	.....	8

PNP Darlington H_{FE} at V_{CD} = 5 V, I_C = 200 mA. $V_{CE(SAT)}$ at I_C = 1.5A, I_B = 3 mA for D41K1.2 and $V_{CE(SAT)}$ at I_C = 1.0A, I_B = 2mA for D41K3, 4.

D41K1	10K min.	−30	−2	−3	−1.5	9	100	10
D41K2	10K min.	−50	−2	−3	−1.5	9	100	10
D41K3	10K min.	−30	−2	−3	−1.5	9	100	10
D41K3	10K min.	−50	−2	−3	−1.5	9	100	10

*20 when measured at 2 mA collector current. †10 at V_{CE} = 2 V and I_C = 1 A.

POWER TAB TRANSISTORS (CONT'D)

NPN h_{FE} at V_{CE} = 1 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = 1 A and I_B = 50 mA. P_T at 25° C tab.

GE Type	h_{FE}§	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D42C1	25 min.	30	3.0	5.0	0.5	100	50	12.5
D42C2	40–120	30	3.0	5.0	0.5	100	50	12.5
D42C3†	40–120	30	3.0	5.0	0.5	100	50	12.5
D42C4	25 min.	45	3.0	5.0	0.5	100	50	12.5
D42C5	40–120	45	3.0	5.0	0.5	100	50	12.5
D42C6†	40–120	45	3.0	5.0	0.5	100	50	12.5
D42C7	25 min.	60	3.0	5.0	0.5	100	50	12.5
D42C8	40–120	60	3.0	5.0	0.5	100	50	12.5
D42C9†	40–120	60	3.0	5.0	0.5	100	50	12.5
D42C10	25 min.	80	3.0	5.0	0.5	100	50	12.5
D42C11*	40–120	80	3.0	5.0	0.5	100	50	12.5
D42C12†	40–120	80	3.0	5.0	0.5	100	50	12.5
D42C100	75 min.	30	3.0	.....	.....	.....	.....	12.5

NPN h_{FE} at V_{CE} = 10 V and I_C = 500 mA. $V_{CE(SAT)}$ at I_C = 500 mA and I_B = 50 mA. P_T for D42R1, 2 and $V_{CF(SAT)}$ at I_C = 300 mA, I_B = 30 mA for D42R3, 4.

D42R1	30 min.	250	1.0	2.0	1.0	30	55	15
D42R2	30 min.	300	1.0	2.0	1.0	30	55	15
D42R3	30 min.	250	1.0	2.0	1.0	30	55	15
D42R4	30 min.	300	1.0	2.0	1.0	30	55	15

PNP h_{FE} at V_{CE} = −1 V and I_C = −200 mA. $V_{CE(SAT)}$ at I_C = −1 A and I_B = −50 mA. P_T at 25° C tab.

D43C1	25 min.	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C2	40–120	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C3†	40–120	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C4	25 min.	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C5	40–120	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C6†	40–120	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C7	25 min.	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C8	40–120	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C9†	40–120	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C10	25 min.	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C11*	40–120	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C12†	40–120	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C100	75 min.	−30	−3.0	.....	.....	.....	.....	12.5

*h_{FE} = 20 min. at 2 V, 1 A; all others = 10 min. †h_{FE} = 20 min. when measured at I_C = 2 A. §h_{FE} = 20 min. at 1 V, 1 A on parts 2, 5, 8, 11; h_{FE} = 10 min. at 1 V, 1 A on parts 1, 4, 7, 10. $V_{CE(SAT)}$ on parts 1, 4, 7, 10 is measured at 1 A, 100 mA.

SILICON POWER PAC TRANSISTORS (FIG. B)

D44C/D45C and D44H/D45H are complementary. Application as audio output, regulators, drivers, inverters, motor and lamp controls and relays. D44R and D44Q applications include 120 VAC line operated amplifiers; low thru high frequency inverters/converters; TV and other display tube deflection and many others.

NPN h_{FE} at V_{CE} = 1 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = 1 A and I_B = 50 mA. P_T at 25° C tab.

GE Type	h_{FE}§	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D44C1	25 min.	30	4.0	6.0	0.5	100	50	30.0
D44C2	40–120	30	4.0	6.0	0.5	100	50	30.0
D44C3†	40–120	30	4.0	6.0	0.5	100	50	30.0
D44C4	25 min.	45	4.0	6.0	0.5	100	50	30.0
D44C5	40–120	45	4.0	6.0	0.5	100	50	30.0
D44C6†	40–120	45	4.0	6.0	0.5	100	50	30.0
D44C7	25 min.	60	4.0	6.0	0.5	100	50	30.0
D44C8	40–120	60	4.0	6.0	0.5	100	50	30.0
D44C9†	40–120	60	4.0	6.0	0.5	100	50	30.0
D44C10	25 min.	80	4.0	6.0	0.5	100	50	30.0
D44C11*	40–120	80	4.0	6.0	0.5	100	50	30.0
D44C12†	40–120	80	4.0	6.0	0.5	100	50	30.0

PNP Darlington H_{FE} at I_C = 5.0 A, V_{CE} = 5 V. $V_{CE(SAT)}$ at I_C = 5.0 A, I_B = 10mA.

D44E1	1000 min.	40	10	20	1.5	130	 50
D44E2	1000 min.	60	10	20	1.5	130	 50
D44E3	1000 min.	80	10	20	1.5	130	 50

NPN h_{FE} at V_{CE} = 10 V and I_C = 2 amps. $V_{CE(SAT)}$ at I_C = 2 amps and I_B = 200 mA. P_T at 25° C tab.

D44Q1	20 min.‡	125	4.0	8.0	1.0	40	50	31.25
D44Q3	20 min.‡	175	4.0	8.0	1.0	40	50	31.25
D44Q5	20 min.‡	225	4.0	8.0	1.0	40	50	31.25

NPN h_{FE} at V_{CE} = 10 V and I_C = 500 mA. $V_{CE(SAT)}$ at I_C = 500 mA and I_B = 50 mA. P_T at 25° C tab.

D44R1	30–90	250	1.0	2.0	1.0	30	40	31.25
D44R2	75–175	250	1.0	2.0	1.0	30	40	31.25
D44R3	30–90	300	1.0	2.0	1.0	30	40	31.25
D44R4	75–175	300	1.0	2.0	1.0	30	40	31.25
D44R5	30 min.	250	1.0	2.0	1.0•	30	40	31.25
D44R6	30 min.	300	1.0	2.0	1.0•	30	40	31.25
D44R7	150–300	250	1.0	2.0	1.0	30	40	31.25
D44R8	150–300	300	1.0	2.0	1.0	30	40	31.25

*h_{FE} = 20 min. at 2 V, 1 A; all others = 10 min. †h_{FE} = 20 min. when measured at I_C = 2 A. ‡h_{FE} = 20 min. at 10 V, 2 A. §h_{FE} = 20 min. at 1 V, 1 A on parts 2, 5, 8, 11; h_{FE} = 10 min. at 1 V, 1 A on parts 1, 4, 7, 10, 100. $V_{CE(SAT)}$ on parts 1, 4, 7, 10 is measured at 1 A, 100 mA. •$V_{CE(SAT)}$ measured at I_C = 300 mA and I_b = 30 mA.

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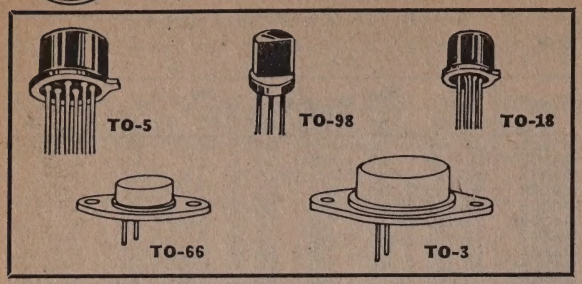

POWER PAC TRANSISTORS (CONT'D)

NPN h_{FE} at V_{CE} = 1 V and I_C = 2 amps. $V_{CE(SAT)}$ at I_C = 8 amps and I_B = 0.4 A (0.8 A for D44H1, 4, 7, 10). P_T at 25° C.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D44H1	35 min.	30	10	20	1.0	130	50	50
D44H2	60 min.	30	10	20	1.0	130	50	50
D44H4	35 min.	45	10	20	1.0	130	50	50
D44H5	60 min.	45	10	20	1.0	130	50	50
D44H7	35 min.	60	10	20	1.0	130	50	50
D44H8	60 min.	60	10	20	1.0	130	50	50
D44H10	35 min.	80	10	20	1.0	130	50	50
D44H11	60 min.	80	10	20	1.0	130	50	50

PNP h_{FE} at V_{CE} = −1 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = −1 A and I_B = 50 mA. P_T at 25° C tab.

D45C1	25 min.	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C2	40–120	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C3	40–120†	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C4	25 min.	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C5	40–120	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C6	40–120†	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C7	25 min.	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C8	40–120	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C9	40–120†	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C10	25 min.	−80	−4.0	−6.0	−0.5	125	40	30.0
D45C11	40–120	−80	−4.0	−6.0	−0.5	125	40	30.0
D45C12	40–120†	−80	−4.0	−6.0	−0.5	125	40	30.0

†h_{FE} = 20 min. at −1 V, −2 A.

PNP Darlington H_{FE} at I_C = −5.0 A, V_{CE} = −5.0 V. $V_{CE(SAT)}$ at I_C = 5.0 A, I_B = −10 mA.

D45E1	1000 min.	−40	−10	−20	−1.5	220	50
D45E2	1000 min.	−60	−10	−20	−1.5	220	50
D45E3	1000 min.	−80	−10	−20	−1.5	220	50

PNP h_{FE} at V_{CE} = 10 V and I_C = 200 mA. $V_{CE(SAT)}$ at I_C = −8 A and I_B = −0.4 A (−0.8 A for D45H1, 4, 7, 10). P_T at 25° C.

D45H1	35 min.	−30	−10	−20	−1.0	230	40	50
D45H2	60 min.	−30	−10	−20	−1.0	230	40	50
D45H4	35 min.	−45	−10	−20	−1.0	230	40	50
D45H5	60 min.	−45	−10	−20	−1.0	230	40	50
D45H7	35 min.	−60	−10	−20	−1.0	230	40	50
D45H8	60 min.	−60	−10	−20	−1.0	230	40	50
D45H10	35 min.	−80	−10	−20	−1.0	230	40	50
D45H11	60 min.	−80	−10	−20	−1.0	230	40	50

SILICON CONTROL SWITCHES (SCS)

Four-terminal TO-18 package.

GE Type	Anode Blk. V	Cont. DC I_F mA	Peak Recur. I_F A*	Peak Cath. Gate Cur. mA	Dissi-pation mW	I_B at VAC V	I_B R_{GC}= 10K µA	Maximum V_{GC} I_{GC}= 20 µA V	Maximum V_{GA} I_{GA}= 1 µA V
3N81	65	200	1.0	500	400	65	20	5	65
3N82	100	200	1.0	500	400	100	20	5	100
3N83	70	50	0.1	50	200	70	20†	5	70
3N84	40	175	0.5	100	320	40	20†	5	40
3N85	100	175	0.5	100	320	100	20†	5	100
3N86	65	200	1.0	500	400	65	20	5	65

*At 100 µsec. †Measured at 125° C; all others at 150° C.

SEMICONDUCTOR MANUALS

GE SCR Manual ETR 3875A—5th edition. Over 500 pages consisting of much new information, including new chapters on triacs, regulating circuits and motor controls. Specifications on hundreds of new high-performance thyristors are detailed.
Price Each.....**$3.00**

PROGRAMMABLE UNIJUNCTION—PUT (TO-98)

Passivated PNPN devices with anode, anode gate and cathode terminals. Recommended for SCR trigger, pulse and timing circuits, oscillators, sensing and sweep circuits. Gate-cathode forward voltage and gate-anode reverse voltage = 40 V. Anode-cathode voltage = ±40 V.

GE Type	I_{GAO} V_S = 40 V nA	Max. Values at V_S = 10 V I_P µA	V_T V	I_V µA	$I_{F(CONT)}$ mA	P_T W
2N6027	10	2	.2–1.6	50	150	300
2N6028	10	0.15	.2–.6	25	150	300

COMPLEMENTARY UNIJUNCTION (TO-18)

D5K offers the ultimate in unijunction stability and uniformity. Ideal for low frequency oscillators and timers. Same characteristics as standard unijunction except opposite polarity current and voltages are applied to it.

GE Type	R_{BO} kohms	Intrinsic Standoff Ratio	I_V Min. mA	I_P Max. µA	I_{EO} Max. nA	V_O Min. Volts	Freq. Stab.* %
D5K1	5.5–8.2	.58–.62	1	5	10	3.5	1.0
D5K2	5–15	.58–.62	1	15	10	2.0	2.0

*Frequency stability from 25° C, −55° C to +150° C.

SILICON BILATERAL SWITCHES (SBS)

6-10 VOLT BIDIRECTIONAL PLANAR TRIGGER DIODE

V_F at 200 mA = 1.7 volts.

GE Type	JEDEC Outline	Max. $I_{F(CONT)}$ mA	T_J −55° C to °C	V_S V	Max. I_S µA	I_B at 5 V µA
2N4991	TO-98	175	+125	6–10	500	1.0
2N4992	TO-98	200	+150	7.5–9	120	0.1
2N4993	TO-18	200	+150	6–10	500	1.0

SILICON UNILATERAL SWITCHES (SUS)

6-10 VOLT PLANAR TRIGGER DIODE

V_{ACR} = 30 volts maximum. V_F at 200 mA = 1.5 volts.

GE Type	JEDEC Outline	Max. $I_{F(CONT)}$ mA	T_J −55° C to °C	V_S V	Max. I_S µA	I_B at 5 V µA
2N4983	TO-18	175	+125	6–10	500	1.0
2N4984	TO-18	200	+150	7.5–9	150	0.1
2N4985	TO-18	200	+150	7.5–8.2	300	0.01
2N4986	TO-18	175	+125	7–9	200	0.1
2N4987	TO-98	175	+125	6–10	500	1.0
2N4988	TO-98	200	+150	7.5–9	150	0.1
2N4989	TO-98	200	+150	7.5–8.2	300	0.1
2N4990	TO-98	175	+125	7–9	200	0.1

SILICON UNIJUNCTION TRANSISTORS

"N" type silicon bar mounted between two ohmic base contacts with a "P" type emitter near base two. Three-terminal package.

GE Types Bar Structure TO-18	TO-5	R_{BBO} V_{BB} = 3V I_E = 0 kohms	Intrin. Stand-off Ratio†	I_V Min. mA	I_P Max. Emitter µA	I_{EO} Max. µA	I_{EO} Max. V_{B2E}‡
2N2417	2N489				12	2	60
2N2417A	2N489A*	4.7–6.8	.51–.62	8	12	2	60
2N2417B	2N489B				6	0.2	30
2N2418	2N490				12	2	60
2N2418A	2N490A*	6.2–9.1	.51–.62	8	12	2	60
2N2418B	2N490B				6	0.2	30
.....	2N490C				2	0.02	30
2N2419	2N491				12	2	60
2N2419A	2N491A*	4.7–6.8	.56–.68	8	12	2	60
2N2419B	2N491B				6	0.2	30
2N2420	2N492				12	2	60
2N2420A	2N492A*	6.2–9.1	.56–.68	8	12	2	60
2N2420B	2N492B				6	0.2	30
.....	2N492C				2	0.02	30
2N2421	2N493				12	2	60
2N2421A	2N493A*	4.7–6.8	.62–.75	8	12	2	60
2N2421B	2N493B				6	0.2	30
2N2422	2N494				12	2	60
2N2422A	2N494A*	6.2–9.1	.62–.75	8	12	2	60
2N2422B	2N494B				6	0.2	30
.....	2N494C				2	0.02	30
.....	2N1671				25	12	30
.....	2N1671A	4.7–9.1	.47–.62	8	25	12	30
.....	2N1671B				6	0.2	30
.....	2N1671C				2	0.02	30
.....	2N2160	4.0–12.0	.47–.80	8	25	12	30
2N2646	.....	4.7–9.1	.56–.75	4	5	12	30
2N2647	.....	4.7–9.1	.68–.82	8	2	0.2	30
D5E37	.....	4.0–12.0	.47–.85	4	25	12	30
D5E43	.....			6	2	1.0	30
D5E44	.....	4.7–9.1	.68–.82	4	5	12	30
D5E45	.....			8	2	0.5	30

†V_{BB} = 10 V. ‡T_J = 25° C. *JAN type available.

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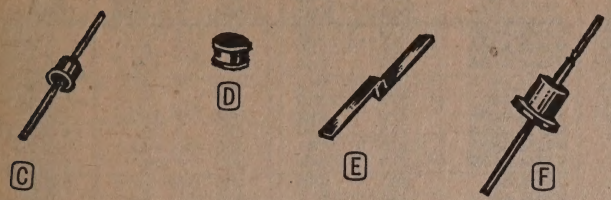


GERMANIUM TUNNEL DIODES

Ideal for high speed switching, 1000 times faster than computer diodes; microwave oscillators and mixers; communications—tuners, converters, detectors and amplifiers; level sensing—sampling (scopes), Schmidt triggers and counters; computer circuits—sense amplifiers, flip-flops, AND-NOR gates.

GENERAL PURPOSE (FIG. C)

Series inductance, 0.5 nH. Typical peak voltage, 65 mV except TD-9, 60 mV typical; "A" types, 65 mV ±7.

GE Type	Peak Point I_P mA	±%	Maximum Valley Point mA	Cap. pF	Series Resis. Ohms	*	Typ. f_{no} GHz
1N3712	1.0	10	0.18	10	4.0	8	2.3
1N3713*	1.0	2.5	0.14	5	4.0	8.5±1	3.2
1N3714	2.2	10	0.48	25	3.0	18	2.2
1N3715*	2.2	2.5	0.31	10	3.0	19±3	3.0
1N3716	4.7	10	1.04	50	2.0	40	1.8
1N3717*	4.7	2.5	0.60	25	2.0	41±5	3.4
1N3718	10.0	10	2.20	90	1.5	80	1.6
1N3719*	10.0	2.5	1.40	50	1.5	85±10	2.8
1N3720	22.0	10	4.80	150	1.0	180	1.6
1N3721*	22.0	2.5	3.10	100	1.0	190±30	2.6
TD-9	0.5	10	10.0	5	6.0	4.0	1.3

*Typ. negative conductance -G mhos x 10^{-3}. *JAN type available.

ULTRA-HIGH SPEED SWITCHING DO-18 (FIG. E)

Subminiature epoxy package with series inductance of 1.5 nH. Also available in pill package (Fig. D) with series inductance of 0.15 nH; specify TD-271, TD-271A, TD-276A.

GE Type	Peak Point mA (±10%)	Maximum Valley Point mA	Cap. pF	Voltage, mV Peak Point Typ.	Fwd $I_F = I_P$	Typical Series Resis. Ohms	Rise Time psec
TD-261	2.2	0.31	3.0	70	500–650	5.0	430
TD-261A	2.2	0.31	1.0	110*	500–650	7.0	160
TD-262	4.7	0.60	4.0	80	500–650	3.5	320
TD-262A	4.7	0.60	1.0	120*	500–650	4.0	74
TD-263	10.0	1.40	9.0	75	500–650	1.7	350
TD-263A	10.0	1.40	5.0	80	520–650	2.0	190
TD-263B	10.0	1.40	2.0	120*	550–650	2.5	68
TD-264	22.0	3.80	18.0	90	600 typ.	1.8	185
TD-264A	22.0	3.80	4.0	120*	550–650	2.0	64
TD-265	50.0	8.50	25.0	110	625 typ.	1.4	100
TD-265A	50.0	8.50	5.0	130	640 typ.	1.5	35
TD-266	100	17.50	35.0	150	650 typ.	1.1	57
TD-266A	100	17.50	6.0	180	660 typ.	1.2	22

*Maximum.

GERMANIUM BACK DIODES

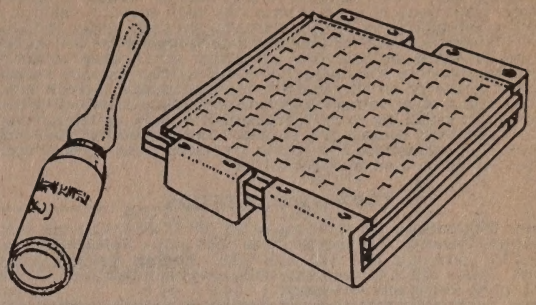
BD-1 thru BD-7 (Fig. C)—Miniature axial package. Series inductance, 1.5 nH. General purpose usage as detectors, mixers and switching circuits.

BD-402 thru BD-407 (Fig. D)—Microwave pill package. Series inductance, 0.15 nH. Suggested usage as high frequency detectors, mixers and switching circuits.

Fig. C GE Type	Maximum I_P mA	Total C, pF	Min. V_{R1}* mV	Fig. D GE Type	Maximum I_P mA	Total C, pF	Min. V_{R1}* mV
BD-1	1.0	20	440	BD-402	0.5	3	420
BD-2	0.5	10	420	BD-403	0.2	1	400
BD-3	0.2	10	400	BD-404	0.1	1	380
BD-4	0.1	10	380	BD-405	0.05	1	350
BD-5	0.05	10	350	BD-406	0.02	1	330
BD-6	0.02	10	330	BD-407	0.01	1	330
BD-7	0.01	10	300				
1N4090†	0.2	1.5	430				

*$I_R = I_P$ max. †Low noise mixer, Fig. E.

SEMICONDUCTOR CHIPS



Transistor and diode chips suitable for custom circuitry. Feature gold backing of 3000Å, minimum thickness, for transistor collector contact and diode cathode contact. Aluminum metalization for transistor emitter and base contacts and diode anode contact. Maximum conditions for mounting chips—425° C for a maximum of five minutes in an inert atmosphere. Chips are shipped in glass vials sealed with a nitrogen back-fill. This standard offering features optimum chip protection. Also available in "Tray Packs" in quantities of 100, 400 or 1,000.

SILICON PLANAR OXIDE-PASSIVATED DIODE CHIPS

GE Type	Description
1N914A Chip 1N914B Chip	High-speed switching in computer and general purpose applications
1N3064 Chip	Very high speed switching in computer and general purpose applications
1N3600 Chip	High conductance and high-speed switching in logic, core, hammer driver circuits and general purpose applications
1N3605 Chip	High-speed switching in computer and general purpose applications; high conductance, fast recovery time, low leakage and low capacitance
1N4150 Chip	Similar to 1N3600 Chip
1N4152 Chip	Similar to 1N3605 Chip
1N4454 Chip	Similar to 1N3064 Chip
1N4532 Chip	Similar to 1N3064 Chip
1N4533 Chip	Similar to 1N3605 Chip
1N4606 Chip	Similar to 1N3600 Chip except high voltage

SILICON PLANAR PASSIVATED TRANSISTOR CHIPS

GE Type	Description
2N708 Chip	NPN for high-speed switching, also suitable as small signal device
2N918 Chip 2N929 Chip 2N930 Chip	NPN for high frequency applications NPN for low-level amplifiers NPN for low-level amplifiers
2N2222 Chip	NPN for high-speed switching, amplifier and core driver applications
2N2484 Chip	NPN for low-level, high gain preamplifier use in hybrid and microminiature circuits
2N2714 Chip	NPN for general purpose applications
2N2905 Chip 2N2906 Chip 2N2907 Chip	PNP for amplifiers, drivers and general purpose switching (electrically similar to JEDEC series only)
2N3414 Chip 2N3415 Chip 2N3416 Chip 2N3417 Chip	NPN for general purpose circuits, specially suited for high-level linear amplifiers or medium-speed switching circuits in control applications
2N3855A Chip 2N3856A Chip	NPN for RE, IF and converters in AM and FM radio receivers and TV video amplifiers
2N3859 Chip 2N3860 Chip	NPN for AM radio, IF and converter applications
2N3975 Chip 2N3976 Chip	NPN for medium-speed switching and large signal RF amplifiers
2N5172 Chip	NPN for general purpose applications
2N5232 Chip	NPN for low noise preamp and small signal amplifier
2N5306 Chip	NPN darlington chip for preamp input stages
M22P2 M22P3 M22P4	NPN chip for general low signal levels
M73P1	NPN darlington chip for preamp input stages and medium-speed switching control circuits

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FOR OEM SEMICONDUCTOR PRICING

GE-MOV® Metal Oxide Varistors

GE-MOV Varistors are voltage dependent, symmetrical resistors which perform in a manner similar to back-to-back zener diodes in circuit protective functions and offer advantages in performance and economics. When exposed to high energy voltage transient, varistor impedance changes from a very high standby value to a very low conducting value thus clamping the line voltage to a safe level. Dangerous energy of incoming high voltage pulse is absorbed by the GE-MOV varistor, thus protecting your voltage sensitive circuit components. Eliminates follow-on currents, extends contact life and protects circuit insulation. Applications include component and system voltage transient protection in inductive and transformer switching circuits, regenerative loads, switching magnetic amplifiers; contact arc suppression-reduction of lightning effects. If nonsinusoidal wave input is present, peak voltage input values should be used to select model.

TYPE PA VARISTORS

Power Dissipation: Up to 15 watts at 70° C mounting-tab temperature. **Current:** Can handle up to 2000 amps. **Voltage Rating:** 130–575 volts rms and 170–780 VDC. **Energy Rating:** 10–80 joules. Meets NEMA creep and strike-terminal distances. Comes with quick disconnect terminals.

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts†
V130PA10A	130	184	170	10	8
V130PA20A	130	184	170	20	15
V130PA20B	130	184	170	20	15
V130PA20C	130	184	170	20	15
V150PA10A	150	212	195	10	8
V150PA20A	150	212	195	20	15
V150PA20B	150	212	195	20	15
V150PA20C	150	212	195	20	15
V250PA10A	250	354	330	10	4
V250PA20A	250	354	330	20	7
V250PA40A	250	354	330	40	13
V250PA40B	250	354	330	40	13
V250PA40C	250	354	330	40	13
V275PA10A	275	389	360	10	4
V275PA20A	275	389	360	20	7
V275PA40A	275	389	360	40	13
V275PA40B	275	389	360	40	13
V275PA40C	275	389	360	40	13
V320PA40A	320	452	415	40	12
V320PA40B	320	452	415	40	12
V320PA40C	320	452	415	40	12
V420PA20A	420	595	540	20	5
V420PA40A	420	595	540	40	10
V420PA40B	420	595	540	40	10
V420PA40C	420	595	540	40	10
V460PA20A	460	650	600	20	5
V460PA40A	460	650	600	40	10
V460PA40B	460	650	600	40	10
V460PA40C	460	650	600	40	10
V480PA20A	480	679	625	20	3
V480PA40A	480	679	625	40	5
V480PA80A	480	679	625	80	10
V480PA80B	480	679	625	80	10
V480PA80C	480	679	625	80	10
V510PA20A	510	721	655	20	3
V510PA40A	510	721	655	40	5
V510PA80A	510	721	655	80	10
V510PA80B	510	721	655	80	10
V510PA80C	510	721	655	80	10
V550PA20A	550	778	720	20	3
V550PA40A	550	778	720	40	5
V550PA80A	550	778	720	80	9
V550PA80B	550	778	720	80	9
V550PA80C	550	778	720	80	9
V575PA20A	575	813	750	20	3
V575PA40A	575	813	750	40	5
V575PA80A	575	813	750	80	9
V575PA80B	575	813	750	80	9
V575PA80C	575	813	750	80	9

TYPE L VARISTORS

Power Dissipation: Up to 1.3 watts at 85° C ambient temperature. **Current:** Can handle up to 2000 amps. **Voltage Rating:** 95–1000 volts rms and 130–675 VDC. **Energy Rating:** 7–160 joules.

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts†
V95LA7A	95	134	130	7	0.45
V95LA7B	95	134	130	7	0.45
V130LA1	130	184	175	1	0.24
V130LA2	130	184	175	2	0.24
V130LA10A	130	184	175	10	0.5
V130LA20A	130	184	175	20	0.85
V130LA20B	130	184	175	20	0.85
V150LA1	150	212	200	1	0.24
V150LA2	150	212	200	2	0.24
V150LA10A	150	212	200	10	0.5
V150LA20A	150	212	200	20	0.85
V150LA20B	150	212	200	20	0.85
V250LA2	250	354	330	2	0.28
V250LA4	250	354	330	4	0.28
V250LA15A	250	354	330	15	0.6

TYPE (CONT'D)

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts†
V250LA20A	250	354	330	20	0.6
V250LA40A	250	354	330	40	0.9
V250LA40B	250	354	330	40	0.9
V275LA2	275	389	369	2	0.28
V275LA4	275	389	369	4	0.28
V275LA15A	275	389	369	15	0.6
V275LA20A	275	389	369	20	0.6
V275LA40A	275	389	369	40	0.9
V275LA40B	275	389	369	40	0.9
V300LA2	300	424	405	2	0.28
V300LA4	300	424	405	4	0.28
V320LA15A	320	452	420	15	.6
V320LA20A	320	452	420	20	.6
V320LA40A	320	452	420	40	.9
V320LA40B	320	452	420	40	.9
V420LB20A	420	595	560	20	0.55
V420LB40A	420	595	560	40	0.9
V420LB40B	420	595	560	40	0.9
V460LB20A	460	650	615	20	0.55
V460LB40A	460	650	615	40	0.9
V460LB40B	460	650	615	40	0.9
V480LB20A	480	679	640	20	0.55
V480LB40A	480	679	640	40	0.7
V480LB80A	480	679	640	80	1.0
V480LB80B	480	679	640	80	1.0
V510LB20A	510	721	675	20	0.55
V510LB40A	510	721	675	40	0.7
V510LB80A	510	721	675	80	1.0
V510LB80B	510	721	675	80	1.0
V550LB20A	550	778	.....	20	0.6
V550LB40A	550	778	.....	40	0.7
V550LB80A	550	778	.....	80	1.0
V550LB80B	550	778	.....	80	1.0
V575LB20A	575	813	.....	20	0.65
V575LB40A	575	813	.....	40	0.8
V575LB80A	575	813	.....	80	1.1
V575LB80B	575	813	.....	80	1.1
V1000LB80A	1000	1414	.....	80	0.9
V1000LB160A	1000	1414	.....	160	1.3
V1000LB160B	1000	1414	.....	160	1.3

†Power dissipation.

TYPE MA VARISTORS

Power Dissipation: 0.2 watts. **Current:** Can handle up to 20 amps.

V150MA1A	88	124	121	.10	.2
V150MA1B	92	130	137	.20	.2
V180MA1B	105	148	144	.15	.2
V180MA3B	110	156	152	.30	.2
V220MA2A	132	187	181	.20	.2
V220MA4B	138	195	191	.40	.2
V270MA2A	163	230	224	.20	.2
V270MA4B	171	242	235	.40	.2
V330MA2A	188	266	257	.25	.2
V330MA5B	200	283	274	.50	.2
V390MA3A	234	331	322	.30	.2
V390MA6B	242	342	334	.60	.2
V430MA3A	253	358	349	.35	.2
V430MA7B	264	373	365	.70	.2

TYPE ZA VARISTORS

Power Dissipation: Up to .55 watts. **Current:** Can handle up to 300 amps.

V22ZA1	12	17	16	.6	0.17
V22ZA3	12	17	16	3.0	0.40
V24ZA1	15	21	19	.8	0.18
V24ZA4	15	21	19	4.0	0.40
V27ZA1	15	21	20	.8	0.18
V27ZA4	15	21	20	4.0	0.40
V33ZA1	20	28	26	1.0	0.19
V33ZA5	20	28	26	5.0	0.40
V39ZA1	25	35	31	1.2	0.20
V39ZA6	25	35	31	6.0	0.45
V47ZA1	30	42	38	1.4	0.21
V47ZA7	30	42	38	7.0	0.45
V56ZA2	35	49	45	1.7	0.22
V56ZA8	35	49	45	8.0	0.45
V68ZA2	40	57	56	2.0	0.24
V68ZA10	40	57	56	10.0	0.50
V82ZA2	50	71	66	2.5	0.25
V82ZA12	50	71	66	12.0	0.50
V100ZA3	60	85	81	3.0	0.26
V100ZA15	60	85	81	15.0	0.55
V120ZA1	70	99	97	1.0	0.20
V120ZA6	75	106	102	6.0	0.45
V150ZA1	85	120	119	1.2	0.20
V150ZA8	95	134	127	8.0	0.45
V180ZA1	105	149	146	1.5	0.20
V180ZA10	115	163	153	10.0	0.45

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OEM Semiconductor Pricing

In accordance with Amendment 2 dated July 28, 1965 of MIL-S-19500D, all military types will be branded with the prefix JAN rather than USN, USAF, or USA just as rapidly as present inventories are depleted.

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
1N91	$1.90	$1.72	.....
1N92	4.39	2.92	.....
1N93	6.10	4.06	.....
JAN1N93A	7.99	5.32	.....
1N248, A, B, C*†	2.75	1.83	.....
1N249, A, B, C*†	2.84	1.89	.....
1N250, A, B, C*†	2.92	1.95	.....
1N914	.30	.20	$0.14*
1N914A	.40	.26	.15*
1N914A‡	.64	.32	.12
1N914B	.80	.54	.17*
1N914B‡	.86	.43	.16
1N916	.52	.34	.16*
1N916A	.58	.38	.17*
1N916B	1.07	.71	.27*

GE Type	Net Each, Lots 1-99	100-999
1N1183*†	$ 2.92	$1.95
1N1183A*†	3.09	2.06
1N1184*†	3.00	2.00
JAN1N1184	4.85	2.99
JANTX 1N1184	6.21	4.14
1N1184A*†	3.17	2.11
1N1185*†	3.36	2.24
1N1185A*	3.57	2.38
1N1186*†	3.96	2.64
JAN1N1186†	5.47	3.65
JANTX1N1186	6.97	4.65
1N1186A*†	4.08	2.72
1N1187*†	4.72	3.15
1N1187A*†	4.95	3.30
1N1188*†	5.85	3.90
JAN1N1188	8.89	5.93
JANTX1N1188	10.39	6.93
1N1188A*†	6.19	4.13
1N1189*†	6.45	4.30
1N1189A*†	7.42	4.95
1N1190*†	6.90	4.60
1N1190A*†	8.70	5.80
JAN1N1190	10.95	7.30
JANTX1N1190	13.20	8.80
1N1191, A*†	2.75	1.83
1N1192, A*†	2.84	1.89
1N1193, A*†	2.92	1.95
1N1194, A*†	3.00	2.00
1N1195, A*†	4.02	2.68
1N1196, A*†	4.95	3.30
1N1197, A*†	6.15	4.10
1N1198, A*†	6.68	4.45
1N1199, A*†	1.95	1.30
1N1200, A*†	2.03	1.35
1N1201, A*†	2.08	1.39
1N1202, A*†	2.62	1.75
JAN1N1202A†	3.96	2.64
JANTX 1N1202A	5.61	3.74
1N1203, A*†	3.60	2.40
1N1204, A*†	4.57	3.05
JAN1N1204A†	5.55	3.70
JANTX 1N1204A†	7.21	4.81
1N1205, A*†	5.32	3.55
1N1206, A*†	6.37	4.25
JAN1N1206A†	8.25	5.50
JANTX 1N1206A†	9.91	6.61
1N1341, A*†	1.95	1.30
1N1342, A*†	2.03	1.35
1N1343, A*†	2.08	1.39
1N1344, A*†	2.22	1.48
1N1345, A*†	3.16	2.11
1N1346, A*†	3.96	2.64
1N1347, A*†	4.65	3.10
1N1348, A*†	5.48	3.65
1N1581*†	1.95	1.30
1N1582*†	2.03	1.35
1N1583*†	2.22	1.48
1N1584*†	3.16	2.11
1N1585*†	4.11	2.74
1N1586*†	4.96	3.31
1N1587*†	5.92	3.95
1N1612*†	1.95	1.30

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
1N1613*†	$2.03	$1.35	.....
1N1614*†	2.22	1.48	.....
JAN 1N1614†	3.03	2.02	.....
1N1615*†	3.75	2.50	.....
JAN 1N1615†	5.25	3.50	.....
1N1616*†	5.55	3.70	.....
JAN 1N1616†	7.16	4.77	.....
1N2154*†	2.74	1.82	.....
1N2155*†	3.45	2.30	.....
1N2156*†	4.38	2.92	.....
1N2157*†	5.25	3.50	.....
1N2158*†	5.92	3.95	.....
1N2159*†	6.15	4.10	.....
1N2160*†	6.30	4.20	.....
1N3064‡	.80	.40	$0.14
1N3208*†	2.31	1.54	.....
1N3209*†	2.48	1.65	.....
1N3210*†	2.64	1.76	.....
1N3211*†	2.90	1.94	.....
1N3212*†	3.47	2.31	.....
1N3213*†	4.13	2.75	.....
1N3214*†	4.95	3.30	.....

GE Type	Net Each, Lots 1-9	10-99
1N3266*	$27.00	$16.50
1N3267*	28.50	17.25
1N3268*	30.50	18.50
1N3269*	33.00	19.75
1N3270*	35.50	21.50
1N3271*	37.50	22.50
1N3272*	41.00	24.50
1N3273*	43.50	26.00
1N3288*	14.95	9.75
1N3289*	15.75	10.00
JAN1N3289	45.50	27.25
1N3290*	16.75	10.25
1N3291*	17.75	10.80
JAN1N3291	49.50	29.75
1N3292*	19.00	11.50
1N3293*	20.00	12.00
JAN1N3293	60.50	36.25
1N3294*	23.00	13.75
JAN1N3294	71.50	43.00
1N3295*	25.00	15.00
JAN1N3295	84.00	50.50
1N3296*	27.00	16.20

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
1N3605‡	$0.88	$0.44	$0.16

GE Type	Net Each, Lots 1-99	100-999
1N3670,A*†	$ 7.87	$5.25
1N3671, A*†	8.77	5.85
JAN1N3671A	10.28	6.85
1N3672, A*†	9.45	6.30
1N3673, A*†	9.90	6.60
JAN1N3673	11.40	7.60
JANTX 1N3673A	13.65	9.10
1N3712	6.75	4.49
1N3713	10.11	6.74
JAN1N3713	11.62	7.74
1N3714	5.90	3.93
1N3715	9.27	6.18
JAN1N3715	10.76	7.18
1N3716	4.19	2.80
1N3717	7.91	5.27
JAN1N3717	8.66	5.77
1N3718	5.10	3.40
1N3719	7.91	5.27
JAN1N3719	8.28	5.52
1N3720	6.46	4.31
1N3721	7.58	5.05
JAN1N3721	8.28	5.52

GE Type	Net Each, Lots of 1-9	10-99
1N3738*	$28.75	$17.25
1N3739*	31.00	18.75
1N3740*	33.50	20.25
1N3741*	38.50	23.00
1N3742*	43.50	26.00
1N3743*	48.50	29.00

GE Type	Net Each, Lots 1-99	100-999
1N3765*†	$ 8.55	$ 5.70
1N3766*†	9.75	6.50
JAN1N3766	12.00	8.00
JANTX1N3766	14.25	9.50
1N3767*†	10.72	7.15
1N3768*†	11.62	7.75
JAN1N3768	13.95	9.30
JANTX1N3768	16.20	10.80
1N3879*†	2.55	1.70
1N3880*†	2.93	1.95
1N3881*†	3.23	2.15
1N3882*†	3.83	2.55
1N3883*†	4.50	3.00
1N3889*†	3.00	2.00
1N3890*†	3.60	2.40
JAN1N3890*†	4.80	3.20
JANTX 1N3890*†	6.45	4.30
1N3891*†	4.35	2.90
JAN1N3891*†	5.93	3.95
JANTX 1N3891*†	7.58	5.05
1N3892*†	5.25	3.50
1N3893*†	6.30	4.20
JAN1N3893*†	8.25	5.50
JANTX 1N3893*†	9.90	6.60
1N3899*†	4.20	2.80
1N3900*†	5.02	3.35
1N3901*†	6.00	4.00
1N3902*†	7.20	4.80
1N3903*†	8.63	5.75
1N3909*†	4.88	3.25
JAN1N3909†	6.30	4.20
JANTX1N3909†	7.80	5.20
1N3910*†	5.85	3.90
JAN1N3910	7.35	4.90
JANTX1N3910	8.85	5.90
1N3911*†	6.98	4.65
JAN1N3911†	9.45	6.30
JANTX1N3911	10.95	7.30
1N3912	8.40	5.60
JAN1N3912†	11.55	7.70
JANTX1N3912	13.05	8.70
1N3913*†	10.13	6.75
JAN1N3913†	13.65	9.10
JANTX1N3913	15.15	10.10
1N3987*†	8.25	5.50
1N3988*†	8.76	5.84
1N3989*†	9.44	6.29
1N3990*†	10.80	7.20

GE Type	Net Each, Lots 1-9	10-99
1N4049*	$27.00	$16.50
1N4050*	30.50	18.50
1N4051*	33.00	19.75
1N4052*	35.00	21.00
1N4053*	38.00	22.75
1N4054*	40.50	24.25
1N4055*	43.50	26.00
1N4056*	46.00	27.50

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
1N4090	Contact Factory		
1N4148, JAN	$0.39	$0.26	$0.18
JANTX 1N4148	1.92	1.29	1.09
1N4149	.52	.34	.16*
1N4150	2.10	1.40	.39*
JAN1N4150	2.10	1.40	.39*

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
JANTX 1N4150	$3.60	$2.40	$1.60
1N4151	.75	.50	.19*
1N4152	.60	.40	.18*
1N4152‡	.88	.44	.16
1N4153	.75	.50	.19*
JAN1N4153	.75	.50	.19*
JANTX 1N4153	1.75	1.26	.98
1N4154	.33	.22	.15*
1N4156	.75	.50	.33*
1N4157	1.04	.69	.39*
1N4245	.38	.29	.21
1N4246	.45	.35	.24
1N4247	.59	.46	.33
1N4248	1.05	.70	.49
1N4249	1.19	.80	.56
1N4305	.60	.40	.17*
1N4444	1.51	.99	.89*
1N4446	.36	.24	.15*
1N4447	.58	.38	.17*
1N4448	.75	.50	.17*
1N4449	1.07	.71	.27*
1N4450	1.45	.97	.40*
1N4451	1.28	.85	.75*
1N4453	.54	.36	.26*
1N4454	.24	.16	.12*
1N4454‡	.80	.40	.14
JAN1N4454	.24	.16	.12*
JANTX 1N4454	2.10	1.40	1.25
JAN1N4459	11.40	7.60	.....
1N4510*†	11.80	7.45	.....
1N4511*†	14.40	9.60	.....
1N4529*†	13.50	9.00	.....
1N4530*†	17.25	11.50	.....
1N4531	.45	.30	.14*
JAN1N4531	.45	.30	.14*
JANTX 1N4531	2.00	1.34	1.20
1N4532	.65	.43	.14*
JAN1N4532	.65	.43	.14*
JANTX 1N4532	2.10	1.30	1.20
1N4533	.69	.46	.24*
1N4533‡	.88	.44	.16
1N4534	1.00	.67	.31*
1N4536	.42	.28	.18*
1N4606	1.20	.80	.30*
1N4606‡	.96	.48	.18
1N4607	1.31	.87	.35*
1N4608	1.44	.94	.89*
1N4727	.40	.26	.14*
1N4828	.45	.30	.20*
1N4829	.69	.46	.26*
1N4830	.93	.62	.36*
1N4863	1.02	.68	.58*
1N4864	1.37	.91	.81*
1N4951	.36	.24	.20
1N4952	.41	.27	.23
1N5059	.36	.28	.20
1N5060	.47	.36	.25
1N5061	.63	.44	.35
1N5062	.95	.62	.49
1N5179	1.32	.88	.49*
1N5331*†	10.50	7.00	.....
1N5332*†	12.60	8.40	.....
1N5624	.75	.50	.38
1N5625	1.00	.67	.51
1N5626	1.53	1.04	.80
1N5627	3.75	2.50	1.90

GE Type	Net Each, Lots 1-99	100-999
2N319	$ 1.83	$1.22
2N320	1.70	1.14
2N321	1.75	1.17
2N322	1.75	1.17
2N323	1.70	1.14
2N324	1.73	1.15
JAN2N461	3.01	2.00
2N489	7.74	5.16
2N489A	8.28	5.52
JAN2N489A	8.46	5.64
2N489B	9.90	6.60
2N490	8.46	5.64
2N490A	9.00	6.00
JAN2N490A	9.18	6.12
2N490B	10.62	7.08
2N490C	12.78	8.52
2N491	9.09	6.06

*Available in reverse polarity at same price; to order, add suffix **R**, i.e., 1N248**R**, 1N248**RA**, etc. †Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. ‡Semiconductor chip. *Larger quantity prices available on request.

OEM Semiconductor Pricing

GE Type	Net Each, Lots 1-99	100-999
2N491A	$ 9.63	$6.42
JAN2N491A	9.81	6.54
2N491B	11.25	7.50
2N492	10.71	7.14
2N492A	11.25	7.50
JAN2N492A	11.43	7.62
2N492B	12.87	8.58
2N492C	15.03	10.02
2N493	11.61	7.74
2N493A	12.15	8.10
JAN2N493A	12.33	8.22
2N493B	13.77	9.18
2N494	11.79	7.86
2N494A	12.33	8.22
JAN2N494A	12.51	8.34
2N494B	13.95	9.30
2N494C	16.11	10.74
2N508	1.75	1.17
2N508A	1.83	1.22
2N524	1.80	1.20
2N525	1.95	1.29
2N526	2.11	1.41
JAN2N526	2.50	1.66
2N527	2.35	1.56
2N681	2.92	1.94
2N682†	3.44	2.29
JAN2N682†	4.44	3.29
JANTX2N682	5.44	4.29
2N683†	4.35	2.89
JAN2N683†	5.35	3.89
JANTX2N683	6.35	4.89
2N684†	5.14	3.42
2N685†	5.85	3.89
JAN2N685†	6.85	4.89
JANTX2N685	7.85	5.89
2N686†	6.51	4.33
JAN2N686†	7.51	5.33
JANTX2N686	8.51	6.33
2N687†	7.01	4.66
JAN2N687†	8.01	5.66
JANTX2N687	9.01	6.66
2N688†	8.18	5.44
JAN2N688†	9.18	6.44
JANTX2N688	10.18	7.44
2N689†	9.80	6.52
JAN2N689†	10.80	7.52
JANTX2N689	11.80	8.52
2N690†	10.52	6.99

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N706	See GET706		
2N708	See GET708		
2N708*	$ 1.54	$0.77	$0.28
2N877	3.00	2.00	.....
2N878	3.30	2.20	.....
2N879	5.40	3.60	.....
2N880	6.30	4.20	.....
2N881	7.50	5.00	.....
2N885	8.62	5.75	.....
2N886	10.50	7.00	.....
2N887	13.12	8.75	.....
2N888	14.77	9.85	.....
2N914	See GET914		
2N918*	1.92	.35	.26
2N929	See GET929		
2N929*	1.76	.88	.32
2N930	See GET930		
2N930*	1.86	.34	.25

GE Type	Net Each, Lots 1-99	100-999
2N1175	$1.76	$1.17
2N1370	1.27	.85
2N1371	1.86	1.24
2N1372	1.43	.95
2N1373	2.00	1.33
2N1374	1.81	1.20
2N1375	2.24	1.49
2N1376	2.27	1.51
2N1377	2.48	1.66
2N1378	2.27	1.51
2N1379	2.54	1.69
2N1380	1.16	.77
2N1381	1.40	.94
2N1413	2.32	1.55
2N1414	1.73	1.15
2N1415	2.03	1.35
2N1595	1.65	1.10
2N1596	2.40	1.60
2N1597	4.80	3.20

GE Type	Net Each, Lots 1-99	100-999
2N1598	$7.50	$5.00
2N1599	9.90	6.60
2N1671	3.24	2.16
2N1671A	3.51	2.34
2N1671B	3.87	2.58
2N1671C	8.91	5.94
2N1770†	1.99	1.32
2N1770A†	2.52	1.68
2N1771†	2.22	1.48
2N1771A†	2.76	1.83
2N1772†	3.07	2.04
2N1772A†	3.67	2.44
2N1773†	4.44	2.95
2N1773A†	5.36	3.56
2N1774†	5.51	3.66
2N1774A†	6.60	4.38
2N1775†	6.51	4.33
2N1775A†	7.73	5.14
2N1776†	7.28	4.84
2N1776A†	8.65	5.75
2N1777†	8.03	5.34
2N1777A†	9.65	6.42
2N17778†	9.97	6.63

GE Type	Net Each, Lots 1-9	10-99
2N1792	$18.00	$10.75
2N1793	19.50	11.75
2N1794	21.50	13.00
2N1795	23.50	14.00
2N1796	26.00	15.75
2N1797	27.50	16.50
2N1798	32.00	19.25

GE Type	Net Each, Lots 1-99	100-999
2N1842†	$2.74	$1.82
2N1842A†	2.91	1.93
2N1843†	3.06	2.03
2N1843A†	3.26	2.16
2N1844†	3.84	2.55
2N1844A†	4.18	2.78
2N1845†	4.53	3.01
2N1845A†	4.84	3.22
2N1846†	5.28	3.51
2N1846A†	5.54	3.69
2N1847†	5.85	3.89
2N1847A†	6.16	4.10
2N1848†	6.41	4.26
2N1848A†	5.71	4.46
2N1849†	7.35	4.88
2N1849A†	7.80	5.18
2N1850†	8.35	5.55
2N1850A†	8.68	5.77

GE Type	Net Each, Lots 1-9	10-99
2N1909	$18.00	$10.80
2N1910	19.50	11.75
2N1911	21.00	12.50
2N1912	23.00	13.75
2N1913	25.00	15.25
2N1914	28.00	16.75
2N1915	29.50	17.75
2N1916	34.50	20.75

GE Type	Net Each, Lots 1-99	100-999
2N1924	$2.30	$1.53
2N1925	2.59	1.73
2N1926	3.08	2.06

GE Type	Net Each, Lots 1-9	10-99
2N2023	$24.00	$14.50
2N2024	31.00	18.50
2N2025	35.00	21.00
2N2026	38.00	22.75
2N2027	38.00	22.75
2N2028	39.00	23.50
2N2029	40.00	24.00
2N2030	43.00	25.75
JAN2N2031	33.00	19.75

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N2160	$1.49	$0.99	.....
2N2221, A	See GET2221, A		
2N2222, A	See GET2222, A		
2N2222*	1.66	.30	$0.23

GE Type	Net Each, Lots 1-99	100-999
2N2322	$ 1.95	$1.30
2N2322A	3.63	2.42
2N2323	2.15	1.43
JAN2N2323	3.63	2.42
JANTX2N2323	5.28	3.52
2N2323A	2.81	1.87
JAN2N2323A	4.13	2.75
JANTX2N2323A	5.78	3.85
2N2324	3.38	2.25
JAN2N2324	4.79	3.19
JANTX2N2324	6.44	4.29
2N2324A	4.62	3.08
JAN2N2324A	6.27	4.18
JANTX2N2324A	7.92	5.28
2N2325	4.98	3.32
2N2325A	6.60	4.40
2N2326	6.41	4.27
JAN2N2326	8.42	5.61
JANTX2N2326	10.07	6.71
2N2326A	8.58	5.72
JAN2N2326A	12.71	8.47
JANTX2N2326A	14.36	9.57
2N2327	7.59	5.06
2N2327A	12.21	8.14
2N2328	9.24	6.16
JAN2N2328	11.72	7.91
JANTX2N2328	13.37	8.91
2N2328A	13.20	8.80
2N2329	12.21	8.14
JANTX2N2329	16.34	10.89
2N2344	3.80	2.53
2N2345	4.29	2.86
2N2346	5.61	3.74
2N2347	10.07	6.71
2N2348	13.20	8.80

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N2484	See GET2484		
2N2484*	$1.86	$0.34	$0.25
2N2646	1.00	.67	.....
2N2647	1.89	1.26	.....
2N2711	.41	.27	.23
2N2712	.41	.27	.23
2N2713	.45	.30	.25
2N2714	.47	.32	.26
2N2840	6.35	4.25	.....
2N2904	See GET2904		
2N2505	See GET2905		
2N2905*	2.64	.48	.36
2N2906	See GET2906		
2N2907	See GET2907		
2N2907*	2.64	.48	.36
2N2923	.29	.20	.16
2N2924	.32	.21	.18
2N2925	.38	.26	.21
2N2926‡	.27	.18	.15
2N3013	See GET3013		
2N3014	See GET3014		
2N3390	.95	.63	.53
2N3391	.43	.29	.24
2N3391A	.47	.32	.26

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N3392	$ 0.29	$ 0.20	$0.16
2N3393	.29	.20	.17
2N3394	.27	.18	.15
2N3395‡	.50	.33	.28
2N3396‡	.50	.33	.28
2N3397‡	.47	.32	.26
2N3398‡	.54	.36	.30
2N3402	.39	.28	.23
2N3403	.42	.30	.24
2N3404	.50	.35	.29
2N3405	.61	.43	.35
2N3414	.34	.23	.19
2N3414*	1.98	.99	.36
2N3415	.37	.25	.20
2N3415*	2.20	1.10	.40
2N3416	.45	.30	.25
2N3416*	2.42	1.21	.44
2N3417	.56	.38	.31
2N3417*	3.30	1.65	.60
2N3605, A	Use GET914		
2N3606, A	Use GET708		
2N3607	Use GET706		
2N3638, A	Use GET3638, A		
2N3646	Use GET3646		
2N3649†	6.15	4.10	.....
2N3650†	8.02	5.35	.....
2N3651†	12.15	8.10	.....
2N3652†	15.30	10.20	.....
2N3653†	20.85	13.90	.....
2N3654†	6.82	4.55	.....
2N3655†	8.85	5.90	.....
2N3656†	13.27	8.85	.....
2N3657†	16.70	11.15	.....
2N3658†	22.80	15.20	.....
2N3662	.52	.35	.29
2N3663	.56	.38	.31
2N3721	.41	.27	.23
2N3843	.43	.29	.24
2N3843A	.45	.30	.25
2N3844	.45	.30	.25
2N3844A	.47	.32	.26
2N3845	.47	.32	.26
2N3845A	.50	.33	.28
2N3854	.34	.23	.19
2N3854A	.36	.24	.20
2N3855	.36	.24	.20
2N3855A	.38	.26	.21
2N3855A*	1.54	.77	.28
2N3856	.38	.26	.21
2N3856A	.41	.27	.23
2N3856A*	1.76	.88	.32
2N3858	.27	.18	.15
2N3858A	.34	.23	.19
2N3859	.29	.20	.17
2N3859*	1.42	.71	.26
2N3859A	.36	.24	.20
2N3860	.32	.21	.18
2N3860*	1.54	.77	.28
2N3877	.45	.30	.25
2N3877A	.52	.35	.29
2N3900	.41	.27	.22
2N3900A	.45	.30	.25
2N3901	1.06	.71	.59
2N3975*	1.32	.66	.24
2N3976*	1.54	.77	.28
2N4256	.68	.45	.38
2N4424	.43	.29	.24
2N4425	.47	.32	.26
2N4983	1.25	.83	.66
2N4984	1.65	1.10	.88
2N4985	2.80	1.86	1.49
2N4986	1.35	.90	.72
2N4987	.84	.56	.45
2N4988	1.35	.90	.72
2N4989	1.82	1.21	.97
2N4990	.94	.63	.50
2N4991	.83	.55	.44
2N4992	1.46	.97	.78
2N4993	2.06	1.37	1.10
2N4994	.278	.185	.153
2N4995	.306	.203	.168
2N5172	.24	.16	.13
2N5172*	1.16	.58	.21
2N5174	.65	.44	.36
2N5175	.70	.47	.39
2N5176	.74	.50	.41
2N5204†	9.30	6.20	.....
2N5205†	14.10	9.40	.....
2N5206†	18.45	12.30	.....
2N5207†	24.60	16.40	.....
2N5232	.34	.23	.19
2N5232*	1.54	.77	.28
2N5232A	.38	.26	.21
2N5249	.50	.33	.28
2N5249A	.54	.36	.30
2N5305	.45	.30	.25
2N5306	.43	.29	.24
2N5306*	3.08	1.54	.56
2N5306A	.50	.33	.28
2N5307	.47	.32	.26
2N5308	.52	.35	.29

*Semiconductor chip. †Prices include mounting hardware. For insulating hardware, add $0.05 per unit, any quantity. ‡Spread type.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
A15B	See 1N5624		
A15D	See 1N5625		
A15F	$0.57	$0.39	$0.30
A15M	See 1N5626		
A27B	See 1N4510		
A27PB	See 1N4511		

GE Type	Net Ea., Lots 1-99	100-999
A28, A29A*	$5.40	$3.60
A28, A29B*	6.84	4.56
A28, A29C*	8.55	5.70
A28, A29D*	9.90	6.60
A28, A29F*	4.59	3.06
A40, A41A*	2.48	1.65
A40, A41B*	2.64	1.76
A40, A41C*	2.91	1.94
A40, A41D*	3.47	2.31
A40, A41E*	4.13	2.75
A40, A41F*	2.31	1.54
A40, A41M*	4.95	3.30
A44, A45A	1.97	1.31
A44, A45B	2.16	1.44
A44, A45C	2.37	1.58
A44, A45D	2.58	1.72
A44, A45E	3.15	2.10
A44, A45F	1.82	1.21
A44, A45M	3.96	2.64

GE Type	Net Each, Lots 1-9	10-99
A70-A71A	See 1N3288	
A70-A71B	See 1N3289	
A70-A71C	See 1N3290	
A70-A71D	See 1N3291	
A70-A71E	See 1N3292	
A70-A71M	See 1N3293	
A70-A71N	See 1N3294	
A70-A71P	See 1N3295	
A70-A71PB	See 1N3296	
A70-A71S	$21.00	$12.50
A70-A71T	26.00	15.50
A72, A73A	20.60	12.35
A72, A73B	21.60	12.95
A72, A73C	22.70	13.60
A72, A73D	23.80	14.30
A72, A73E	24.00	15.00
A72, A73M	26.30	15.80
A72, A73N	29.00	17.40
A72, A73P	32.00	19.00
A72, A73PA	33.60	20.15
A72, A73PB	35.20	21.10
A72, A73S	27.60	16.55
A72, A73T	30.40	18.25
A90, A91C-A90, A91P	See 1N3735-1N3742	
A90, A91PA	46.00	27.50
A90, A91PB	48.50	29.00
A90, A91S	36.00	21.50
A90, A91T	41.50	25.00
A96, A97A	26.00	15.50
A96, A97B	29.00	17.50
A96, A97C	32.00	19.25
A96, A97D	35.00	21.00
A96, A97E	38.50	23.00
A96, A97M	42.00	25.25
A96, A97N	48.50	29.00
A96, A97P	55.00	33.00
A96, A97S	45.00	27.00
A96, A97T	51.50	31.00

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
A114A	$0.77	$0.50	$0.35
A114B	.83	.53	.38
A114C	.93	.59	.42
A114D	.98	.72	.45
A114E	1.25	.82	.58

GE Type	Net Each, Lots of 1-9	100-999	1000-9999
A114F	$ 0.68	$ 0.44	$0.31
A114M	1.38	.88	.63
A115A	1.42	.81	.60
A115B	1.72	.95	.74
A115C	2.01	1.21	.97
A115D	2.32	1.49	1.00
A115E	2.70	1.78	1.26
A115F	1.36	.78	.55
A115M	3.38	2.07	1.42
A139E†	12.15	8.10	.....
A139M†	13.20	8.80	.....
A139N†	15.30	10.20	.....
A139P†	17.40	11.60	.....

GE Type	Net Each, Lots 1-9	10-99
A190, A191A	$27.85	$16.75
A190, A191B	27.85	16.75
A190, A191C	28.75	17.25
A190, A191D	28.75	17.25
A190, A191E	31.00	18.75
A190, A191M	33.50	20.25
A190, A191N	38.50	23.00
A190, A191P	43.50	26.00
A190, A191S	36.00	21.50
A190, A191T	41.50	25.00

GE Type	Net Each, Lots 1-9	10-99
A291PC	$ 84.00	$50.40
A291PD	90.00	54.00
A291PE	96.00	57.60
A291PM	104.00	62.40
A291PN	116.00	69.60
A291PS	110.00	66.00
A295, A296PA	122.00	73.20
A295, A296PB	128.00	76.80
A295, A296PC	134.00	80.40
A295, A296PD	140.00	84.00
A295, A296PE	146.00	87.60
A295, A296PM	154.00	92.40
A295, A296PN	170.00	102.00
A295, A296PS	162.00	97.20

GE Type	Net Each, Lots of 1-9	10-99
A390A-A390E	On Request	
A390M	$ 25.00	$15.00
A390N	29.50	17.75
A390P	33.50	20.00
A390PA	35.50	21.25
A390PB	38.00	22.75
A390S	27.00	16.25
A390T	31.50	19.00
A396A-C	On Request	
A396D	28.50	17.00
A396E	31.50	19.00
A396M	33.50	20.00
A396N	39.00	23.50
A396P	45.00	27.00
A396PA	On Request	
A396PB	On Request	
A396S	36.00	21.50
A396T	42.00	25.25
A430E	53.00	31.80
A430M	59.00	35.40
A430N	71.00	42.60
A430P	84.00	50.40
A430S	65.00	39.00
A430T	77.00	46.20
A430PA	90.00	54.00
A430PB	95.00	57.00
A430PC	101.00	60.60
A430PD	106.00	63.60
A430PE	112.00	67.20
A430PM	117.00	70.20
A430PS	122.00	73.20
A437E	62.50	37.50
A437M	72.00	43.20
A437N	91.00	54.60
A437P	110.60	66.35
A437PA	120.00	72.00
A437PB	130.00	78.00
A437PC, D, E	Contact Factory	

GE Type	Net Each, Lots of 1-9	10-99
A437S	$ 81.50	$ 48.90
A437T	100.50	60.30
A500L	116.00	69.60
A500LA	120.00	72.00
A500LB	124.00	74.40
A500LC	130.00	78.00
A500LD	136.00	81.60
A500LE	142.00	85.20
A500LM	148.00	88.80
A500LN	164.00	98.40
A500LP	180.00	108.00
A500LS	156.00	93.60
A500LT	172.00	103.20
A500PE	96.00	57.60
A500PM	100.00	60.00
A500PN	108.00	64.80
A500PS	104.00	62.40
A500PT	112.00	67.20
A540D	80.00	48.00
A540E	84.00	50.40
A540L	156.00	93.60
A540LA	164.00	98.40
A540LB	172.00	103.20
A540LC	180.00	108.00
A540LD	188.00	112.80
A540M	88.00	52.80
A540N	96.00	57.60
A540P	104.00	62.40
A540PA	108.00	64.80
A540PB	112.00	67.20
A540PC	116.00	69.60
A540PD	120.00	72.00
A540PE	126.00	75.60
A540PM	132.00	79.20
A540PN	144.00	86.40
A540PS	138.00	82.80
A540PT	150.00	90.00
A540S	92.00	55.20
A540T	100.00	60.00
A570A	88.00	52.80
A570B	94.00	56.40
A570C	100.00	60.00
A570D	106.00	63.60
A570E	112.00	67.20
A570M	120.00	72.00
A570N, P, S, T	See A640	
A596M	120.00	72.00
A596N	132.00	79.20
A596P	148.00	88.80
A596PA	156.00	93.60
A596PB	164.00	98.40
A596S	126.00	75.60
A596T	140.00	84.00
A596PC	176.00	105.60
A596PD	190.00	114.00
A640L	272.00	163.20
A640P	154.00	92.40
A640PA	164.00	98.40
A640PB	174.00	104.40
A640PC	184.00	110.40
A640PD	194.00	116.40
A640PE	206.00	123.60
A640PM	218.00	130.80
A640PN	244.00	146.40
A640PS	230.00	138.00
A640PT	258.00	154.80
A640T	146.00	87.60

GE Type	Net Ea., Lots 1-99	100-999
BD1, 2	$9.27	$6.18
BD3	5.57	3.71
BD4	9.27	6.18
BD5-7	18.54	12.36

GE Type	Net Ea., Lots 1-9	10-99
BD402-BD407	$65.94	$32.97

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
C6A	$1.80	$1.20	.....
C6B	2.10	1.40	.....
C6C	3.57	2.38	.....
C6D	5.34	3.56	.....
C6F	1.65	1.10	.....
C6G	1.95	1.30	.....
C6U	1.50	1.00	.....
C7A-U	See 2N2344-8		

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
C10A-U	See 2N1770A-7A		
C11A-U	See 2N1770-8		
C12A*	$ 8.58	$ 5.71	.....
C12B*	14.26	9.48	.....
C12C*	20.69	13.75	.....
C12D*	30.66	20.38	.....
C12F*	6.75	4.48	.....
C12G*	11.34	7.54	.....
C12H*	17.32	11.51	.....
C12U*	6.28	4.17	.....
C13F	.50	.33	$0.28
C13Y	.45	.30	.25

GE Type	Net Each, Lots 1-99	100-999
C15A*	$ 2.07	$ 1.38
C15B*	2.24	1.49
C15C*	2.84	1.89
C15D*	3.17	2.11
C15E*	5.08	3.37
C15F*	1.90	1.27
C15G*	2.17	1.44
C15U*	1.84	1.22
C35A*	4.78	3.17
C35B*	6.41	4.26
C35C*	7.65	5.08
C35D*	9.02	5.99
C35E*	10.35	6.88
C35F*	3.74	2.49
C35G*	5.61	3.73
C35H*	7.01	4.66
C35M*	11.36	7.55
C35N	See C137N	
C35S	See C137S	
C35U*	3.17	2.11
C36A-U	See 2N1842-2N1850	
C36M*	9.19	6.11
C36N	Order C137N	
C36S	Order C137S	
C37A*	4.01	2.66
C37B*	5.44	3.62
C37C*	6.63	4.41
C37D*	7.58	5.04
C37E*	8.52	5.66
C37F*	3.17	2.11
C37M*	9.35	6.22
C37N	See C137N	
C37S	See C137S	
C37U*	2.77	1.84
C38A*	5.85	3.89
C38B*	8.02	5.33
C38C*	10.35	6.88
C38D*	13.06	8.68
C38E*	17.52	11.64
C38F*	4.58	3.04
C38G*	6.85	4.55
C38H*	9.19	6.11
C38U*	4.18	2.78

GE Type	Net Each, Lots of 1-9	10-99
C45, C46A	$ 18.00	$10.80
C45, C46B	19.00	11.50
C45, C46C	21.00	12.50
C45, C46D	25.00	14.75
C45, C46E	36.00	21.50
C45, C46F	On Request	
C45, C46G	18.50	11.00
C45, C46H	20.00	12.00
C45, C46M	49.00	29.50
C45, C46N	70.00	42.00
C45, C46S	58.50	35.00
C45, C46T	83.00	49.75
C45, C46U	On Request	
C50A-U	See 2N1909-16	
C50E	47.50	28.50
C50M	60.00	36.00
C50N	87.50	52.50
C50S	72.50	43.50
C50T	101.50	61.00
C52A-U	See 2N1793-6	
C52E	44.00	26.50
C52M	55.50	33.50
C52N	81.00	48.75
C52S	67.00	40.25
C52T	94.00	56.50
C52U	16.50	10.00

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. †Available in reverse polarity at same price; to order, add suffix **R**, i.e., A139E**R**, A139M**R**.

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GE Type	Net Each, Lots of 1-9	10-99
C60A–U	See 2N2023–30	
C60E	$60.00	$36.00
C62A	35.00	21.00
C62B	38.00	22.75
C62C	40.00	24.00
C62D	43.00	25.75
C62E	60.00	36.00
C62F	31.00	18.50
C62G	38.00	22.75
C62H	39.00	23.50
C62U	24.00	14.50

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
C103A	$0.75	$0.50	$0.40
C103B	.84	.56	.45
C103Q	.66	.44	.35
C103Y	.69	.46	.37
C103YY	.72	.48	.38
C106A1	.81	.54	.....
C106B1	.90	.60	.....
C106C1	1.12	.75	.....
C106D1	1.30	.87	.....
C106E1	1.50	1.00	.....
C106F1	.78	.52	.....
C106M1	1.88	1.25	.....
C106Q1	.72	.48	.....
C106Y1	.75	.50	.....
C107A1	.72	.48	.....
C107B1	.81	.54	.....
C107C1	.93	.62	.....
C107D1	1.12	.75	.....
C107E1	1.30	.87	.....
C107F1	.69	.46	.....
C107M1	1.69	1.13	.....
C107Q1	.63	.42	.....
C107Y1	.66	.44	.....
C108A1	.98	.65	.....
C108B1	1.09	.73	.....
C108C1	1.35	.90	.....
C108D1	1.59	1.05	.....
C108E1	1.80	1.20	.....
C108F1	.94	.63	.....
C108M1	2.25	1.50	.....
C108Q1	.86	.58	.....
C108Y1	.90	.60	.....
C116A1	1.08	.72	.65
C116B1	1.20	.80	.71
C116D1	1.67	1.11	1.00
C116E1	2.25	1.50	1.35
C116F1	.96	.64	.58
C116M1	2.63	1.75	1.58
C122A1	1.35	.90	.76
C122B1	1.50	1.00	.85
C122C1	1.88	1.25	1.06
C122D1	2.00	1.35	1.15
C122E1	3.00	2.00	1.70
C122F1	1.20	.80	.68
C122M1	3.50	2.25	1.93
C123A	1.55	1.03	.88
C123B	1.70	1.13	.97
C123C	2.08	1.18	1.18
C123D	2.20	1.48	1.27
C123E	3.20	2.13	1.82
C123F	1.40	.93	.80
C123M	3.70	2.38	2.05

GE Type	Net Each, Lots of 1-99	100-999
C136D*	$ 8.55	$ 5.70
C136E*	9.30	6.20
C136M*	9.70	6.50
C137E*	9.75	6.50
C137M*	10.80	7.20
C137N*	16.20	10.80
C137P*	21.15	14.10
C137PA*	23.40	15.60
C137PB*	26.55	17.70
C137S*	13.35	8.90
C137T*	18.45	12.30
C138E10E	24.00	16.00
C138M10M	26.85	17.90
C138S10M	28.95	19.30
C138N10M	32.10	21.40
C138E20E	18.60	12.40
C138M20M	20.25	13.50
C138S20M	22.35	14.90
C138N20M	24.45	16.30
C139E10E	25.65	17.10
C139M10M	28.80	19.20
C139N10M	34.80	23.20
C139S10M	31.50	21.00
C139E20E	20.85	13.90

GE Type	Net Each, Lots of 1-99	100-999
C139M20M	$23.25	$15.50
C139N20M	28.35	18.90
C139S20M	25.65	17.10
C140A-F	See 2N3649–53	
C141A-F	See 2N3654–8	
C144E15E	23.25	15.50
C144M15M	26.10	17.40
C144N15M	31.35	20.90
C144S15M	28.20	18.80
C144E30E	17.85	11.90
C144M30M	19.50	13.00
C144N30M	23.70	15.80
C144S30M	21.60	14.40

GE Type	Net Each, Lots of 1-9	10-99
C147A	$ 15.50	$ 9.25
C147B	16.00	9.50
C147C	16.50	10.00
C147D	18.00	10.75
C147E	20.00	12.00
C147M	23.25	14.00
C147N	31.00	18.50
C147P	39.00	23.50
C147PA	43.00	25.75
C147PB	47.00	28.25
C147S	27.00	16.25
C147T	35.00	21.00
C148M30	35.00	21.00
C148M40	30.00	18.00
C148N30	45.00	27.00
C148N40	38.50	23.10
C148P30	55.00	33.00
C148P40	47.00	28.20
C148PA30	60.00	36.00
C148PA40	51.00	30.60
C148PB30	65.00	39.00
C148PB40	55.00	33.00
C148S30	40.00	24.00
C148S40	34.00	20.40
C148T30	50.00	30.00
C148T40	42.50	25.50
C149A10	21.00	12.75
C149A20	18.50	11.00
C149B10	26.00	15.75
C149B20	22.50	13.50
C149C10	30.50	18.25
C149C20	27.00	16.25
C149D10	35.50	21.25
C149D20	31.00	18.75
C149E10	45.00	27.00
C149E20	38.00	22.75
C149M10	54.50	32.75
C149M20	45.00	27.00
C150, 152E	39.50	23.75
C150, 152M	44.00	26.50
C150, 152N	55.00	33.00
C150, 152P	66.00	39.50
C150, 152PA	70.50	42.25
C150, 152PB	76.00	45.50
C150, 152PC	82.50	49.50
C150, 152S	50.50	30.25
C150, 152T	60.50	36.25
C151 Series	See C158 Series	
C154, 156A	29.00	17.50
C154, 156B	35.50	21.25
C154, 156C	40.00	24.00
C154, 156D	49.00	29.50
C154, 156E	59.50	35.75
C155, 157A	26.95	16.25
C155, 157B	33.00	19.75
C155, 157C	39.00	23.50
C155, 157D	45.00	27.00
C155, 157E	53.50	32.00
C155, 157M	64.00	38.50
C158, 159E	56.50	34.00
C158, 159M	64.00	38.50
C158, 159N	78.50	47.00
C158, 159P	110.00	60.50
C158, 159PA	119.00	71.50
C158, 159PB	145.00	87.00
C158, 159S	70.50	42.25
C158, 159T	89.00	53.50
C164A	36.00	21.60
C164B	44.00	26.40
C164C	51.80	31.10
C164D	59.60	35.75
C164E	63.40	38.00
C164M	71.20	42.70
C165A	34.00	20.40
C165B	41.40	24.85
C165C	48.20	28.90
C165D	54.80	32.90
C165E	57.60	34.55
C165M	64.30	38.60
C178 Series	See C180 Series	

GE Type	Net Each, Lots of 1-9	10-99
C180A	$ 44.00	$26.50
C180B	47.00	28.25
C180C	53.00	31.75
C180D	59.50	35.75
C180E	70.50	42.25
C180M	79.00	47.50
C180N	99.00	59.50
C180P	119.00	71.50
C180PA	130.00	78.00
C180PB	141.00	84.50
C180PC	152.00	91.00
C180S	89.00	53.50
C180T	110.00	66.00
C185A	59.50	35.75
C185B	64.00	38.50
C185C	70.50	42.25
C185D	79.00	47.50
C185E	92.50	55.50
C185M	108.00	64.75

GE Type	Net Each, Lots of 1-99	100-999
C220A†	$1.77	$1.24
C220B†	1.84	1.29
C220C†	2.37	1.64
C220D†	2.71	1.87
C220E†	4.21	2.60
C220F†	1.70	1.20
C220M†	5.88	3.97
C220U†	1.62	1.05
C222A	1.57	1.04
C222B	1.64	1.09
C222C	2.17	1.44
C222D	2.51	1.67
C222E	4.01	2.66
C222F	1.50	1.00
C222M	5.68	3.77
C222U	1.42	.94
C228A†	4.11	2.80
C228B†	5.54	3.75
C228C†	6.70	4.52
C228D†	8.00	5.38
C228E†	8.75	5.83
C228F†	3.27	2.24
C228M†	9.89	6.64
C229A	3.91	2.60
C229B	5.34	3.55
C229C	6.50	4.32
C229D	7.80	5.18
C229E	8.55	5.68
C229F	3.07	2.04
C229M	9.69	6.44
C230A*†	3.54	2.42
C230B*†	4.88	3.31
C230C*†	6.05	4.09
C230D*†	7.05	4.75
C230E*†	7.88	5.31
C230F*†	2.76	1.90
C230M*†	8.72	5.86
C230U*†	2.37	1.64
C231A*†	3.96	2.70
C231B*†	5.29	3.59
C231C*†	6.46	4.36
C231D*†	7.46	5.03
C231E*†	8.30	5.58
C231F*†	3.17	2.18
C231M*†	9.13	6.14
C231U*†	2.79	1.92
C232A	3.34	2.22
C232B	4.68	3.11
C232C	5.85	3.89
C232D	6.85	4.55
C232E	7.68	5.11
C232F	2.56	1.70
C232M	8.52	5.66
C232U	2.17	1.44
C233A	3.76	2.50
C233B	5.09	3.39
C233C	6.26	4.16
C233D	7.26	4.83
C233E	8.10	5.38
C233F	2.97	1.98
C233M	8.93	5.94
C233U	2.59	1.72
C234A†	6.07	4.05
C234B†	6.97	4.65
C234C†	8.17	5.45
C234D†	9.22	6.15
C234E†	10.20	6.80
C234F†	5.40	3.60
C234M†	11.17	7.45
C235A	5.77	3.85
C235B	6.67	4.45
C235C	7.87	5.25
C235D	8.92	5.95
C235E	9.90	6.60
C235F	5.10	3.40
C235M	10.87	7.25

GE Type	Net Each, Lots of 1-9	10-99
C280, 281PB	$180.00	$108.00
C280, 281PC	192.50	115.50
C280, 281PD	206.00	123.60
C280, 281PE	219.00	131.40
C280, 281PM	232.00	139.20
C280, 281PN	260.00	156.00
C280, 281PS	245.50	147.30
C282, 283PB	207.00	124.20
C282, 283PC	221.40	132.85
C282, 283PD	236.90	142.15
C282, 283PE	251.90	151.15
C282, 283PM	266.80	160.10
C282, 283PN	299.00	179.40
C282, 283PS	282.30	169.40
C286, 287PB	219.00	131.40
C286, 287PC	235.00	141.00
C286, 287PD	251.00	150.60
C286, 287PE	266.50	159.90
C286, 287PM	282.50	169.50
C286, 287PN	314.50	188.70
C286, 287PS	298.00	178.80
C290, 291N	169.00	101.40
C290, 291P	195.50	117.30
C290, 291PA	209.00	125.40
C290, 291PB	227.00	136.20
C290, 291S	160.00	96.00
C290, 291T	184.50	110.70
C350A, B	On Request	
C350C	25.50	15.50
C350D	28.00	16.75
C350E	30.00	18.00
C350M	34.00	20.50
C350N	43.00	25.75
C350P	52.00	31.25
C350PA	56.00	33.50
C350PB	60.00	36.00
C350PC	68.00	40.75
C350S	39.00	23.50
C350T	47.00	28.25
C354A	23.00	15.25
C354B	28.00	17.75
C354C	33.00	19.75
C354D	38.00	22.75
C354E	50.00	27.50
C354M	54.50	32.75
C355A	21.00	12.75
C355B	26.00	15.50
C355C	30.00	18.00
C355D	35.00	21.00
C355E	42.00	25.25
C355M	49.00	29.50
C358E	44.00	26.50
C358M	49.50	29.75
C358N	61.00	36.75
C358P	81.00	48.75
C358PA	94.00	56.50
C358PB	120.00	72.00
C358S	54.50	32.75
C358T	70.00	42.00
C364A	36.50	22.00
C364B	42.00	25.25
C364C	48.00	28.75
C364D	53.50	32.00
C364E	60.50	36.25
C364M	67.00	40.25
C365A	31.50	19.00
C365B	33.50	20.00
C365C	39.50	23.00
C365D	41.50	25.00
C365E	48.00	28.75
C365M	53.50	32.00
C380A	32.00	19.25
C380B	34.00	20.50
C380C	38.00	23.00
C380D	44.00	26.50
C380E	52.00	31.25
C380M	60.00	36.00
C380N	76.00	45.75
C380P	92.00	55.25
C380PA	102.00	61.25
C380PB	110.00	66.00
C380PC	118.00	71.00
C380S	68.00	41.00
C380T	84.00	50.50
C385A	48.00	28.75
C385B	52.00	31.25
C385C	56.00	33.50
C385D	64.00	38.50
C385E	76.00	45.50
C385M	88.00	52.75
C387E	114.00	68.00
C387M	128.00	77.00
C387N	164.00	98.00
C387P	198.00	119.00
C387PA	216.00	130.00
C387PB	232.00	139.00
C387S	148.00	89.00
C387T	180.00	108.00
C388E	126.00	76.00
C388M	144.00	86.00
C388N	184.00	110.00

*Prices include mounting hardware. For insulating hardware, add **$0.10** per unit, any quantity. †Isolated stud part numbers are as follows: C220A2–C220U2, C228A2–C228M2, C230A2–C230U2 and C231A2–C231U2. Use adders as follows: 1-99, **$0.60**; 100-199, **$0.50**

OEM Semiconductor Pricing

GE Type	Net Each, Lots of 1-9	10-99
C388P	$224.00	$134.00
C388PA	244.00	146.00
C388PB	260.00	156.00
C388S	166.00	100.00
C388T	204.00	122.00
C390M	125.00	75.00
C390N	149.00	89.50
C390P	173.50	104.00
C390PA	187.00	112.25
C390PB	199.50	119.75
C390PC	214.00	128.50
C390S	136.50	82.00
C390T	161.50	97.00
C391PC	156.00	93.60
C391PD	164.05	98.70
C391PE	174.05	104.70
C391PM	184.00	110.40
C391PS	198.00	118.80
C391PN	203.00	121.80
C392A	107.00	64.25
C392B	115.00	69.00
C392C	121.00	72.50
C392D	128.00	76.75
C392E	136.00	81.50
C392M	156.00	93.50
C393A	99.00	59.50
C393B	107.00	64.25
C393C	115.00	69.00
C393D	122.00	73.25
C393E	130.00	78.00
C393M	146.00	87.50
C394A	132.00	79.25
C394B	141.00	84.50
C394C	150.00	90.00
C394D	159.00	95.50
C394E	168.00	100.75
C394M	192.00	115.25
C395A	122.00	73.25
C395B	130.00	78.00
C395C	138.00	82.75
C395D	145.00	87.00
C395E	152.00	91.25
C395M	176.00	105.50
C397E	126.00	76.00
C397M	144.00	86.00
C397N	184.00	110.00
C397P	224.00	134.00
C397PA	244.00	146.00
C397PB	260.00	156.00
C397S	166.00	100.00
C397T	204.00	122.00
C398E	140.00	84.00
C398M	160.00	96.00
C398N	204.00	122.00
C398P	248.00	149.00
C398PA	270.00	162.00
C398PB	290.00	174.00
C398S	184.00	110.00
C398T	226.00	136.00
C447N	229.70	137.70
C447P	278.80	167.30
C447PA	304.30	182.60
C447PB	326.40	195.85
C447S	205.70	123.40
C447T	253.30	152.00
C448N	243.00	145.80
C448P	295.20	177.00
C448PA	322.00	193.20
C448PB	345.60	207.35
C448S	217.80	130.70
C448T	268.00	160.80
C501L	280.00	168.00
C501PC	162.00	97.20
C501PD	172.00	103.20
C501PE	184.00	110.40
C501PM	198.00	118.80
C501PN	232.00	139.20
C501PS	214.00	128.40
C501PT	254.00	152.40
C509P	180.00	108.00
C509PA	200.00	120.00
C509PB	220.00	132.00
C509T	160.00	96.00

GE Type	Net Each, Lots of 1-99	100-999
C511A†	$ 3.60	$2.40
C511B†	6.15	4.10
C511C†	9.15	6.10
C511D†	11.85	7.90
C511F†	2.55	1.70
C511G†	4.95	3.30
C511H†	7.65	5.10
C511U†	2.40	1.60

GE Type	Net Each, Lots of 1-9	10-99
C600N	$204.00	$122.40
C600P	226.00	135.60
C600PA	242.00	145.20
C600PB	278.00	166.80
C600PC	296.00	177.60
C600S	194.00	116.40
C600T	214.00	128.40
C601L	358.00	214.80
C601PB	212.00	127.20
C601PC	222.00	133.20
C601PD	234.00	140.40
C601PE	250.00	150.00
C601PM	266.00	159.00
C601PN	304.00	182.40
C601PS	284.00	170.40
C601PT	328.00	196.80
C602L	282.00	169.20
C602LA	298.00	178.80
C602LB	308.00	184.80
C602LC	328.00	196.80
C602LD	350.00	210.00
C602LE	374.00	224.40
C602LM	400.00	240.00
C602LN	460.00	276.00
C602LS	428.00	256.80
C602PT	268.00	160.80
C609P	276.00	165.60
C609PA	304.00	182.40
C609PB	240.00	204.00
C609T	248.00	148.80

GE Type	Net Each, Lots of 1-99	100-999
C611A†	$2.40	$1.60
C611B†	2.60	1.73
C611F†	2.20	1.45
C611G†	2.50	1.67
C611U†	2.10	1.40

GE Type	Net Each, Lots 1-9	10-99
C701L	$430.00	$258.00
C701PB	246.00	147.60
C701PC	260.00	156.00
C701PD	276.00	165.60
C701PE	294.00	176.40
C701PM	314.00	188.40
C701PN	360.00	216.00
C701PS	336.00	201.60
C701PT	390.00	234.00

GE Type	Net Each, Lots of 1-99	100-999
D5E37	$0.75	$0.50
D5E43	1.05	.70
D5E44	.97	.65
D5E45	1.49	.99
D5K1	6.96	4.64
D5K2	2.55	1.70
D13H1	.90	.62
D13H2	.85	.57

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
D13T3	$0.94	$0.63	$0.53
D13T4	1.87	1.26	1.06
D16G6	.45	.30	.25
D16P1	.38	.26	.21
D29E1	.52	.35	.29
D29E1J1	.54	.37	.31
D29E2	.56	.38	.31
D29E2J1	.58	.40	.33
D29E4	.47	.32	.26
D29E4J1	.49	.34	.28
D29E5	.52	.35	.29
D29E5J1	.54	.37	.31

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
D29E6	$0.56	$0.38	$0.31
D29E6J1	.58	.40	.33
D29E7	.63	.42	.35
D29E7J1	.65	.44	.37
D29E9	.88	.59	.49
D29E9J1	.90	.61	.51
D29E10	.95	.63	.53
D29E10J1	.97	.65	.55
D29F1	.29	.20	.17
D29F2	.32	.21	.18
D29F3	.36	.24	.20
D29F4	.41	.27	.23
D29F5	.38	.26	.21
D29F6	.41	.27	.23
D29F7	.45	.30	.25
D32H1	.53	.35	.26
D32H2	.60	.40	.30
D32H3	.66	.44	.33
D32H4	.60	.40	.30
D32H5	.72	.48	.36
D32H6	.78	.52	.39
D32H7	.72	.48	.36
D32H8	.90	.60	.45
D32H9	1.02	.68	.51
D32L1	.69	.41	.34
D32L2	.81	.49	.40
D32L3	.87	.52	.43
D32L4	.60	.36	.30
D32L5	.72	.43	.36
D32L6	.69	.41	.34
D32P1	.264	.175	.145
D32P2	.275	.183	.151
D32P3	.294	.195	.161
D32P4	.308	.204	.169
D32S1	.65	.47	.38
D32S2	.72	.52	.42
D32S3	.85	.61	.49
D32S4	1.04	.75	.61
D32S5	.72	.52	.42
D32S6	.78	.54	.46
D32S7	.94	.68	.55
D32S8	.59	.42	.34
D32S9	.75	.54	.44
D32S10	1.04	.75	.61
D32V1	.76	.52	.43
D32V2	.79	.54	.45
D32V3	.87	.58	.47
D32W7	.54	.36	.27
D32W8	.60	.40	.30
D32W9	.75	.50	.38
D32W10	.98	.65	.49
D32W12	.57	.38	.29
D32W13	.66	.44	.33
D32W14	.75	.50	.38
D33D21	.47	.32	.26
D33D21J1	.49	.34	.28
D33D22	.52	.35	.29
D33D22J1	.54	.37	.31
D33D24	.43	.29	.24
D33D24J1	.45	.31	.26
D33D25	.47	.32	.26
D33D25J1	.49	.34	.28
D33D26	.52	.35	.29
D33D26J1	.54	.37	.31
D33D27	.59	.39	.33
D33D27J1	.61	.41	.35
D33D29	.83	.55	.46
D33D29J1	.85	.57	.48
D33D30	.88	.59	.49
D33D30J1	.90	.61	.51
D34C1	.78	47	.39
D34C2	.81	.54	.44
D34C3	.96	.57	.47
D34C4	.68	.45	.37
D34C5	.81	.48	.40
D34C6	.78	.47	.39
D34J1	.59	.39	.29
D34J2	.66	.44	.33
D34J3	.72	.48	.36
D34J4	.66	.44	.33
D34J5	.78	.52	.39
D34J6	.84	.56	.42
D34J7	.78	.52	.39
D34J8	.96	.64	.48
D34J9	1.08	.72	.54
D40C1*	.64	.42	.35
D40C2*	.89	.59	.49
D40C3*	1.00	.66	.55
D40C4*	.71	.48	.39
D40C5*	1.02	.68	.56
D40C7*	1.02	.68	.56
D40C8*	1.28	.85	.70
D40D1*	.61	.41	.34
D40D2*	.77	.51	.42
D40D3*	.82	.54	.45
D40D4*	.74	.49	.41
D40D5*	.90	.60	.49
D40D7*	.82	.54	.45
D40D8*	1.02	.68	.56
D40D10*	.97	.65	.53
D40D11*	1.12	.75	.62
D40D13*	.82	.54	.45

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
D40D14*	$1.02	$0.68	$0.56
D40E1*	.67	.44	.36
D40E5*	.82	.58	.48
D40E7*	1.07	.71	.59
D40K1*	1.02	.68	.56
D40K2*	1.14	.76	.62
D40N1*	.82	.54	.45
D40N2*	.84	.56	.46
D40N3*	.90	.60	.49
D40N4*	.92	.61	.51
D40N5*	.77	.51	.42
D40P1*	.92	.61	.51
D40P3*	1.02	.68	.56
D40P5*	1.25	.83	.69
D41D1*	.66	.44	.36
D41D2*	.87	.58	.48
D41D4*	.79	.53	.43
D41D5*	1.00	.66	.55
D41D7*	.87	.58	.48
D41D8*	1.13	.75	.62
D41D10*	1.04	.70	.57
D41D11*	1.20	.80	.66
D41D13*	.87	.58	.48
D41D14*	1.10	.73	.60
D41E1*	.72	.48	.39
D41E5*	.92	.61	.50
D41E7*	1.15	.77	.63
D41K1*	1.08	.73	.60
D41K2*	1.20	.82	.67
D41K3*	.93	.63	.52
D41K4*	1.05	.71	.59
D42C1*	.90	.59	.49
D42C2*	.95	.63	.52
D42C3*	1.00	.66	.55
D42C4*	.97	.65	.53
D42C5*	1.02	.68	.56
D42C6*	1.10	.73	.60
D42C7*	1.10	.73	.60
D42C8*	1.17	.78	.64
D42C9*	1.20	.80	.66
D42C10*	1.18	.78	.64
D42C11*	1.23	.82	.67
D42C12*	1.32	.88	.73
D42R1*	1.08	.72	.59
D42R2*	1.13	.75	.62
D42R3*	.90	.61	.50
D42R4*	.95	.65	.53
D43C1*	1.02	.68	.56
D43C2*	1.07	.71	.59
D43C3*	1.12	.75	.62
D43C4*	1.10	.73	.60
D43C5*	1.15	.76	.63
D43C6*, 7*	1.22	.82	.67
D43C8*	1.30	.87	.71
D43C9*	1.33	.89	.73
D43C10*	1.30	.87	.71
D43C11*	1.33	.89	.73
D43C12*	1.41	.94	.78
D44C1*	.97	.65	.53
D44C2*	1.02	.68	.56
D44C3*	1.07	.72	.59
D44C4*	1.05	.70	.57
D44C5*	1.10	.73	.60
D44C6, 7*	1.17	.78	.64
D44C8*	1.25	.84	.69
D44C9*	1.28	.86	.70
D44C10*	1.25	.84	.69
D44C11*	1.30	.87	.71
D44C12*	1.37	.91	.75
D44E1*	1.33	.90	.74
D44E2*	1.48	1.00	.83
D44E3*	1.63	1.11	.91
D44H1*	1.53	1.02	.84
D44H2*	1.58	1.05	.87
D44H4*	1.61	1.07	.88
D44H5*	1.66	1.10	.91
D44H7*	1.68	1.12	.92
D44H8*	1.73	1.16	.95
D44H10*	1.78	1.19	.98
D44H11*	1.89	1.26	1.04
D44Q1*	1.54	1.02	.84
D44Q3*	1.64	1.09	.90
D44Q5*	1.74	1.15	.95
D44R1*	1.28	.85	.70
D44R2*	1.38	.92	.76
D44R3*	1.38	.92	.76
D44R4*	1.48	.99	.82
D44R5*	1.22	.82	.67
D44R6*	1.33	.88	.73
D44R7*	1.43	.95	.79
D44R8*	1.58	1.05	.87
D45C1*	1.10	.73	.60
D45C2*	1.15	.77	.63
D45C3*	1.20	.80	.66
D45C4*	1.18	.78	.64
D45C5*	1.23	.82	.67
D45C6*	1.30	.87	.71
D45C7*	1.30	.87	.71
D45C8*	1.38	.92	.76
D45C9*	1.40	.94	.77
D45C10*	1.38	.92	.76
D45C11*	1.43	.95	.78

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. †Prices include mounting hardware. For insulating hardware, add **$0.10** per unit, any quantity.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
D45C12*	$1.48	$0.99	$0.82
D45E1*	1.58	1.07	.88
D45E2*	1.73	1.17	.97
D45E3*	1.88	1.28	1.05
D45H1*	1.78	1.19	.98
D45H2*	1.84	1.22	1.01
D45H4*	1.86	1.24	1.02
D45H5*	1.91	1.27	1.05
D45H7*	2.09	1.39	1.15
D45H8*	2.29	1.53	1.26
D45H9*	2.14	1.43	1.18
D45H10*	2.29	1.53	1.26
D45H11*	2.60	1.73	1.42
D45H12*	2.45	1.63	1.34
D56W1	6.06	4.02	.....
D56W2	7.30	5.40	.....
DA1701	.30	.20	.14*
DA1702	.26	.17	.12*
DA1703	.24	.16	.11*
DA1704	.23	.15	.10*
DE104	2.68	1.79	.....
DE110	1.22	.82	.....
DE111	1.44	.96	.....
DE112	1.58	1.06	.....
DE113	.94	.62	.....
DE114	1.44	.96	.....
DE115	1.68	1.12	.....
DE125	2.43	1.62	.....

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
DT230A	$0.26	$0.15	$0.10*
DT230B	.30	.20	.14*
DT230F	.24	.13	.08*
DT230G	.29	.17	.11*
DT230H	.36	.24	.17*
DT230H1	.33	.22	.16*
DZ800	.14	.09	.06*
DZ805	.15	.10	.07*
DZ806	.17	.11	.08*
GER4001	.29	.22	.15
GER4002	.33	.25	.18
GER4003	.35	.27	.19
GER4004	.42	.32	.22
GER4005	.54	.38	.30
GER4006	.75	.50	.40
GER4007	.82	.52	.43
GET706	.27	.17	.15
GET708	.37	.22	.20
GET914	.45	.27	.24
GET929	.37	.22	.20
GET930	.37	.22	.20
GET2221	.30	.20	.16
GET2221A	.41	.25	.22
GET2222	.41	.25	.22
GET2222A	.46	.28	.25
GET2904	.43	.27	.23
GET2905	.43	.27	.23
GET2906	.34	.21	.18
GET2907	.34	.21	.18
GET3013	.57	.38	.34
GET3014	.67	.44	.40
GET3563	.34	.23	.19
GET3638	.24	.18	.14
GET3638A	.27	.20	.16
GET3646	.27	.20	.16
GET3903	.55	.39	.29
GET3904	.55	.39	.29
GET3905	.55	.39	.29
GET3906	.55	.39	.29
GET4870	.75	.50	.45
GET4871	.68	.45	.40
GET5305	.45	.30	.25
GET5306	.43	.29	.24
GET5306A	.50	.33	.28
GET5307	.47	.32	.26
GET5308	.52	.35	.29
GET5308A	.59	.39	.33
GET5457	.80	.54	.43
GET5458	.73	.49	.39
GET5459	.80	.54	.43

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
H11A1	$3.35	$2.20	$1.75
H11A2	2.25	1.50	1.20
H11A3	2.50	1.75	1.50
H11A4	1.95	1.25	1.10
H11A5	1.30	.97	.75

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
H11A10	$1.40	$1.07	$ .85
H11AA1	3.38	2.25	1.98
H11AA2	2.70	2.03	1.65
H11B1	3.20	2.20	1.85
H11B2	2.95	1.95	1.62
H11B3	2.75	1.65	1.33
H11C1	4.00	3.36	2.95
H11C2	3.35	2.80	2.50
H11C3	1.81	1.62	1.14
H11C4	4.60	3.85	3.15
H11C5	4.00	3.35	2.75
H11C6	1.99	1.79	1.19
H11D1	3.75	2.99	2.50
H11D2	2.78	2.22	1.85
H11D3	2.48	1.98	1.65
H11D4	2.40	1.92	1.60
H13A1	2.50	1.70	1.50
H13A2	2.25	1.50	1.35
H13B1	2.60	1.80	1.60
H13B2	2.35	1.60	1.45
H15A1	2.50	1.70	1.50
H15A2	2.25	1.50	1.35
H15B1	2.60	1.80	1.60
H15B2	2.35	1.60	1.45
H17A1	2.15	1.40	1.25
H17B1	2.25	1.50	1.35
HS5305	.47	.32	.27
HS5306	.45	.31	.26
HS5307	.49	.34	.28
HS5308	.54	.37	.31
HS5810	.49	.34	.28
HS5811	.54	.37	.31
HS5812	.54	.37	.31
HS5813	.58	.40	.33
HS5814	.45	.31	.26
HS5815	.49	.34	.28
HS5816	.49	.34	.28
HS5817	.54	.37	.31
HS5818	.54	.37	.31
HS5819	.58	.40	.33
HS5820	.85	.57	.48
HS5821	.90	.61	.51
HS5822	.90	.61	.51
HS5823	.97	.65	.55
LED55B	2.46	2.15	1.98
LED55BF	2.46	2.15	1.98
LED55C	3.10	2.70	2.50
LED55CF	3.10	2.70	2.50
LED56	1.94	1.69	1.56
LED56F	1.94	1.69	1.56
L8A	7.00	4.65	.....
L8B	11.85	7.90	.....
L8F	4.90	3.25	.....
L8G	9.45	6.30	.....
L8U	4.50	3.00	.....
L9A	7.65	5.10	.....
L9B	13.05	8.70	.....
L9F	5.40	3.60	.....
L9G	10.45	6.95	.....
L9U	4.95	3.30	.....
L14F	5.50	3.50	1.85
L14G1	2.50	1.85	1.50
L14G2	2.25	1.70	1.40
L14H1	.75	.50	.35
L14H2	.90	.60	.42
L14H3	1.05	.69	.48
L14H4	.64	.43	.30
L811A†	8.50	5.45	.....
L811B†	13.35	8.65	.....
L811F†	6.40	4.00	.....
L811G†	10.95	7.05	.....
L811U†	6.00	3.75	.....
L911A†	9.15	5.85	.....
L911B†	14.55	9.45	.....
L911F†	6.90	4.35	.....
L911G†	11.95	7.70	.....
L911U†	6.45	4.05	.....
MA1701	.31	.21	.15*
MA1702	.27	.18	.13*
MA1703	.25	.17	.12*
MA1704	.24	.15	.11*
MPD200	1.21	.81	.38*
MPD201	1.05	.65	.34*
MPD202	.99	.55	.30*
MPD203	.70	.45	.27*
MPD300	1.49	.99	.45*
MPD301	1.15	.70	.41*
MPD302	1.04	.61	.37*
MPD400	1.62	1.08	.63*
MPD401	1.30	.86	.50*
MPD402	1.20	.75	.47*
RA1	6.95	4.63	.....
RA1A	12.24	8.15	.....
RA1B	21.76	14.50	.....
RA1C	46.17	30.78	.....
RA2	12.24	8.15	.....
RA2A	34.70	23.13	.....
RA2B	82.34	54.89	.....
RA3	12.75	8.50	.....
RA3A	36.15	24.10	.....
RA3B	89.82	59.88	.....

GE Type	Net Each, Lots 1-99	100-
S100	On Request	
S200	On Request	
SC35B	See SC136B	
SC35D	See SC136D	
SC36B	See SC136B	
SC36D	See SC136D	

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
SC136A	$0.86	$0.60	$0.49
SC136B	.91	.63	.52
SC136D	1.09	.77	.63
SC137A	1.03	.68	.56
SC137B	1.09	.72	.59
SC137D	1.31	.88	.72
SC141B	1.50	1.00	.88
SC141D	1.74	1.16	1.04
SC141E	2.49	1.66	1.49
SC141M	3.24	2.16	1.94
SC142B	1.62	1.18	1.00
SC142D	1.88	1.37	1.16
SC142E	2.69	1.97	1.67
SC142M	3.48	2.44	2.16
SC146B	1.88	1.25	1.12
SC146D	2.31	1.54	1.37
SC146E	3.31	2.21	1.95
SC146M	4.10	2.73	2.42
SC151B	2.50	1.67	1.50
SC151D	3.08	1.98	1.78
SC151E	3.40	2.25	2.00
SC151M	4.60	3.09	2.78

GE Type	Net Each, Lots 1-99	100-999
SC240B*	$3.23	$2.16
SC240B2	4.62	3.08
SC240B3	4.62	3.08
SC240B12*	3.23	2.16
SC240B13*	4.05	2.70
SC240B22	4.62	3.08
SC240B23	5.78	3.85
SC240B32	4.62	3.08
SC240B33	5.78	3.85
SC240D*	4.15	2.76
SC240D2	5.53	3.69
SC240D3	5.53	3.69
SC240D12*	4.15	2.76
SC240D13*	5.18	3.45
SC240D22	6.09	3.69
SC240D23	6.92	4.61
SC240D32	6.09	3.69
SC240D33	6.92	4.61
SC240E*	4.64	3.09
SC240E2	6.03	4.02
SC240E3	6.03	4.02
SC240E12*	4.64	3.09
SC240E13*	5.80	3.86
SC240E22	6.03	4.02
SC240E23	7.54	5.02
SC240E32	6.03	4.02
SC240E33	7.54	5.02
SC240M	5.08	3.41
SC240M2	6.33	4.24
SC240M3	6.33	4.24
SC240M12	5.08	3.41
SC240M13	6.09	4.08
SC240M22	6.33	4.24
SC240M23	7.70	5.16
SC240M32	6.33	4.24
SC240M33	7.70	5.16
SC241B	2.84	1.89
SC241B12	2.84	1.89
SC241B13	3.55	2.38
SC241D	3.75	2.50
SC241D12	3.75	2.50
SC241D13	4.70	3.12
SC241E	4.25	2.83
SC241E12	4.25	2.83
SC241E13	5.31	3.54

GE Type	Net Each, Lots 1-99	100-999
SC241M	$4.59	$3.07
SC241M12	4.59	3.07
SC241M13	5.58	3.74
SC254B*	3.87	2.58
SC245B2	5.20	3.47
SC245B3	5.20	3.47
SC245B12*	3.87	2.58
SC245B13*	4.84	3.23
SC245B22	5.20	3.47
SC245B23	6.50	4.34
SC245B32	5.20	3.47
SC245B33	6.50	4.34
SC245D*	4.57	3.05
SC245D2	5.89	3.93
SC245D3	5.89	3.93
SC245D12*	4.57	3.05
SC245D13*	5.71	3.81
SC245D22	5.89	3.93
SC245D23	7.36	4.91
SC245D32	5.89	3.93
SC245D33	7.36	4.91
SC245E*	5.48	3.65
SC245E2	6.80	4.54
SC245E3	6.80	4.54
SC245E12*	5.48	3.65
SC245E13*	6.86	4.57
SC245E22	6.80	4.54
SC245E23	8.51	5.67
SC245E32	6.80	4.54
SC245E33	8.51	5.67
SC245M	5.92	3.76
SC245M2	7.34	4.64
SC245M3	7.34	4.64
SC245M12*	5.92	3.76
SC245M13*	5.92	3.76
SC245M22	7.34	4.64
SC245M23	8.80	5.89
SC245M32	7.34	4.64
SC245M33	8.80	5.89
SC246B	3.50	2.33
SC246B12	3.50	2.33
SC246B13	4.37	2.92
SC246D	4.19	2.79
SC246D12	4.19	2.79
SC246D13	5.24	3.50
SC246E	5.10	3.40
SC246E12	5.10	3.40
SC246E13	6.38	4.25
SC246M	5.51	3.51
SC246M12	5.51	3.51
SC246M13	6.89	4.61
SC250B*	4.10	2.73
SC250B2	5.42	3.61
SC250B3	5.42	3.61
SC250B12*	4.10	2.73
SC250B13*	5.12	3.41
SC250B22	5.42	3.61
SC250B23	6.77	4.52
SC250B32	5.42	3.61
SC250B33	6.77	4.52
SC250D*	4.82	3.21
SC250D2	6.14	4.10
SC250D3	6.14	4.10
SC250D12*	4.82	3.21
SC250D13*	6.03	4.02
SC250D22	6.14	4.10
SC250D23	7.68	5.12
SC250D32	6.14	4.10
SC250D33	7.68	5.12
SC250E*	5.80	3.86
SC250E2	7.12	4.75
SC250E3	7.12	4.75
SC250E12*	5.80	3.86
SC250E13*	7.25	4.83
SC250E22	7.12	4.75
SC250E23	8.90	5.93
SC250E32	7.12	4.75
SC250E33	8.90	5.93
SC250M*	6.26	3.97
SC250M2	7.69	4.85
SC250M3	7.69	4.85
SC250M12*	6.26	3.97
SC250M13*	7.82	5.24
SC250M22	7.69	4.85
SC250M23	9.61	6.44
SC250M32	7.69	4.85
SC250M33	9.61	6.44
SC251B	3.72	2.48
SC251B12	3.72	2.48
SC251B13	4.47	3.10
SC251D	4.44	2.96
SC251D12	4.44	2.96
SC251D13	5.55	3.71
SC251E	5.42	3.61
SC251E12	5.42	3.61
SC251E13	6.77	4.52
SC251M	5.85	3.72
SC251M12	5.85	3.72
SC251M13	7.32	4.90
SC260B*	4.90	3.55
SC260B2	6.05	4.41

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. †Prices include mounting hardware. For insulating hardware, add **$0.10** per unit, any quantity. *Larger quantities available on request.

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GE Type	Net Each, Lots 1-99	100-999
SC260B3	$ 6.05	$4.41
SC260B12*	4.90	3.55
SC260B13*	6.12	4.44
SC260B22	6.05	4.41
SC260B23	7.56	5.51
SC260B32	6.05	4.41
SC260B33	7.56	5.51
SC260D*	5.79	4.21
SC260D2	6.98	5.06
SC260D3	6.98	5.06
SC260D12*	5.79	4.21
SC260D13*	7.23	5.26
SC260D22	6.98	5.06
SC260D23	8.73	6.33
SC260D32	6.98	5.06
SC260D33	8.73	6.33
SC260E*	6.80	4.96
SC260E2	7.87	5.70
SC260E3	7.87	5.70
SC260E12*	6.80	4.96
SC260E13*	8.50	6.20
SC260E22	7.87	5.70
SC260E23	9.83	7.13
SC260E32	7.87	5.70
SC260E33	9.83	7.13
SC260M*	7.12	5.17
SC260M2	8.29	6.03
SC260M3	8.29	6.03
SC260M12*	7.12	5.17
SC260M13*	8.90	6.46
SC260M22	8.29	6.03
SC260M23	10.36	7.54
SC260M32	8.29	6.03
SC260M33	10.36	7.54
SC261B	4.56	3.33
SC261B12	4.56	3.33
SC261B13	5.70	4.16
SC261D	5.45	3.97
SC261D12	5.45	3.97
SC261D13	6.81	4.96
SC261E	6.46	4.70
SC261E12	6.46	4.70
SC261E13	8.08	5.88
SC261M	6.80	4.95
SC261M12	6.80	4.95
SC261M13	8.50	6.19
SC265B	5.97	4.34
SC265B2, 3	6.39	4.85
SC265D	7.10	5.16
SC265D2, 3	7.52	5.67
SC265E	7.81	5.68
SC265E2, 3	8.20	6.16
SC265M	8.79	6.40
SC265M2, 3	9.21	6.82
SC266B	5.64	4.10
SC266D	6.77	4.92
SC266E	7.45	5.41
SC266M	8.46	6.16

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
ST2	$0.66	$0.44	$0.34
ST4	.60	.46	.36
STB567	.48	.32	.22*
STB568	.64	.43	.33*
STB569	.81	.54	.44*

GE Type	Net Each, Lots of 1-99	100-999
TD9	$ 7.43	$ 4.96
TD261	16.38	10.92
TD261A	26.25	17.50
TD262	16.38	10.92
TD262A	26.25	17.50
TD263	13.15	8.77
TD263A	19.63	13.09

GE Type	Net Each, Lots 1-99	100-999
TD263B	$26.25	$17.50
TD264	16.38	10.92
TD264A	26.25	17.50
TD265	16.38	10.92
TD265A	26.25	17.50
TD266	16.38	10.92
TD266A	26.25	17.50

GE Type	Net Each, Lots of 1-9	10-99
TD401-TD456A	Contact Factory	

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
T1S62	$0.37	$0.32	$0.26
T1S63	.32	.28	.23

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
V22ZA1	$1.04	$0.73	$0.57
V22ZA3	1.75	1.20	.98
V24ZA1	1.14	.80	.63
V24ZA	1.93	1.32	1.08
V27ZA1	1.04	.73	.57
V27ZA4	1.75	1.20	.98
V33ZA1	1.04	.73	.57
V33ZA5	1.75	1.20	.98
V39ZA1	1.04	.73	.57
V39ZA6	1.75	1.20	.98
V40LA2A	1.04	.73	.57
V40LA2B	1.20	.91	.67
V47ZA1	1.04	.73	.57
V47ZA7	1.75	1.20	.98
V56ZA2	1.04	.73	.57
V56ZA8	1.75	1.20	.98
V60LA3A	1.10	.84	.62
V60LA3B	1.28	.97	.71
V68ZA2	1.04	.73	.57
V68ZA10	1.75	1.20	.98
V82ZA2	1.04	.73	.57
V82ZA12	1.75	1.20	.98
V95LA7A	1.60	1.22	.90
V95LA7B	1.75	1.20	.98
V100ZA3	1.04	.73	.57
V100ZA15	1.75	1.20	.98
V120ZA1	1.04	.73	.57
V120ZA6	1.75	1.20	.98
V130LA1	1.23	.82	.62*
V130LA2	1.38	.92	.69*
V130LA10A	1.75	1.20	.98
V130LA20A	2.60	1.98	1.46
V130LA20B	2.85	2.17	1.60
V130PA10A	3.94	2.63	2.10
V130PA20A	4.70	3.14	2.50
V130PA20B	4.95	3.30	2.64
V130PA20C	5.18	3.45	2.76
V150LA1	1.23	.82	.62*
V150LA2	1.38	.92	.69*
V150LA10A	1.75	1.20	.98
V150LA20A	2.60	1.98	1.46
V150LA20B	2.85	2.17	1.60
V150MA1A	1.05	.65	.40
V150MA2B	1.16	.72	.44
V150PA10A	3.94	2.63	2.10
V150PA20A	4.70	3.14	2.50
V150PA20B	4.95	3.30	2.64
V150PA20C	5.18	3.45	2.76
V150ZA1	1.04	.73	.57
V150ZA8	1.75	1.20	.98
V180MA1A	1.05	.65	.40
V180MA3B	1.16	.72	.44
V180ZA1	1.04	.73	.57
V180ZA10	1.75	1.20	.98
V220MA2A	1.22	.75	.46
V220MA4B	1.34	.83	.51
V250LA2	1.53	1.02	.77*
V250LA4	1.77	1.18	.89*
V250LA15A	2.18	1.65	1.22
V250LA20A	2.60	1.98	1.46
V250LA40A	4.30	3.27	2.40
V250LA40B	4.73	3.59	2.65
V250PA10A	3.94	2.63	2.10
V250PA20A	4.70	3.14	2.50
V250PA40A	6.23	4.16	3.32

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
V250PA40B	$6.55	$4.37	$3.49
V250PA40C	6.86	4.57	3.66
V270MA2A	1.22	.75	.46
V270MA4B	1.34	.83	.51
V275LA2	1.53	1.02	.77*
V275LA4	1.77	1.18	.89*
V275LA15A	2.18	1.65	1.22
V275LA20A	2.60	1.98	1.46
V275LA40A	4.30	3.27	2.40
V275LA40B	4.73	3.59	2.65
V275PA10A	3.94	2.63	2.10
V275PA20A	4.70	3.14	2.50
V275PA40A	6.23	4.16	3.32
V275PA40B	6.55	4.37	3.49
V275PA40C	6.86	4.57	3.66
V300LA2	1.53	1.02	.77*
V300LA4	1.77	1.18	.89*
V330MA2A	1.51	.93	.58
V330MA5B	1.66	1.02	.64
V390MA3A	1.51	.93	.58
V390MA6B	1.66	1.02	.64
V420LB20A	3.93	2.98	2.20
V420LB40A	5.58	4.24	3.12
V420LB40B	6.13	4.66	3.43
V420PA20A	6.35	4.23	3.38
V420PA40A	7.88	5.25	4.20
V420PA40B	8.28	5.52	4.12
V420PA40C	8.66	5.78	4.62
V430MA3A	1.51	.93	.58
V430MA7B	1.66	1.02	.64
V460LB20A	3.93	2.98	2.20
V460LB40A	5.58	4.24	3.12
V460LB40B	6.13	4.66	3.43
V460PA20A	6.35	4.23	3.38
V460PA40A	7.88	5.25	4.20
V460PA40B	8.28	5.52	4.12
V460PA40C	8.66	5.78	4.62
V480LB20A	3.93	2.98	2.20
V480LB40A	5.58	4.24	3.12
V480LB80A	7.90	5.33	4.74
V480LB80B	8.97	6.25	5.03
V480PA20A	6.35	4.23	3.38
V480PA40A	7.88	5.25	4.20
V480PA80A	10.94	7.29	5.83
V480PA80B	11.59	7.73	6.18
V480PA80C	12.04	8.03	6.42
V510LB20A	4.20	3.19	2.35
V510LB40A	5.85	4.45	3.28
V510LB80A	9.25	7.03	5.18
V510LB80B	10.18	7.73	5.69
V510PA20A	6.62	4.41	3.53
V510PA40A	8.15	5.43	4.34
V510PA80A	11.21	7.47	5.98
V510PA80B	11.77	7.85	6.28
V510PA80C	12.33	8.22	6.58
V550LB20A	4.20	3.19	2.35
V550LB40A	5.85	4.45	3.28
V550LB80A	9.25	7.03	5.18
V550LB80B	10.18	7.73	5.69
V550PA20A	6.62	4.41	3.53
V550PA40A	8.15	5.43	4.34
V550PA80A	11.21	7.47	5.98
V550PA80B	11.77	7.85	6.28
V550PA80C	12.33	8.22	6.58
V575LB20A	4.20	3.19	2.35
V575LB40A	5.85	4.45	3.28
V575LB80A	9.25	7.03	5.18
V575LB80B	10.18	7.73	5.69
V575PA20A	6.62	4.41	3.53
V575PA40A	8.15	5.43	4.34
V575PA80A	11.21	7.47	5.98
V575PA80B	11.77	7.85	6.28
V575PA80C	12.33	8.22	6.58

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
V1000LB-80A	$12.75	$8.50	$7.38
V1000LB-160A	20.00	15.20	11.20
V1000LB-160B	22.00	16.72	12.32

GE Type	Net Each, Lots of 1-24	25-99	100-499
W2AA25C	$26.20	$23.60	$19.65
W2AA25E	32.60	29.34	24.45
W2BA25C	31.50	28.35	23.60
W2BA25E	44.50	37.70	33.40
W2BC25C	31.50	28.35	23.60
W2BC25E	44.50	37.70	33.40
W2BE25C	33.80	30.42	25.35
W2BE25E	47.60	41.10	35.85
W2BH25C	48.40	42.56	36.30
W2BH25E	59.30	53.50	44.55
W2BJ25C	33.80	30.42	25.35
W2BJ25E	47.60	41.10	35.85
W2BK25C	31.50	28.35	23.60
W2BK25E	44.50	37.70	33.40
W2CA25C	26.20	23.60	19.65
W2CA25E	32.60	29.34	24.45
W2DA25C	15.50	13.95	11.60
W2DA25E	19.40	16.10	14.55
W2DC25C	26.20	23.60	19.65
W2DC25E	32.60	29.34	24.45
WV2AA-25C	27.90	25.10	20.90
WV2AA-25E	34.30	30.90	25.70
WV2BA-25C	33.20	29.90	24.90
WV2BA-25E	46.20	40.10	34.65
WV2BC-25C	33.20	29.90	24.90
WV2BC-25E	46.20	40.10	34.65
WV2BE-25C	35.50	31.95	26.60
WV2BE-25E	49.50	43.05	37.10
WV2BH-25C	50.10	44.60	37.60
WV2BH-25E	61.10	55.00	45.80
WV2BJ25C	35.50	31.95	26.60
WV2BJ25E	49.50	43.05	37.10
WV2BK-25C	33.20	29.90	24.90
WV2BK-25E	46.20	40.10	34.65
WV2CA-25C	27.90	25.10	20.90
WV2CA-25E	34.30	30.90	25.70
WV2DA-25C	17.20	15.50	12.90
WV2DA-25E	20.10	18.00	15.80
WV2DC-25C	27.90	25.10	20.90
WV2DC-25E	34.30	30.90	25.70

OUR STOCKS ARE COMPLETE AND UP TO DATE.

*Prices include mounting hardware. For insulating hardware, add $0.05 per unit, any quantity. *Larger quantity prices available on request.

DIGITAL HIGH LEVEL LOGIC

Choice of three temperature ranges and two Vcc values. Types listed with suffix **-5** have Vcc = 12 V nom. and −30° C to +85° C temperature range; types listed with suffix **-1** have Vcc = 12 V nom. and −55° C to +125° C temperature range. For Vcc = 15 V nom. and temperature range of −30° C to +70° C, specify suffix **H-5** (ITT301**H-5**D) or for temperature range of −55° C to +125° C, specify suffix **H-1** (ITT301**H-1**D). Prices are the same.

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT301-1D	Dual 5 Buffer	1.58	1.26	.99
ITT301H-1D		1.58	1.26	.99
ITT301-5D		1.13	.88	.70
ITT301H-5D		1.13	.88	.70
ITT302-1D	Quad 2 Buffer	2.40	2.05	1.60
ITT302H-1D		2.40	2.05	1.60
ITT302-5D		1.79	1.39	1.11
ITT302H-5D		1.79	1.39	1.11
ITT303-1D	Quad 2 Buffer	2.40	2.05	1.60
ITT303H-1D		2.40	2.05	1.60
ITT303-5D		1.79	1.39	1.11
ITT303H-5D		1.79	1.39	1.11
ITT311-1D	MS FF	2.30	1.85	1.42
ITT311H-1D		2.30	1.85	1.42
ITT311-5D		1.55	1.36	1.09
ITT311H-5D		1.55	1.36	1.09
ITT312-1D	Dual JK FF	3.66	2.93	2.29
ITT312H-1D		3.66	2.93	2.29
ITT312-5D		2.64	2.05	1.63
ITT312H-5D		2.64	2.05	1.63
ITT321-1D	Quad 2 Gate	1.50	1.20	.94
ITT321H-1D		1.50	1.20	.94
ITT321-5D		1.08	.84	.67
ITT321H-5D		1.08	.84	.67
ITT322-1D	Dual 5 Gate	1.50	1.20	.94
ITT322H-1D		1.50	1.20	.94
ITT322-5D		1.08	.84	.67
ITT322H-5D		1.08	.84	.67
ITT323-1D	Quad 2 Gate	1.50	1.20	.94
ITT323H-1D		1.50	1.20	.94
ITT323-5D		1.08	.84	.67
ITT323H-5D		1.08	.84	.67
ITT324-1D	Quad 2 Gate	1.50	1.20	.94
ITT324H-1D		1.50	1.20	.94
ITT324-5D		1.08	.84	.67
ITT324H-5D		1.08	.84	.67
ITT325-1D	Dual 2/3 Gate	1.50	1.20	.94
ITT325H-1D		1.50	1.20	.94
ITT325-5D		1.08	.84	.67
ITT325H-5D		1.08	.84	.67
ITT326-1D	Dual 2/3 Gate	1.50	1.20	.94
ITT326H-1D		1.50	1.20	.94
ITT326-5D		1.08	.84	.67
ITT326H-5D		1.08	.84	.67
ITT332-1D	Quad Inverter	1.89	1.51	1.18
ITT332H-1D		1.89	1.51	1.18
ITT332-5D		1.36	1.06	.84
ITT332H-5D		1.36	1.06	.84
ITT333-1D	Quad Inverter	1.89	1.51	1.18
ITT333H-1D		1.89	1.51	1.18
ITT333-5D		1.36	1.06	.84
ITT333H-5D		1.36	1.06	.84
ITT334-1D	Hex Inverter	1.89	1.51	1.18
ITT334H-1D		1.89	1.51	1.18
ITT334-5D		1.36	1.06	.84
ITT334H-5D		1.36	1.06	.84
ITT335-1D	Hex Inverter	1.89	1.51	1.18
ITT335H-1D		1.89	1.51	1.18
ITT335-5D		1.36	1.06	.84
ITT335H-5D		1.36	1.06	.84
ITT342-1D	Dual I Shot	3.29	2.63	2.06
ITT342H-1D		3.29	2.63	2.06
ITT342-5D		2.37	1.84	1.47
ITT342H-5D		2.37	1.84	1.47
ITT370-1D	Quad D FF	5.21	4.16	3.26
ITT370H-1D		5.21	4.16	3.26
ITT370-5D		3.75	2.91	2.32
ITT370H-5D		3.75	2.91	2.32
ITT371-1D	Decade Counter	6.02	4.82	3.72
ITT371H-1D		6.02	4.82	3.72
ITT371-5D		3.90	2.76	2.47
ITT371H-5D		3.90	2.76	2.47
ITT372-1D	Div. X 16 Cntr.	6.02	4.82	3.72
ITT372H-1D		6.02	4.82	3.72
ITT372-5D		3.90	2.76	2.47
ITT372H-5D		3.90	2.76	2.47
ITT380-1D	BCD-Dec. Cntr.	11.70	9.36	7.33
ITT380H-1D		11.70	9.36	7.33
ITT380-5D		8.42	6.55	5.23
ITT380H-5D		8.42	6.55	5.23
ITT381-1D	BCD-Dec. Decoder	9.15	7.32	5.73
ITT381H-1D		9.15	7.32	5.73
ITT381-5D		6.59	5.12	4.09
ITT381H-5D		6.59	5.12	4.09

DTL SERIES

Operating Temperature: −55° C to +125° C, types with suffix **-1**; 0° C to + 75° C, types with suffix **-5**. Packages: plastic DIP, suffix **N**; ceramic DIP, suffix **D**.

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT930-1D	Dual 4 Gate	$3.84	2.75	2.50
ITT930-5D		.72	.50	.48
ITT930-5N		.63	.44	.41
ITT932-1D	Dual 4 Buffer	3.84	2.75	2.50
ITT932-5D		.72	.50	.48
ITT932-5N		.63	.44	.41
ITT933-1D	Dual 4 Extender	3.84	2.75	2.50
ITT933-5D		.72	.50	.48
ITT933-5N		.63	.44	.41
ITT935-1D	Hex Inverter	4.22	3.45	2.75
ITT935-5D		.72	.50	.48
ITT935-5N		.68	.47	.45
ITT936-1D	Hex Inverter	4.22	3.45	2.75
ITT936-5D		.72	.50	.48
ITT936-5N		.68	.47	.45
ITT937-1D	Hex Inverter	4.22	3.45	2.75
ITT937-5D		.72	.50	.48
ITT937-5N		.68	.47	.45
ITT938-1D	Hex Inverter	4.22	3.45	2.75
ITT938-5D		.72	.50	.48
ITT938-5N		.68	.47	.45
ITT941-1D	1 Shot Multivibrator	12.00	9.85	7.90
ITT941-5D		6.65	5.30	4.40
ITT941-5N		3.80	2.80	1.80
ITT944-1D	Dual 4 Gate	3.84	2.75	2.50
ITT944-5D		.72	.50	.48
ITT944-5N		.63	.44	.41
ITT945-1D	RS or JK FF	5.06	4.13	3.31
ITT945-5D		1.03	.82	.67
ITT945-5N		.90	.71	.57
ITT946-1D	Quad 2 Gate	3.84	2.75	2.50
ITT946-5D		.72	.50	.48
ITT946-5N		.63	.44	.41
ITT948-1D	RS or JK FF	5.06	4.13	3.31
ITT948-5D		1.03	.82	.67
ITT948-5N		.90	.71	.57
ITT949-1D	Quad 2 Gate	3.84	2.75	2.50
ITT949-5D		.72	.50	.48
ITT949-5N		.63	.44	.41
ITT951-1D	1 Shot Multivibrator	12.00	9.85	7.90
ITT951-5D		6.65	5.30	4.40
ITT951-5N		3.80	2.80	1.80
ITT961-1D	Dual 4 Gate	3.84	2.75	2.50
ITT961-5D		.72	.50	.48
ITT961-5N		.63	.44	.41
ITT962-1D	Triple 3 Gate	3.84	2.75	2.50
ITT962-5D		.72	.50	.48
ITT962-5N		.63	.44	.41
ITT963-1D	Triple 3 Gate	3.84	2.75	2.50
ITT963-5D		.72	.50	.48
ITT963-5N		.58	.40	.38
ITT1800-1D	Dual 6 Gate	3.84	2.75	2.50
ITT1800-5D		.72	.50	.48
ITT1800-5N		.63	.44	.41
ITT1806-1D	Quad 2 Gate	5.06	4.13	3.31
ITT1806-5D		1.03	.82	.67
ITT1806-5N		.90	.71	.57
ITT1807-1D	Quad 2 Gate	5.06	4.13	3.31
ITT1807-5D		1.03	.82	.67
ITT1807-5N		.90	.71	.57
ITT1808-1D	Quad 2 Gate	5.06	4.13	3.31
ITT1808-5D		1.03	.82	.67
ITT1808-5N		.90	.71	.57
ITT9093-1D	Dual JK FF	6.33	5.19	4.16
ITT9093-5D		1.46	1.19	.97
ITT9093-5N		1.28	1.11	.89
ITT9094-1D	Dual JK FF	6.33	5.19	4.16
ITT9094-5D		1.46	1.19	.97
ITT9094-5N		1.28	1.11	.89
ITT9097-1D	Dual JK FF	6.33	5.19	4.16
ITT9097-5D		1.46	1.19	.97
ITT9097-5N		1.28	1.11	.89
ITT9099-1D	Dual JK FF	6.33	5.19	4.16
ITT9099-5D		1.46	1.19	.97
ITT9099-5N		1.28	1.11	.89
ITT9I09-1D	Hex Inverter	1.89	1.51	1.18
ITT9I09-5D		1.36	1.06	.84
ITT9109-5N		.97	.78	.62
ITT9112-1D	Hex Inverter	1.89	1.51	1.18
ITT9112-5D		1.36	1.06	.84
ITT9112-5N		.97	.78	.62

TTL DIGITAL

ITT7400 Series operating temperature 0° C to +75° C in plastic DIP (suffix **N**); and ceramic DIP (suffix **J**) available.

ITT5400 Series operating temperature of −55° C to ±125° C and in same packages as ITT7400 Series.

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT5400J	Quad 2 Gate	3.05	2.45	2.05
ITT7400J		.75	.60	.50
ITT7400N		.60	.48	.40
ITT5401J	Quad 2 Gate	3.05	2.45	2.05
ITT7401J		.75	.60	.50
ITT7401N		.60	.48	.40
ITT5402J	Quad 2 gate	3.05	2.45	2.05
ITT7402J		.75	.60	.50
ITT7402N		.60	.48	.40
ITT5403J	Quad 2 Gate	3.05	2.45	2.05
ITT7403J		.75	.60	.50
ITT7403N		.60	.48	.40
ITT5404J	Hex Inverter	3.80	3.05	2.55
ITT7404J		.93	.74	.62
ITT7404N		.75	.60	.50
ITT5405J	Hex Inverter	3.80	3.05	2.55
ITT7405J		.93	.74	.62
ITT7405N		.75	.60	.50
ITT5406J	Hex Inverter	8.00	6.40	5.30
ITT7406J		4.00	3.20	2.65
ITT7406N		3.30	2.65	2.15
ITT5407J	Hex Buffer/Driver	8.00	6.40	5.30
ITT7407J		4.00	3.20	2.65
ITT7407N		3.30	2.65	2.15
ITT5408J	Quad 2 Gate	3.95	3.20	2.65
ITT7408J		.98	.78	.65
ITT7408N		.78	.63	.52
ITT5409J	Quad 2 Gate	3.95	3.20	2.65
ITT7409J		.98	.78	.65
ITT7409N		.78	.63	.52
ITT5410J	Triple 3 Gate	3.05	2.45	2.05
ITT7410J		.75	.60	.50
ITT7410N		.60	.48	.40
ITT5411J	Triple 3 Gate	3.95	3.20	2.65
ITT7411J		.98	.78	.65
ITT7411N		.78	.63	.52
ITT5412J	Triple 3 Gate	3.05	2.45	2.05
ITT7412J		.75	.60	.50
ITT7412N		.60	.48	.40
ITT5413J	Dual 4 Schmitt Trigger	5.50	4.40	3.70
ITT7413J		2.55	2.15	1.80
ITT7413N		2.10	1.70	1.45
ITT5416J	Hex Inverter/Driver	6.40	5.10	4.25
ITT7416J		3.65	2.90	2.30
ITT7416N		2.90	2.30	1.85
ITT5417J	Hex Buffer/Driver	6.40	5.10	4.25
ITT7417J		3.65	2.90	2.30
ITT7417N		2.90	2.30	1.85
ITT5420J	Dual 4 Gate	3.05	2.45	2.05
ITT7420J		.75	.60	.50
ITT7420N		.60	.48	.40
ITT5421J	Dual 4 Gate	3.95	3.20	2.65
ITT7421J		.98	.78	.65
ITT7421N		.78	.63	.52
ITT5425J	Dual 4 Gate	4.80	3.60	3.00
ITT7425J		1.30	1.05	.85
ITT7425N		1.10	.90	.75
ITT5426J	Quad 2 Gate	3.70	3.05	2.45
ITT7426J		.98	.80	.65
ITT7426N		.78	.63	.52
ITT5428J	Quad 2 Buffer	4.80	3.60	3.00
ITT7428J		1.10	.90	.75
ITT7428N		.95	.75	.62
ITT5430J	Single 8 Gate	3.05	2.45	2.05
ITT7430J		.75	.60	.50
ITT7430N		.60	.48	.40
ITT5432J	Quad 2 Gate	4.80	3.60	3.00
ITT7432J		1.10	.90	.75
ITT7432N		.95	.75	.62
ITT5433J	Quad 2 Buffer	5.05	3.80	3.15
ITT7433J		1.20	.95	.80
ITT7433N		1.00	.78	.65
ITT5437J	Quad 2 Buffer	5.50	3.80	3.15
ITT7437J		1.20	.95	.80
ITT7437N		1.00	.78	.65
ITT5438J	Quad 2 Buffer	5.05	3.80	3.15
ITT7438J		1.20	.95	.80
ITT7438N		1.00	.78	.65
ITT5440J	Dual 4 Gate	3.05	2.45	2.05
ITT7440J		.75	.60	.50
ITT7440N		.60	.48	.40
ITT5441AJ	BCD Dec. Decoder	16.90	14.10	11.25
ITT7441AJ		6.05	5.60	4.85
ITT7441AN		5.40	4.30	2.70

TTL DIGITAL (CONTINUED)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT5442J	BCD Dec. Decoder	13.20	11.00	8.80
ITT7442J		5.15	4.15	3.45
ITT7442N		3.30	2.50	2.10
ITT5443J	Excess 3 Decoder	18.45	15.35	12.30
ITT7443J		8.05	6.40	5.35
ITT7443N		4.75	3.75	2.95
ITT5444J	Excess 3 Gray Decoder	18.45	15.35	12.30
ITT7444J		8.05	6.40	5.35
ITT7444N		4.75	3.75	2.95
ITT5445J	BCD Decimal Decoder	37.50	30.00	25.00
ITT7445J		5.95	4.75	3.95
ITT7445N		4.80	3.90	3.20
ITT5446J	7 Segment Decoder	19.65	16.40	13.10
ITT7446J		9.75	7.80	6.50
ITT7446N		4.75	3.80	3.15
ITT7446AJ	BCD to 7 Segment Decoder	11.20	9.00	7.20
ITT7446AN		5.50	4.40	3.70
ITT5447J	7 Seg. Decoder	18.45	15.35	12.30
ITT7447J		8.90	7.15	5.95
ITT7447N		4.45	3.55	2.95
ITT7447AJ	BCD, 7 Seg. Dcdr.	9.75	7.80	6.50
ITT7447AN		5.05	3.80	3.15
ITT5448J	7 Seg. Decoder	15.35	12.80	10.25
ITT7448J		7.90	6.30	5.25
ITT7448N		3.70	2.95	2.45
ITT5450J	Dual 2W/2 Gate	3.05	2.45	2.05
ITT7450J		.75	.60	.50
ITT7450N		.60	.48	.40
ITT5451J	Dual 2W, 2 Gate	3.05	2.45	2.05
ITT7451J		.75	.60	.50
ITT7451N		.60	.48	.40
ITT5453J	4W, 2 Exp. Gate	3.05	2.45	2.05
ITT7453J		.75	.60	.50
ITT7453N		.60	.48	.40
ITT5454J	4W, 2 Gate	3.05	2.45	2.05
ITT7454J		.75	.60	.50
ITT7454N		.60	.48	.40
ITT5460J	Dual 4-Input Expander	3.05	2.45	2.05
ITT7460J		.75	.60	.50
ITT7460N		.60	.48	.40
ITT5470J	DC JK FF	4.60	3.85	3.05
ITT7470J		1.25	1.00	.84
ITT7470N		1.00	.80	.67
ITT5472J	JK MS FF	4.30	3.60	2.85
ITT7472J		1.15	.92	.77
ITT7472N		.93	.74	.62
ITT5473J	JK MS FF	6.15	5.10	4.10
ITT7473J		1.95	1.55	1.30
ITT7473N		1.50	1.20	.98
ITT5474J	Dual D ET FF	6.15	4.92	4.10
ITT7474J		1.65	1.30	1.10
ITT7474N		1.35	1.10	.90
ITT5475J	Quad Bistable Latch	8.85	7.08	5.90
ITT7475J		3.70	2.95	2.45
ITT7475N		2.73	1.85	1.65
ITT5476J	Dual JK MS FF	6.75	5.65	4.50
ITT7476J		2.05	1.62	1.35
ITT7476N		1.65	1.32	1.08
ITT5480J	Gated Full Adder	8.30	6.90	5.50
ITT7480J		3.20	2.60	2.15
ITT7480N		1.98	1.58	1.32
ITT5482J	2 Bit Full Adder	9.60	7.68	6.40
ITT7482J		4.80	3.85	3.20
ITT7482N		4.45	3.55	2.95
ITT5483J	4 Bit Full Adder	15.75	13.50	10.50
ITT7483J		7.60	5.05	90
ITT7483N		4.65	3.70	3.10
ITT5486J	Quad 2 EXcl. Gate	4.10	3.30	2.75
ITT7486J		1.25	1.00	.84
ITT7486N		1.00	.80	.67
ITT5490J	Decade Counter	9.45	7.56	6.30
ITT7490J		3.70	2.95	2.45
ITT7490N		3.00	2.40	1.90
ITT5491AJ	8 Bit Shift Register	13.35	10.68	8.90
ITT7491AJ		6.70	5.35	4.45
ITT7491AN		4.30	3.44	2.20
ITT5492J	Div. x 12 Counter	9.45	7.56	6.30
ITT7492J		3.70	2.95	2.45
ITT7492N		3.00	2.40	1.90
ITT5493J	4 Bit Binary Counter	9.45	7.56	6.30
ITT7493J		3.70	2.95	2.45
ITT7493N		3.00	2.40	1.90
ITT5494J	4 Bit Shift Register	11.50	9.25	7.70
ITT7494J		5.75	4.60	3.85
ITT7494N		3.45	2.75	2.15

TTL DIGITAL

ITT7400 Series operating temperature 0° C to +75° C in plastic DIP (suffix **N**); and ceramic DIP (suffix **J**) available.

ITT5400 Series operating temperature of −55° C to ±125° C and in same packages as ITT7400 Series.

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT5495J	4 Bit L/R SR	11.50	9.25	7.70
ITT7495J		5.75	4.60	3.85
ITT7495N		3.25	2.60	2.15
ITT7495AJ		6.70	5.35	4.45
ITT7495AN		3.70	2.95	2.45
ITT5496J	5 Bit Shift Register	16.20	12.95	10.80
ITT7496J		8.10	6.50	5.40
ITT7496N		6.60	5.40	2.60
ITT54104J	Gated JK MS FF	5.85	4.70	3.90
ITT74104J		1.95	1.56	1.31
ITT74104N		1.90	1.51	1.26
ITT54105J	Gated JK MS FF	5.85	4.70	3.90
ITT74I05J		1.95	1.56	1.31
ITT54107J	Dual JK FF	8.10	6.50	5.40
ITT74107J		1.95	1.53	1.23
ITT74107N		1.68	1.34	.98
ITT54109J	Dual JK MS FF	9.47	6.78	5.65
ITT74109J		2.82	2.25	1.88
ITT74109N		1.87	1.48	1.15
ITT74118J	Hex RS Latch	5.60	4.50	3.70
ITT74118N		4.00	2.70	2.40
ITT54121J	1 Shot Multivibrator	9.00	7.20	6.00
ITT74121J		1.87	1.50	1.25
ITT74121N		1.65	1.30	1.04
ITT74122J	1 Shot Multivibrator	2.60	2.10	1.75
ITT74122N		2.15	1.70	1.30
ITT74123J	Dual I Shot Mul.	3.55	2.83	2.25
ITT74123N		2.40	1.90	1.60
ITT74124J	Pulse Generator	5.25	4.20	3.50
ITT74130J	Quad 2 Gate	2.40	1.90	1.60
ITT74131J	Quad 2 Gate	1.75	1.40	1.15
ITT74135J	Quad 2 Schmt. Trig.	2.20	1.75	1.45
ITT74137J	Hex Schmt. Trig.	2.60	2.10	1.75
ITT74138J	Quad 2 Gate	2.40	1.90	1.60
ITT74139J	Quad 2 Gate	1.75	1.40	1.15
ITT74141J	BCD/Dec. Decoder	4.55	3.65	3.05
ITT74141N		4.05	3.25	2.70
ITT54145J	BCD/Dec. Dcdr/dr.	9.00	7.20	6.00
ITT74145J		4.80	3.90	3.20
ITT74145N		3.90	3.15	2.60
ITT54150J	16 Multiplex	12.10	11.15	9.70
ITT74150J		8.40	6.70	5.20
ITT74150N		6.98	5.57	4.32
ITT54151J	8 Multiplex	6.20	5.60	4.90
ITT74151J		5.80	4.60	3.90
ITT74151N		4.65	3.70	3.10
ITT54153J	Dual 4 Multiplex	6.20	5.60	4.90
ITT74153J		5.60	4.45	3.50
ITT74153N		4.55	3.60	3.00
ITT54154J	1 of 16 Decoder	12.10	11.15	9.70
ITT74154J		6.90	5.60	4.85
ITT74154N		5.76	4.59	3.56
ITT54155J	Dual 2/4 Decoder	11.20	9.00	7.20
ITT74155J		5.60	4.50	3.60
ITT74155N		4.45	3.55	2.90
ITT54156J	Dual 2/4 Decoder	11.10	9.00	7.20
ITT74156J		5.60	4.50	3.60
ITT74156N		4.45	3.55	2.90
ITT54157J	Quad 2 Multiplex	7.81	6.22	5.30
ITT74157J		3.80	3.00	2.60
ITT74157N		3.50	2.80	2.20
ITT54160J	4 Bit BCD Counter	15.00	13.80	12.00
ITT74160J		7.50	6.95	6.00
ITT74160N		3.40	2.70	2.10
ITT54161J	4 Bit Bin. Counter	15.00	13.80	12.00
ITT74161J		7.50	6.95	6.00
ITT74161N		3.40	2.70	2.10
ITT54162J	4 Bit BCD Counter	15.00	13.80	12.00
ITT74162J		7.50	6.95	6.00
ITT74162N		3.40	2.70	2.10
ITT54163J	4 Bit Bin. Counter	15.00	13.80	12.00
ITT74163J		7.50	6.95	6.00
ITT74163N		3.40	2.70	2.10
ITT54164J	8 Bit Se/Pa. SR	14.40	11.50	8.90
ITT74164J		7.20	5.75	4.45
ITT74164N		6.55	5.25	4.05
ITT54180J	Parity Gen.	13.50	10.80	9.00
ITT74180J		7.80	6.10	5.10
ITT74180N		6.20	4.90	4.10
ITT54182J	Carry Look Ahead	4.15	3.85	3.33
ITT74182J		2.82	2.25	1.88
ITT74182N		2.20	1.75	1.45

TTL DIGITAL (CONTINUED)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT54190J	U/D Decade Cntr.	16.50	13.20	11.00
ITT74190J		7.60	6.05	5.05
ITT74190N		6.60	5.30	4.40
ITT54191J	U/D Bin. Cntr.	16.50	13.20	11.00
ITT74191J		7.90	6.05	5.05
ITT74191N		6.60	5.30	4.40
ITT54192J	U/D BCD Cntr.	30.00	24.00	20.00
ITT74192J		9.80	7.70	6.00
ITT74192N		7.90	6.30	4.80
ITT54193J	U/D Bin. Cntr.	30.00	24.00	20.00
ITT74193J		9.80	7.70	6.00
ITT74193N		7.90	6.30	4.80
ITT74194J	4 Bit L/R SR	5.95	4.75	3.95
ITT74194N		4.45	3.55	2.90
ITT74195J	4 Bit Pa/Se SR	5.10	4.05	2.60
ITT74195N		3.50	2.80	2.20

TTL HIGH SPEED DIGITAL

This series is designed to be used in conjunction with 54/7400 Series TTL in system locations requiring minimum propagation delays. ITT74H Series operating temperature 0° C to +75° C in plastic DIP (suffix **N**); ceramic DIP (suffix **J**) also available. ITT54H Series operating temperature of −55° C to +125° C in ceramic DIP (suffix **J**).

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT54H00J	Quad 2 Gate	3.05	2.45	2.05
ITT74H00J		.90	.72	.60
ITT74H00N		.75	.60	.50
ITT54H01J	Quad 2 Gate	3.05	2.45	2.05
ITT74H01J		.90	.72	.60
ITT74H01N		.75	.60	.50
ITT54H04J	Hex Inverter	3.80	3.05	2.55
ITT74H04J		1.15	.90	.75
ITT74H04N		.93	.74	.62
ITT54H05J	Hex Inverter	3.80	3.05	2.55
ITT74H05J		1.15	.90	.75
ITT74H05N		.93	.74	.62
ITT54H10J	Triple 3 Gate	3.05	2.45	2.05
ITT74H10J		.90	.72	.60
ITT74H10N		.75	.60	.50
ITT54H11J	Triple 3 Gate	3.95	3.20	2.65
ITT74H11J		1.10	.90	.72
ITT74H11N		.90	.72	.60
ITT54H20J	Dual 4 Gate	3.05	2.45	2.05
ITT74H20J		.90	.72	.60
ITT74H20N		.75	.60	.50
ITT54H21J	Dual 4 Gate	3.05	2.45	2.05
ITT74H21J		1.10	.90	.72
ITT74H21N		.90	.72	.60
ITT54H30J	Single 8 Gate	3.05	2.45	2.05
ITT74H30J		.90	.72	.60
ITT74H30N		.75	.60	.50
ITT54H40J	Dual 4 Buffer	3.05	2.45	2.05
ITT74H40J		.90	.72	.60
ITT74H40N		.75	.60	.50
ITT54H50J	Dual 2W/2 Gate	3.05	2.45	2.05
ITT74H50J		.90	.72	.60
ITT74H50N		.75	.60	.50
ITT54H51J	Dual 2W/2 Gate	3.05	2.45	2.05
ITT74H51J		.90	.72	.60
ITT74H51N		.75	.60	.50
ITT54H53J	4W/2 Gate	3.05	2.45	2.05
ITT74H53J		.90	.72	.60
ITT74H53N		.75	.60	.50
ITT54H54J	4W/2 Gate	3.05	2.45	2.05
ITT74H54J		.90	.72	.60
ITT74H54N		.75	.60	.50
ITT54H60J	Dual 4 Exp.	3.05	2.45	2.05
ITT74H60J		.90	.72	.60
ITT74H60N		.75	.60	.50
ITT54H72J	JK MS FF	4.70	3.80	3.15
ITT74H72J		1.30	1.05	.90
ITT74H72N		1.05	.85	.72
ITT54H73J	JK MS FF	7.80	6.25	5.20
ITT74H73J		1.95	1.60	1.30
ITT74H73N		1.55	1.25	1.05
ITT54H74J	Dual D ET FF	6.30	5.05	4.20
ITT74H74J		1.70	1.35	1.10
ITT74H74N		1.35	1.10	.90
ITT54H76J	JK MS FF	8.25	6.60	5.50
ITT74H76J		2.20	1.75	1.45
ITT74H76N		1.75	1.40	1.15

TTL HIGH SPEED 9000 SERIES

Compatible with DTL and MSI devices. Operating Temperature: −55° C, to +125° C, types with suffix **-1**; 0° C to +75° C, types with suffix **-5.** In ceramic DIP.

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT9001-1D	JK FF	6.30	5.04	4.20
ITT9001-5D		2.11	1.69	1.41
ITT9002-1D	Quad 2 Gate	3.82	3.06	2.55
ITT9002-5D		1.27	1.06	.85
ITT9003-1D	Triple 3 Gate	3.82	3.06	2.55
ITT9003-5D		1.27	1.06	.85
ITT9004-1D	Dual 4 Gate	3.82	3.06	2.55
ITT9004-5D		1.27	1.06	.85
ITT9005-1D	4W/2 Gate	3.82	3.06	2.55
ITT9005-5D		1.27	1.06	.85
ITT9008-1D	And-or-Invert Gate	3.82	3.06	2.55
ITT9008-5D		1.27	1.02	.85
ITT9009-1D	Dual 4 Buffer	4.35	3.48	2.90
ITT9009-5D		1.45	1.16	.97
ITT9012-1D	Hex Inverter	3.82	3.06	2.55
ITT9012-5D		1.27	1.02	.85
ITT9016-1D	Hex Inverter	4.80	3.80	3.20
ITT9016-5D		1.60	1.28	1.07
ITT9020-1D	Dual JK FF	9.67	7.94	6.45
ITT9020-5D		3.22	2.58	2.15
ITT9022-1D	Dual JK FF	10.35	8.28	6.85
ITT9022-5D		3.42	2.73	2.28
ITT9024-1D	Dual JK FF	9.47	6.78	5.65
ITT9024-5D		2.82	2.25	1.88

TTL MONOSTABLE VIBRATORS

Operating Temperature: −55° C to +125° C, types with suffix **-1**; 0° C to +75° C, types with suffix **-5.** Packages: ceramic DIP, suffix **D** and plastic DIP, suffix **N.**

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT9601-1D	Retrig. 1 Shot	7.80	7.20	6.00
ITT9601-5D		3.90	3.60	3.00
ITT9601-5N		1.65	1.50	1.30
ITT9602-1D	Dual Retrig. 1 Shot	10.70	9.90	8.60
ITT9602-5D		7.15	6.60	5.75
ITT9602-5N		3.00	2.40	2.00

MSI CIRCUITS

Operating Temperature: −55° C to +125° C, types with suffix **-1**; 0° C to +75° C, types with suffix **-5.** Packages: ceramic DIP, suffix **D** and plastic DIP, suffix **N.**

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT9300-1D	4 Bit SR	7.45	6.85	5.95
ITT9300-5D		3.52	2.90	2.50
ITT9300-5N		3.30	2.60	2.25
ITT9301-1D	1 of 10 Decoder	7.45	6.85	5.95
ITT9301-5D		3.52	2.90	2.50
ITT9301-5N		3.10	2.45	2.10
ITT9304-1D	Dual Full Adder	9.15	9.50	7.40
ITT9304-5D		3.70	3.40	2.95
ITT9304-5N		3.50	3.15	2.60
ITT9308-1D	Dual 4 Bit Latch	9.15	8.50	7.40
ITT9308-5D		6.05	5.60	4.85
ITT9308-5N		4.50	4.20	3.60
ITT9309-1D	Dual 4 Bit Multiplex	5.60	5.10	4.45
ITT9309-5D		2.45	2.25	1.95
ITT9309-5N		2.25	1.80	1.47
ITT9311-1D	1 of 16 Decoder	9.15	8.50	7.50
ITT9311-5D		7.27	5.82	4.85
ITT9311-5N		4.50	4.20	3.60
ITT9312-1D	8 1/P Multiplex	5.60	5.10	4.45
ITT9312-5D		2.45	2.25	1.95
ITT9312-5N		2.25	1.80	1.47
ITT9316-1D	4 Bit Cntr.	12.20	11.20	9.75
ITT9316-5D		4.00	3.70	3.20
ITT9316-5N		4.00	3.70	3.20
ITT9322-1D	Quad 2 Multiplex	5.60	5.10	4.45
ITT9322-5D		2.45	2.25	1.95
ITT9322-5N		2.25	1.80	1.47
ITT9328-1D	Dual 8 Bit SR	14.90	13.75	11.95
ITT9328-5D		7.50	6.90	6.00
ITT9328-5N		5.70	4.55	3.80

OPERATIONAL AMPLIFIERS

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT709-1C	OP Amp	1.55	1.25	1.05
ITT709-5C		1.10	1.05	.90
ITT709-1D		3.38	2.70	2.25
ITT709-5D		1.10	1.05	.90
ITT709-1B		7.38	6.80	5.89
ITT709-5N		.80	.74	.64
ITT730-1C	Diff. Amp	14.93	11.94	9.95
ITT730-5C		5.93	4.74	3.95
ITT741-1C	OP Amp	1.55	1.35	1.05
ITT741-5C		.90	.85	.72
ITT741-1D		6.38	5.10	4.25
ITT741-5D		.90	.85	.72
ITT741-1B		6.70	5.50	4.50
ITT741-5B		1.50	1.40	1.25
ITT741-5T		.80	.74	.64

VOLTAGE REGULATORS

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT723-1C	Voltage Reg	3.15	2.65	2.30
ITT723-5C		1.35	1.10	.90
ITT723-1D		5.80	4.60	4.00
ITT723-5D		2.93	2.34	1.95
ITT726-1C	TX Pair	45.00	36.00	30.00
ITT726-5C		11.00	9.00	7.50
TCA700	Voltage Regulator	2.95	2.63	2.05

INTERFACE (SENSE AMPS)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT5520-J	Dual Sense Amp	8.92	7.14	5.95
ITT7520-J		2.74	2.20	1.83
ITT7521-J	Dual Sense Amp	4.46	3.57	2.85
ITT7521-J		1.38	1.10	.92
ITT5522-J	Dual Sense Amp	8.43	6.74	5.62
ITT7522-J		2.74	2.20	1.83
ITT5523-J	Dual Sense Amp	4.46	3.57	2.85
ITT7523-J		1.38	1.10	.92
ITT5524-J	Dual Sense Amp	8.43	6.74	5.62
ITT7524-J		2.50	2.00	1.67
ITT5525-J	Dual Sense Amp	4.46	3.57	2.85
ITT7525-J		1.96	1.57	1.31
ITT5528-J	Dual Sense Amp	9.27	7.42	6.18
ITT7528-J		2.74	2.20	1.83
ITT5529-J	Dual Sense Amp	4.01	3.21	2.57
ITT7529-J		1.78	1.43	1.19
ITT5534-J	Dual Sense Amp	8.92	7.14	5.95
ITT7534-J		2.74	2.20	1.83
ITT5535-J	Dual Sense Amp	4.44	3.55	2.84
ITT7535-J		1.96	1.57	1.31
ITT55234-J	Dual Sense Amp	8.43	6.74	5.62
ITT75234-J		2.50	2.00	1.67
ITT55235-J	Dual Sense Amp	4.44	3.55	2.84
ITT75235-J		1.96	1.57	1.31

INTERFACE (LINE DRIVERS/RECEIVERS)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT9614-5D	Dual Diff. Driver	11.00	9.00	7.00
ITT9615-1D	Dual Diff. Receiver	28.00	22.00	19.00
ITT9615-5D		14.00	11.00	9.00
ITT75138-N	Quad Bus Transcvr.	2.14	1.97	1.71
ITT1488-5D	Quad Line Driver	6.04	5.56	4.80
ITT1489-5D	Quad Line Receiver	4.68	4.31	3.72
ITT1489A-5D	Quad Line Receiver	4.98	4.59	3.96

INTERFACE (PERIPH. DRIVERS)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT75324-5N	Memory Driver	5.02	4.66	4.02
ITT75324-5J	Memory Driver	5.82	4.70	4.66
ITT75325-5N		5.02	4.66	4.02
ITT75325-5J		5.82	4.70	4.66
ITT75451-5T	Dual Periph. Driver	.80	.74	.64
ITT75461-5T		.92	.85	.73
ITT552-5N	HC Driver	2.39	2.20	1.90
ITT554-5N	HC Driver	2.39	2.20	1.90
ITT556-5N	HC Driver	2.39	2.20	1.90

ITT Semiconductors

INTERFACE (DISPLAY DRIVERS)

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT491-5N	Quad Seg. Dr.	2.08	1.75	1.30
ITT492-5N	Hex Digit Dr.	2.08	1.75	1.30
ITT500-5N	Hex Digit Driver	2.89	2.31	1.97
ITT501-5N	Quad Seg Dr.	2.32	1.89	1.44
ITT502-5N	Hex Digit Dr.	3.11	2.49	2.12
ITT503-5N	Quad Seg Dr.	2.89	2.31	1.97
ITT504-5N	10 Digit Dr.	6.50	5.40	4.30
ITT505-5N	8 Segment Dr.	6.50	5.40	4.30
ITT506-5N	Hex Digit Dr.	3.32	2.66	2.26
ITT507-5N	Quad Seg Dr.	3.32	2.66	2.26
ITT508-5N	8 Digit Dr.	3.89	3.11	2.65
ITT509-5N	8 Segment Dr.	3.32	2.66	2.26
ITT510-5N	Hex Digit Dr. Gd.	3.32	2.66	2.26
ITT512-5D	Hex Digit Dr. Gd.	1.88	1.73	1.49
ITT7103	7 Segment Driver	5.93	4.74	3.95
ITT7105	8 Digit Driver	5.93	4.74	3.95

TELEVISION

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT3064	TV/Auto Tuning	1.25	1.05	.95
ITT3065	TV/FM Sound	1.60	1.40	1.10
ITT3701	2 W Sound System	2.95	2.40	2.20
ITT3710-5T	Hor. Oscillator	1.15	1.05	.91
TDA1330	Low Lev. Div. Dtctr.	2.60	2.08	1.75
TDA1352	TV Video Amp	2.60	2.08	1.75
TBA940	Horiz. Processor	3.60	3.35	2.80
TBA950	Horiz. Processor	3.60	3.35	2.80
TAA790	Jungle Circuit	4.30	3.70	3.20
TBA120S	TV/FM/IF Circuit	2.09	1.73	1.54
ZTK 6.8	Temp. Comp. Zener	1.25	1.05	.87
ZTK 9		1.25	1.05	.87
ZTK 11		1.25	1.05	.87
ZTK 18	Temp. Comp. Zener	1.25	1.05	.87
ZTK 22		1.25	1.05	.87
ZTK 27		1.25	1.05	.87
ZTK 33	Temp. Comp. Zener	.80	.67	.60

ENTERTAINMENT CIRCUITS

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
ITT3713-5T	Dual 2W Audio Amp	4.10	3.30	2.75
TCA250	Dual Filter Amp	3.25	2.70	2.40
TCA350	Delay Line	9.85	7.75	5.80
TCA430N	Organ Circuit	3.50	2.95	2.60
SAJ110A	Organ Circuit	2.70	2.25	2.00
SAJ110B	Organ Circuit	5.80	4.65	3.80
TBA470	Organ Circuit	1.80	1.50	1.30
TBA800	5W Audio Amp	3.60	3.35	2.80
TCA840	Watch Circuit	.90	.75	.63
TBA840	Watch Circuit	.88	.73	.61

AUTOMOTIVE CIRCUITS

ITT Type	Circuit Function	Net Each, Lots of 1-24	25-99	100 Up
SAK110	Tachometer Circuit	1.35	1.10	.92
SAK115	Tachometer Driver	2.65	2.01	1.53
SAY115X	Speedometer Driver	3.50	2.92	2.63
SAY115Y	Speedometer Driver	3.50	2.92	2.63
TAA775G	Flasher Circuit	1.80	1.55	1.40
TAA780	Clock Circuit	.87	.72	.60

MILITARY PRODUCTS

Integrated Circuits To: MIL 38510, Full JAN QPL
38510/883B, Hi Rel Standard Process

Transistors To: JAN TXV, Full JAN QPL
Hi Rel StandardProcess

ITT Type	Basic Part	Net Each, Lots of 1-24	25-99	100-up
Flatpack				
38510/00101	5430	7.08	5.95	5.04
38510/00102	5420	7.08	5.95	5.04
38510/00103	5410	7.08	5.95	5.04
38510/00104	5400	7.37	6.20	5.23
38510/00105	5404	7.08	5.95	5.04
38510/00107	5401	7.08	5.95	5.04
38510/00108	5405	7.37	6.20	5.23
38510/00109	5403	7.37	5.95	5.04
38510/00201	5472	10.55	8.85	7.45
38510/00202	5473	11.10	9.34	7.86
38510/00205	5474	11.10	9.34	7.86
38510/00206	5470	10.55	8.85	7.45
38510/00301	5440	7.37	5.95	5.04
38510/00302	5437	8.85	7.45	6.29
38510/00401	5402	7.08	5.95	5.04
38510/00501	5450	7.08	5.95	5.04
38510/00502	5451	7.08	5.95	5.04
38510/00503	5453	7.08	5.95	5.04
38510/00504	5454	7.08	5.95	5.04
38510/00601	5482	21.40	17.96	15.11
38510/00701	5486	11.10	9.34	7.86
38510/00801	5406	7.92	6.60	5.51
38510/00802	5416	7.92	6.60	5.51
38510/00803	5407	7.92	6.60	5.51
38510/00804	5417	7.92	6.60	5.51
38510/00901	5495	18.90	15.90	13.37
38510/00902	5496	22.10	18.60	15.67
38510/01201	54121	13.20	11.10	9.35
38510/01301	5492	8.50	15.60	13.15
38510/01302	5493	8.50	15.60	13.15
38510/01307	5490	15.80	13.20	11.02
38510/02301	54H30	7.80	6.55	5.51
38510/03001	930	7.75	6.45	5.40
38510/03002	935	7.75	6.45	5.40
38510/03003	936	7.75	6.45	5.40
38510/03004	946	7.75	6.45	5.40
38510/03005	962	7.75	6.45	5.40
Dual-In-Line				
38510/00101BCB	5430	6.37	5.35	4.50
38510/00102BCB	5420	6.37	5.35	4.50
38510/00103BCB	5410	6.37	5.35	4.50
38510/00104BCB	5400	6.37	5.35	4.50
38510/00105BCB	5404	6.37	5.35	4.50
38510/00107BCB	5401	6.37	5.35	4.50
38510/00108BCB	5405	6.37	5.35	4.50
38510/00109BCB	5403	6.37	5.35	4.50
38510/00201BCB	5472	9.58	8.04	6.75
38510/00202BCB	5473	10.54	8.86	7.44
38510/00204BEB	5476	11.25	9.45	7.94
38510/00205BCB	5474	10.54	8.86	7.44
38510/00206BCB	5470	9.77	8.21	6.89
38510/00301BCB	5440	6.37	5.35	4.50
38510/00302BCB	5437	10.54	8.86	7.44
38510-00401BCB	5402	6.37	5.35	4.50
38510/00501BCB	5450	6.37	5.35	4.50
38510/00501BCB	5451	6.37	5.35	4.50
38510/00503BCB	5453	6.37	5.35	4.50
38510/00504BCB	5454	6.37	5.35	4.50
Dual-In-Line				
38510/00601BCB	5482	12.90	10.75	8.95
38510/00602BEB	5483	19.80	16.50	13.50
38510/00701BCB	5486	10.20	8.52	7.10
38510/00801BCB	5406	6.90	5.76	4.80
38510/00802BCB	5416	6.90	5.76	4.80
38510/00803BCB	5407	6.90	5.76	4.80
38510/00804BCB	5417	6.90	5.76	4.80
38510/00901BCB	5495	16.85	14.05	11.70
38510/00902BCB	5496	19.60	16.35	13.62
38510/01001BEB	5442	14.50	12.10	10.10
38510/01201BCB	54121	10.80	9.00	7.51
38510/01301BCB	5492	16.44	13.70	11.43
38510/01302BCB	5493	16.44	13.70	11.43
38510/01307BCB	5490	15.80	13.20	11.02
38510/01402BEB	9312	11.45	9.55	7.97
38510/01404BEB	9309	13.55	11.30	9.42
38510/01405BEB	9322	11.20	9.35	7.97
38510/02301BCB	54H30	7.65	6.42	5.40
38510/03001BCB	930	6.80	5.70	4.75
38510/03002BCB	935	6.80	5.70	4.75
38510/03003BCB	936	6.80	5.70	4.75
38510/03004BCB	946	6.80	5.70	4.75
38510/03005BCB	962	6.80	5.70	4.75

HI-REL TRANSISTORS

Part Number	Suggested OEM Resale 1-99	100-999
JAN TXV 2N2222A	$5.88	$4.90
JAN TXV 2N2369A	5.88	4.90
JAN TXV 2N2907A	5.88	4.90
JAN TXV 2N2219A	6.76	5.63
JAN TXV 2N2905A	6.76	5.63

MIL-STD-883

ITT's approach to High Reliability provides a solid easily understood processing sequence. Each class level is geared exactly to the screening procedures outlined in Method 5004 of Military Standard 883 - Test Methods and Procedures for Integrated Circuits.
We supply the following product lines to 883.

5400 TTL 9000 TTL 9600 TTL Linear IC's
54H TTL 9300 TTL

SILICON ZENER DIODES 1N746 SERIES

ITT Type	Nom. V_Z at I_{ZT} V	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ohms	I_{ZM} mA	I_R µA
1N746	3.3	20	28	110	10
1N747	3.6	20	24	100	10
1N748	3.9	20	23	95	10
1N749	4.3	20	22	85	2
1N750	4.7	20	19	75	2
1N751*	5.1	20	17	70	1
1N752*	5.6	20	11	65	1
1N753*	6.2	20	7	60	0.1
1N754*	6.8	20	5	55	0.1
1N755*	7.5	20	6	50	0.1
1N756*	8.2	20	8	45	0.1
1N757*	9.1	20	10	40	0.1
1N758*	10.0	20	17	35	0.1
1N759*	12.0	20	30	30	0.1

*JAN & JANTX Types available.

ONE WATT (DO-41) GLASS

Device Type	Nominal Zener Volt. [Vz] Volts	Device Type	Nominal Zener Volt. [Vz] Volts
1N4729	3.6	1N4741	11
1N4730	3.9	1N4742	12
1N4731	4.3	1N4743	13
1N4732	4.7	1N4744	15
1N4733	5.1	1N4745	16
1N4734	5.6	1N4746	18
1N4735	6.2	1N4747	20
1N4736	6.8	1N4748	22
1N4737	7.5	1N4749	24
1N4738	8.2	1N4750	27
1N4739	9.1	1N4751	30
1N4740	10	1N4752	33

Standard Tolerance is ±10%. Add Suffix "A" for ±5% Tolerance.
Other Tolerances Available Upon Request. Consult the Factory for Non-Standard Voltages.

1 WATT ZENER DIODE PRICING

10% Tolerance				5% Tolerance			
ITT Type	1-99	100-999	1K	ITT Type	1-99	100-999	1K
1N4729-1N4733	$0.55	.35	.22	1N4729A-1N4733A	.60	.45	.27
1N4734-1N4752	.50	.35	.22	1N4734A-1N4752A	.60	.45	.27

500 MW ZENER DIODE

Type Number	Nominal Regulator Zener [V_Z] volts	Type Number	Nominal Regulator Zener [V_Z] volts	Type Number	Nominal Regulator Zener [V_Z] volts
1N5226	3.3	1N5236	7.5	1N5246	16
1N5227	3.6	1N5237	8.2	1N5247	17
1N5228	3.9	1N5238	8.7	1N5248	18
1N5229	4.3	1N5239	9.1	1N5249	19
1N5230	4.7	1N5240	10	1N5250	20
1N5231	5.1	1N5241	11	1N5251	22
1N5232	5.6	1N5242	12	1N5252	24
1N5233	6.0	1N5243	13	1N5253	25
1N5234	6.2	1N5244	14	1N5254	27
1N5235	6.8	1N5245	15	1N5255	28
				1N5256	30
				1N5257	33

Standard Tolerance is ±20%. Add Suffix "A" for ±10% Tolerance, Suffix "B" for ±5% Tolerance.
Other Tolernaces and Non-standard Voltages also available on request.

500 MW ZENER DIODE PRICING

± 20% Tolerance				± 5% Tolerance			
ITT Type	1-99	100-999	1K	ITT Type	1-99	100-999	1K
1N5226-1N5257	$0.50	.35	.19	1N5226B-1N5257B	.60	.45	.22

±10% Tolerance (suffix A) pricing available on request.

SILICON PLANAR TUNING DIODES (DPD)

Operating temperature 0° C to +90° C (+100° C, ITT210). P_D = 150 mW at 50° C V_{BR} = 30 V (20 V at 5µA, ITT210). Size, 0.062" x 0.160" lg. max.; leads 1.00" lg. min. Data sheets on request.

ITT Type	Description	Net Ea., Lots 1-99	100-999
ITT109	TV receiver tuner where 3 or 4 units will provide complete coverage of VHF and UHF broadcast bands	$1.44	$0.96
ITT141		1.44	.96
ITT142		1.15	.78
ITT210	AFC and tuning applications between 1 and 1,000 MHz	.75	.50

SILICON PLANAR TUNING DIODES (DPD) (CONTINUED)

ITT Type	Description	Net Ea., Lots 1-99	100-999
ITT243	Wave bandswitch for frequency range of 10 to 1,000 MHz	.45	.30
ITT244		.57	.42

SILICON PLANAR DIODES

Characteristics at 25° C. **1N914-1N916B (DO-7):** 0.110" x 0.300" lg. max.; leads 1.00" lg. min. **1N4148-1N4454 (DPD):** 0.062" x 0.160" lg. max.; leads 1.00" lg. min.

ITT Type	V_{RM} V	I_F at V_F mA	I_F at V_F V	I_R at V_R µA	I_R at V_R V	t_{rr} n_{sec}	Net Ea., Lots 1-99	100-999*
1N914	75	10	1	0.025	20	4	$0.28	$0.15
1N914B	75	5	0.72	0.025	20	4	.28	.15
1N916	75	10	1	0.025	20	4	.29	.16
1N916A	75	20	1	0.025	20	4	.30	.18
1N916B	75	5	0.73	0.025	20	4	.30	.18
1N4148*	75	10	1	0.025	20	4	.21	.18
1N4149	75	10	1	0.025	20	4	.30	.20
1N4150*	50	1	0.62	0.1	50	6	40	.25
1N4151	75	50	1	0.5	50	2	.30	.24
1N4152	40	0.1	0.55	0.5	30	2	.25	.20
1N4153*	75	0.1	0.55	0.5	50	2	.30	.24
1N4154	35	30	1	0.1	25	2	.30	.28
1N4444	70	0.1	0.55	0.05	50	7	.30	.30
1N4446	75	20	1	0.025	20	4	.30	.30
1N4447	75	20	1	0.025	20	4	.30	.30
1N4448	75	5	0.72	0.025	20	4	.30	.30
1N4449	75	5	0.73	0.025	20	4	.30	.30
1N4450	40	0.1	0.54	0.05	30	4	.55	.45
1N4451	40	0.1	0.50	0.05	30	4	.55	.45
1N4454*	75	10	1.0	0.1	50	2	.30	.30

*JAN and JANTX types available.

SILICON RECTIFIERS 1 AMP GLASS RECTIFIERS (DO-29)

One-piece hermetically sealed glass. Characteristics at 60 Hz, inductive load, single phase half wave. I_O = 1.0 A at 50° C_A. $I_{F(surge)}$ = 50 A at 1 Hz (16 A at 10 Hz, 6 A at 100 Hz). Size, 0.150" x 0.360" lg.; 1" lg. min. leads.

ITT Type	V_{RM} V	$V_{r(rms)}$ V	I_F at 25° C V	I_{RM} at 100° C_A µA	T_{rr} µsec	Net Each, Lots 1-99	100-999*
1N4383*	200	140	1.0	275	10	$0.31	$0.23
1N4384*	400	280	1.0	250	10	.35	.28
1N4385*	600	420	1.0	225	10	.44	.39
1N4585*	800	560	1.0	200	10	.50	.44
1N4586*	1000	700	1.0	200	10	.76	.65

*JAN and JANTX types available.

SUBMINIATURE GLASS RECTIFIERS (DO-7)

Characteristics at 25° C. V_F = 1.0 V at I_F = 400 mA. I_{RM} = 0.2 V (**1N645A**, 0.05 V) at V_{RM}.

ITT Type	V_{RM} V	Net Ea., Lots 1-99	100-999*	ITT Type	V_{RM} V	Net Ea., Lots 1-99	100-999*
1N645*	225	$1.20	$0.80	1N647*	400	1.50	1.00
1N645A	225	1.45	.95	1N649*	600	2.12	1.51

*JAN and JANTX types available.

SILICON RECTIFIERS

Operating Temperature Range: −65° C to +175° C.

ITT Type	V_{RM} 100° C V	Net Ea., Lots 1-99	100-999*	ITT Type	V_{RM} 100° C V	Net Ea., Lots 1-99	100-999*
1N4001*	50	$0.34	$0.22	1N4006	800	.75	.45
1N4002*	100	.35	.22	1N4007	1000	.85	.59
1N4003*	200	.40	.23				
1N4004*	400	.48	.35				
1N4005*	600	.60	.35				

Operating Temperature Range: −65° C to +100° C. I_O = 500 mA avg. at 100° C.
* Available in plastic or glass.

FAST RECOVERY RECTIFIERS

Ratings at 50° C Ambient

ITT Type	PIV [Volts]	Pricing Net Each, Lots 1-99	100-999	1K
1N4933	50	$0.90	$ .60	$.35
1N4934	100	1.00	.70	.38
1N4935	200	1.30	.85	.45
1N4936	400	1.50	.95	.52
1N4937	600	1.80	1.00	.60

Reverse Recovery Time (IF = 1Amp to VR = 30V)– 200 Nanoseconds. I_O, Average Forward Current - 1.0 Amps.

ITT Semiconductors

SILICON PLASTIC 3 AMP RECTIFIERS

ITT Type	PIV [Volts]	Pricing Net Each, Lots 1-999	1K
1N5400	50	$0.36	$.28
1N5401	100	.40	.32
1N5402	200	.43	.34
1N5403	300	.50	.35
1N5404	400	.56	.36
1N5405	500	.63	.40
1N5406	600	.70	.44
1N5407	800	.90	.58
1N5408	1000	1.00	.70

Average Forward Current = 3 Amps
Max ½ Cycle Surge = 300 Amps
$I^2t \leq 8.3$ ms = 190 Amp²Sec

GERMANIUM GOLD BONDED DIODES

ITT Type	Min. I_F V = 1.0 V mA	Max. I_R at 25 C µA	V	PIV. Volts	Net Ea., Lots 1-99	100-999*
1N34A	5	500	−50	60	$0.21	$0.14
1N38A	5	500	−100	100	.30	.19
1N90	5	500	−50	60	.30	.20
1N117	10	100	−50	60	.50	.37
1N139	20	1500	−50	40	.22	.18
1N198	5	250	−50	80	.34	.24
1N55B	5	500	−150	150	.70	.50
1N60	5	40	−20	38	.29	.17
1N100	20	50	−50	80	.22	.18
1N100A	40	50	−50	80	.22	.18
1N270*	200	100	−50	60	.30	.17
1N273	100	20	−20	30	.65	.49
1N277*	100	75	− 10†	100	.33	.25
1N279	100	200	−20	30	.28	.21
1N281	100	30	−10	60	.23	.16
1N283	200	20	−10	20	.40	.31
1N500	100	40	−60	60	.52	.40
1N276*	40	20	−10	50	.30	.17

*JAN type available. †At 75° C. ‡Between −10 and −50 volts.

NPN GENERAL PURPOSE AMPLIFIERS

H_{FE} and $V_{CE(sat)}$ at 150 mA except as otherwise noted.

ITT Type	TO-	V_{CEO} V	V_{CBO} V	Min. H_{FE}	Maximum $V_{CE(sat)}$ V	Maximum I_{CBO} nA	Min. f_t MHz	Net Each, 1-99	Net Each, 100-999
2N760	18	45	45	50†	1.0§	200	50	.81	.50
2N760A	18	60	60	50†	1.0§	100	50	.97	.60
2N929#	18	45	45	60‡	1.0§	10	30	.80	.48
2N930#	18	45	45	150‡	1.0§	10	30	.46	.28
2N2218	5	30	60	40	0.4	10	250	.55	.34
2N2218A	5	40	75	40	0.3	10	250	.63	.39
2N2219#	5	30	60	100	0.4	10	250	.54	.33
2N2219A#	5	40	75	100	0.3	10	250	.54	.33
2N2221#	18	30	60	40	0.4	10	250	.57	.35
2N2221A#	18	40	75	40	0.3	10	250	.51	.31
2N2222#	18	30	60	100	0.4	10	250	.34	.21
2N2222A#	18	40	75	100	0.3	10	250	.57	.35
2N2297	5	35	80	40	0.2	10	120	1.07	.70
2N2483	18	60	60	40*	0.35†	10	60	.68	.41
2N2484	18	60	60	100*	0.35†	10	60	.32	.31
2N2586	18	45	60	120*	0.5§	2	45	2.26	1.40
2N3107	5	60	100	100	0.25	10	70	1.15	.70
2N3108	5	60	100	40	0.25	10	60	1.15	.70
2N3109	5	40	80	100	0.25	10	70	1.15	.70
2N3110	5	40	80	40	0.25	10	60	1.15	.70
2N3299	5	30	60	40	0.22	10	250	1.03	.64
2N3300	5	30	60	100	0.22	10	250	.85	.53
2N3301	18	30	60	40	0.22	10	250	.70	.40
2N3302	18	30	60	100	0.22	10	250	.97	.70

*At 10µA. †At 1 mA. ‡At 0.5 mA. §At 10 mA. #JAN and JANTX types available.

NPN HIGH SPEED SWITCHES

H_{FE} and $V_{CE(sat)}$ at 10 mA except as otherwise noted.

ITT Type	V_{CEO} V	Min. H_{FE}	Maximum $V_{CE(sat)}$ V	Maximum t_{on} nsec	Maximum t_{off} nsec	Min. f_t MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N706*	20†	20	0.60	. . .	60‡	200	$0.34	$0.21
2N706A	20†	20	0.60	40	75	200	.49	.30
2N706B	20†	20	0.40	40	75	200	.57	.35
2N708•	20†	30	0.40	40	75	300	.46	.28
2N784	15†	25	0.19	20	40	200	.55	.34
2N914	20†	30	0.25	40	40	300	.56	.34
2N2368	15	20	0.25	12	15	400	.49	.30
2N2369	15	40	0.25	12	18	500	.42	.25
2N2369A•	15	40	0.20	12	18	500	.43	.26
2N2481	15	40	0.25	40	55	300	.43	.26
2N3009#	15	30§	0.18§	15	25	350	.91	.56
2N3011	50	30	0.35	. . .	. . .	400	.57	.35
2N3013*#	15	30§	0.18§	15	25	350	1.03	.64
2N3014#	20	30§	0.18§	16	25	350	1.00	.61

*JAN type available. †V_{CER} at R_{BE} = 10 ohms. ‡r_s. §At 30 mA. #TO-52. •JAN and JANTX types available.

PNP GENERAL PURPOSE AMPLIFIERS

H_{FE} and $V_{CE(sat)}$ at 150 mA except as otherwise noted.

ITT Type	TO-	V_{CEO} V	Min. H_{FE}	Maximum $V_{CE(sat)}$ V	Maximum I_{CBO} nA	Min. f_t MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2838	18	35	75	1.0	100	120	$2.75	$1.68
2N2904*	5	40	40	0.4	20	200	.54	.33
2N2905*	5	40	100	0.4	20	200	.54	.33
2N2906*	18	40	40	0.4	20	200	.43	.26
2N2907*	18	40	100	0.4	20	200	.43	.26
2N3671	5	50	75	0.4	10	200	2.30	1.43
2N3672	18	50	75	0.4	10	200	1.97	1.21
2N3962	18	60	100†	0.4‡	10§	40	.91	.56
2N3963	18	80	100†	0.4‡	10§	50	1.43	.88
2N3964	18	45	250†	0.4‡	10§	50	1.44	.90
2N3965	18	60	250†	0.4‡	10§	50	2.05	1.26

*JAN type available. †At 10 mA. ‡At 5 mA. §I_{EBO}.

NPN CORE AND FILM DRIVERS

$V_{CE(sat)}$ at 500 mA; t_{on} and t_{off} at I_c = 500 mA.

ITT Type	TO-	V_{CEO} V	Maximum $V_{CE(sat)}$ V	Maximum t_{on} nsec	Maximum t_{off} nsec	Min. f_t MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N3252	5	30	0.50	45	70	200	$3.00	$1.85
2N3253	5	40	0.6	45	70	175	3.30	2.00
2N3444	5	50	0.60	45	70	150	4.05	2.45
2N3724	5	30	0.42	35	60	300	.84	.52
2N3725	5	50	0.52	35	60	300	1.57	.92
2N4013	18	30	0.42	35	60	300	1.38	1.14
2N4014	18	50	0.52	35	60	300	2.00	1.23

NPN-PNP SMALL SIGNAL PLASTIC

All transistors have ½" tinned leads and are in line EBC only. Data sheets available on request.

ITT Type	NPN Type	Net Each 1-99	Net Each 100-999	ITT Type	NPN Type	Net Each 1-99	Net Each 100-999
2N3903	GPA	$0.51	$.032	MPS2925	GPS	.33	.22
2N3904	GPA	.51	.32	MPS2926	GP	.24	.17
2N3905*	GPA	.53	.33	MPS3392	AUD	.24	.17
2N3906*	GPA	.53	.33	MPS3393	AUD	.24	.17
2N4123	GPA	.40	.26	MPS3394	AUD	.24	.17
2N4124	GPA	.40	.26	MPS3395	AUD	.33	.22
2N4125*	GPA	.46	.29	MPS3396	AUD	.38	.26
2N4126*	GPA	.46	.29	MPS3638*	GP	.24	.16
2N4400	GPA	.52	.35	MPS3638A*	GP	.28	.17
2N4401	GPS	.52	.35	MPS3693	GPA	.36	.24
2N4402*	GPA	.53	.36	MPS3702*	PWR	.52	.35
2N4403*	GPA	.53	.36	MPS3703*	PWR	.36	.24
MPS-A05	AUD	.55	.40	MPS3704	PWR	.46	.29
MPSA20	AMP	.51	.32	MPS3705	PWR	.46	.29
MPSA55	AMP	.54	.34	MPS3706	PWR	.36	.24
MPSA70	AMP	.54	.34	MPS3708	GPS	.36	.24
MPS706	SW	.24	.16	MPS3709	GPA	.36	.24
MPS706A	SW	.26	.18	MPS3710	GPA	.38	.26
MPS834	SW	.26	.18	MPS3711	GPA	.38	.26
MPS2222	. . .	.46	.29	MPS5172	GPA	.30	.20
MPS2222A	. . .	.46	.29	MPS6530	AMP	.26	.17
MPS2369	SW	.38	.23	MPS6531	AMP	.26	.17
MPS2711	PWR	.24	.16	MPS6532	AMP	.26	.17
MPS2712	PWR	.24	.16	MPS6533*	AMP	.30	.20
MPS2713	SW	.38	.26	MPS6534*	AMP	.30	.20
MPS2714	SW	.36	.24	MPS6535*	AMP	.35	.24
MPS2907*	. . .	.53	.36	MPS6565	GPA	.26	.17
MPS2907A*	. . .	.53	.36	MPS6566	GPA	.26	.17
MPS2924	GPS	.27	.18	MPS6591	AMP	.28	.19

*PNP type.

NPN-PNP SMALL SIGNAL METAL CAN

Data sheets available on request.

ITT Type	NPN Type	Net Each 1-99	Net Each 100-999	ITT Type	NPN Type	Net Each 1-99	Net Each 100-999
2N697	GPA	$0.49	$0.30	2N2904A*‡	DR	$0.54	$0.33
2N743	SW	.55	.34	2N2905A*†	DR	.50	.33
2N744	SW	.55	.34	2N2906A*‡	DR	.43	.26
2N753	SW	.55	.34	2N2907A*†	DR	.43	.26
2N783	SW	.55	.34	2N3012*	SW	1.26	.78
2N834	SW	.54	.33	2N3019	GPA	1.15	.70
2N834A	SW	.68	.41	2N3020	GPA	1.00	.61
2N835	SW	.69	.42	2N3053	GPA	.54	.33
2N869*	GPA	1.42	.88	2N3115	GPA	1.03	.64
2N869A*	GPA	.89	.54	2N3116	GPA	1.04	.67
2N915	R&I	1.48	.92	2N3117	GPA	1.70	.103
2N947	SW	2.94	1.20	2N3134	GPA	1.15	.70
2N2192, A	GPA	1.35	.51	2N3326	GPA	2.77	1.75
2N2192B	GPA	2.15	1.34	2N3502*	DR	1.69	1.04
2N2193	GPA	1.00	.61	2N3503*	DR	2.45	1.52
2N2193A	GPA	1.15	.70	2N3504*	DR	1.69	1.04
2N2193B	GPA	1.42	.88	2N3505*	DR	1.70	1.06
2N2194	GPA	1.00	.61	2N3665	GPA	1.12	1.06
2N2194A	GPA	1.42	.88	2N3666	GPA	1.90	1.15
2N2194B	GPA	1.70	1.03	2N3700	R&I	2.05	1.26
2N2195	GPA	1.00	.61	2N3701	R&I	1.77	1.09
2N2195A	GPA	1.28	.79	2N3734	DR	2.47	1.53
2N2195B	GPA	1.56	.97	2N3945	GPA	1.25	.88
2N2303	GPA	2.74	1.68	2N4030*	GPA	1.00	.61
2N2405	GPA	1.40	.86	2N4031*	GPA	1.04	.87
2N2509	GPA	1.43	.88	2N4032*	GPA	1.15	.70
2N2510	GPA	1.43	.88	2N4033*	GPA	1.42	.88
2N2511	GPA	2.26	1.40	2N4046	DR	1.28	.79
2N2651	SW	2.70	1.67	2N4047	DR	1.42	.88
2N2710	SW	1.62	1.00	2N4137	SW	1.00	.61
2N2801	DR	2.75	1.68				

*PNP type. †JAN and JANTX; ‡JAN type available.

intel® SEMICONDUCTOR MEMORIES, SHIFT REGISTERS, DECODERS AND DRIVERS

Silicon Gate low threshold technology allows design and production of higher performance MOS circuits; provides a higher functional density on a monolithic chip than conventional MOS technologies. Provides excellent protection against contamination.

Schottky barrier diode clamped transistors allow faster switching speeds than conventional gold diffusion process devices.

Package Prefix: C, ceramic, metal lid, hermetic DIP; **D,** cerdip, glass seal, hermetic DIP; **M,** metal can, hermetic; **P,** silicon plastic DIP.

Power Dissipation calculated with maximum power supply current and nominal power supply voltages.

RANDOM ACCESS MEMORIES (RAM)

T_A = 0° C to +70° C except Schottky bipolar types, T_A = 0° C to +75° C.

Process	Intel Type	No. of Bits	Description	Organization	Maximum Access Time nsec	Maximum Cycle Time nsec	P_D mW	Supplies V	Net Each, Lots of 1-24	25-99	100-999
Silicon Gate MOS	P1101A†	256	Static fully decoded	256 x 1	1.5*	1.5*	685	+5, −9	$ 9.50	$ 6.95	$ 6.15
	P1101A1†	256	Hi-speed static fully decoded	256 x 1	1.0*	1.0*	685	+5, −9	11.40	8.30	7.40
	P1103†‡	1024	Dynamic fully decoded	1024 x 1	300	580	400	+16, +19	11.70	8.85	7.80
	P2101†	1024	Static, separate I/O	256 x 4	1.0*	1.0*	350	+5	6.20	4.50	4.00
	P2101-1†				500	500			7.65	5.60	4.95
	P2102A†	1024	Static fully decoded	1024 x 1	1.0*	1.0*	350	+5	7.50	6.15	5.05
	P2102A-2†				250	250			8.40	6.85	5.60
	P2102A-4†				450	450			6.95	5.50	4.70
	C2107A	4096	Dynamic fully decoded	4096 x 1	300	700	458	+12, ±5	30.60	23.90	18.90
	C2107A-1				280	550	516		32.05	25.00	19.80
	C2107A-4				350	840	405		29.15	21.30	18.00
	C2107A-5				420	970	376		26.25	20.10	16.20
	C2107A-8				420	970	376		18.50	14.15	12.60
	C2107B				200	400	648		34.95	27.30	21.60
	C2107B-4				270	470	648		24.00	19.00	15.00
	P2111†	1024	Static, common I/O with output deselect	256 x 4	1.0*	1.0*	350	+5	6.20	4.50	4.00
	P2111-1†				500	500			7.65	5.60	4.95
	P2111-2†				650	650			6.20	4.50	4.00
	P2112†	1024	Static, common I/O without output deselect	256 x 4	1.0*	1.0*	350	+5	6.20	4.50	4.00
	P2112-2†				650	650			6.20	4.50	4.00
Schottky Bipolar	P3101‡	64	Fully decoded	16 x 4	60	60	525	+5	6.60	5.30	4.45
	P3101A‡	64	Hi-speed fully decoded	16 x 4	35	35	525	+5	8.25	6.60	5.50
	P3106‡	256	Hi-speed fully decoded (with 3-state output)	256 x 1	80	80	650	+5	9.10	6.65	5.90
	P3106-8‡				80	80			7.20	4.80	4.00
	P3106A‡				60	70			10.50	8.40	7.00
	P3107‡	256	Hi-speed fully decoded (w/open collector output)	256 x 1	80	80	650	+5	9.10	6.65	5.90
	P3107-8‡				60	70			7.20	4.80	4.00
	P3107A‡				60	70			10.50	8.40	7.00
Silicon Gate CMOS	P5101†	1024	Static CMOS	256 x 4	605	650	142	+5	28.00	20.60	18.20
	P5101-3†								23.50	17.30	15.25
	P5101L†								30.80	22.65	20.00
	C3104	16	Content addressable memory	4 x 4	30	40	625	+5	44.00	35.50	28.00

*μsec. †Also available in **C** package; ‡Also available in **D** package; prices on request.

READ ONLY MEMORIES (ROM)

T_A under bias = 0° C to +70° C except Schottky bipolar types, T_A = 0° C to +75° C.

Process	Intel Type	No. of Bits	Description	Organization	Maximum Access Time	P_D mW	Supplies V	Net Each, Lots of 1-24	25-99	100-999
Silicon Gate MOS	C1302	2048	Static metal mask programmable ROM code converter: EBCDIC/ASCII8	256 x 8	1.0 μs	700	+5, −9	*	*	*
	C1302/0002							$25.50	$18.60	$16.50
	C1602A	2048	Static electrically programmable PROM—metal lid	256 x 8	1.0 μs	700	+5, −9	41.75	33.40	27.90
	C1602A-6				1.5 μs			38.00	30.50	25.25
	C1702A	2048	Static erasable electrically programmable PROM—quartz lid	256 x 8	1.0 μs	700	+5, −9	38.00	28.45	25.25
	C1702AL6				1.5 μs			45.60	34.15	30.30
	P2308†	8192	Mask programmable PROM	1024 x 8	.5 μs	700	+12, ±5	*	*	*
	P2316A†	16,384	Mask programmable PROM	2048 x 8	.85 μs	500	+5	*	*	*
	C2704	4096	Erasable and electrically programmable PROM	512 x 8	.5 μs	750	+12, ±5	60.50	44.40	39.30
	C2704-5				1.0 μs			59.30	43.50	38.50
Schottky Bipolar	P3301A‡	1024	Mask programmable ROM w/open collector output	256 x 4	45 ns	657	+5	*	*	*
	D3302	2048	Mask programmable ROM w/open collector output	512 x 4	70 ns	735	+5	*	*	*
	D3302-4				90 ns	735		*	*	*
	D3302L-6				90 ns	580		*	*	*
	D3304A	4096	Mask programmable ROM w/open collector output	512 x 8	70 ns	998	+5	*	*	*
	D3304A-4				90 ns	998		*	*	*
	D3322	2048	Mask programmable ROM w/3-state output	512 x 4	70 ns	735	+5	*	*	*
	D3322-4				90 ns	735		*	*	*
	D3322L-6				90 ns	580		*	*	*
	D3324A	4096	Mask programmable ROM w/3-state output	512 x 8	70 ns	998	+5	*	*	*
	D3324A-4				90 ns	998		*	*	*
	D3601	1024	Electrically programmable PROM w/open collector output	256 x 4	70 ns	685	+5	8.35	6.95	5.50
	D3601-1				50 ns			10.90	8.80	7.15
	D3602	2048	Electrically programmable PROM w/open collector output	512 x 4	70 ns	735	+5	14.95	11.95	9.95
	D3602-4				90 ns	735		13.65	10.95	9.10
	D3604	4096	Electrically programmable PROM w/open collector output	512 x 8	70 ns	998	+5	29.85	23.90	19.90
	D3604-4				90 ns	998		27.30	21.85	18.20
	D3604L-6				90 ns	735		35.85	27.80	23.90
	D3621	1024	Electrically programmable PROM w/3-state output	256 x 4	70 ns	685	+5	8.35	6.95	5.50
	D3621-1				50 ns	685		10.90	8.80	7.15
	D3622	2048	Electrically programmable PROM w/3-state output	512 x 4	70 ns	735	+5	14.95	11.95	9.95
	D3622-4				90 ns	735		13.65	10.95	9.10
	D3624	4096	Electrically programmable PROM w/3-state output	512 x 8	70 ns	998	+5	29.85	23.90	19.90
	D3624-4				90 ns			27.30	21.85	18.20

*If a tape is supplied in the proper format, there will be additional charge of **$10.00** per unit for programming. If the program is provided as a truth table only, a one-time set-up charge of **$90.00** per pattern will be made for converting to tape, in addition to the **$10.00** charge per unit for programming. †There is a **$35.00** set-up charge for programming of less than 100 devices of a single pattern and an additional programming charge of **$4.00** for 1–9 units or **$2.00** for 10–99 units. For released quantities of 100 or more of a single pattern, there is no set-up or programming charge. If the truth table is not submitted as a tape of the appropriate format, there will be an additional charge of **$90.00** for transcribing the truth table to a punched paper tape. #Minimum order is 100 pieces per pattern. Masking charge (incl. 3 units) is **$600.00** per pattern. §Minimum order is 100 pieces per pattern. Masking charge (incl. 3 units) is **$750.00** per pattern. *For prices contact factory or sales representative.

MCS-80 SYSTEM C

The MCS-80 N-channel, 8-bit, single-chip, microprocessor system, is complete with everything that is needed to put the 8080A to work. The 8080A is a complete 8-bit parallel central processing unit (CPU) for use in general purpose digital computer systems. A complete microcomputer system is formed when the 8080A CPU is interfaced with I/O ports and memory. When combined with Intel's growing family of performance-matched components, the result is the fastest, most powerful microcomputer system available. The MCS-80 features: the 8080A CPU; address capability—65 kilobytes of memory; 2.0 microsec. instruction cycle; binary and decimal arithmetic; separate address and data lines to simplify system design; powerful instruction set—unlimited subroutine nesting—multilevel interrupt and interrupt processing commands; performance matched peripheral circuits—memory and I/O latches permit easy interface; decoded control signals; up to 256 I/O ports—simplified I/O instructions.

MCS SYSTEM C COMPONENTS

Intel Type	Description	Net Each, Lots of 1-24	25-99	100-499
MC8080A	8-bit CPU (1.5 μsec cycle) MIL temp. range	$250.00	$185.00	$125.00
C8080A	8-bit CPU (2 μsec cycle)	75.00	60.00	40.00
C8080A-1	8-bit CPU (1.3 μsec cycle)	115.00	90.00	60.00
C8080A-2	8-bit CPU (1.5 μsec cycle)	90.00	72.00	48.00
C8102A-4	1024-bit Fully Decoded Static RAM (450 nsec.)	10.20	7.80	6.85
C8101	256 x 4 bit Fully Decoded Static RAM (1.3 μsec)	7.50	5.70	5.45
P8101	256 x 4 bit Fully Decoded Static RAM (1.3 μsec)	5.90	4.25	3.60
C8101-2	256 x 4 Fully Decoded Static RAM (850 nsec.)	9.30	6.75	6.00
P8101-2	256 x 4 bit Fully Decoded Static RAM (850 nsec.)	6.20	4.50	4.00
MC8102A	1024-bit Fully Decoded Static RAM (450 nsec) MIL Temp. Range	16.20	11.90	10.40
P8102A-4	1024-bit Fully Decoded Static RAM (450 nsec.)	6.95	5.50	4.70
C8102A-6	1024-bit Fully Decoded Static RAM (650 nsec.)	7.40	6.00	4.95
P8102A-6	1024-bit Fully Decoded Static RAM (650 nsec.)	4.20	3.40	2.80
C8107B	4096-bit Dynamic RAM (420 nsec)	20.60	16.30	13.00
C8111	256 x 4 bit Fully Decoded Static RAM (1.3 μsec)	7.50	5.70	5.45
P8111	256 x 4 bit Fully Decoded Static RAM (1.3 μsec)	5.90	4.25	3.60
C8111-2	256 x 4 bit Fully Decoded Static RAM (850 nsec)	9.30	6.75	6.00
P8111-2	256 x 4 bit Fully Decoded Static RAM (850 nsec)	6.20	4.50	4.00
C8205	1-of-8 Binary Decoder	7.45	5.40	4.80
P8205	1-of-8 Binary Decoder	4.35	3.15	2.80
D8210	Quad TTL to MOS Level Shifter/ Driver	7.70	5.60	5.25
C8212	8-bit Input/Output Port	9.70	7.15	5.45
P8212	8-bit Input/Output Port	4.60	3.30	2.90
C8214	Interrupt Control Unit (ICU)	16.75	14.25	11.65
P8214	Interrupt Control Unit (ICU)	13.00	10.40	9.75
D8216	Non-Interrupt, Bi-Directional Bus Driver	6.40	4.50	3.90
MD8216	Non-Inverting, Bi-Directional Bus Driver, MIL Temp. Range	11.60	8.10	7.05

*Unprogrammed—All authorized Intel distributors are equipped to program the Intel PROMs. Contact local distributor for programming charges. *For prices, contact factory or sales representative. #Minimum order is 100 pieces per pattern. Masking charge is **$600.00** per pattern. †Minimum order is 100 pieces per pattern. Masking charge is **$1000.00** per pattern. ‡Minimum order is 100 pieces per pattern. Masking charge is **$1100.00** per pattern.

SPACE DOES NOT PERMIT LISTING OF ALL RELATED COMPONENTS. WRITE FOR INFORMATION ON ALL UNLISTED ITEMS.

INTELLEC® MDS MICROCOMPUTER DEVELOPMENT SYSTEM

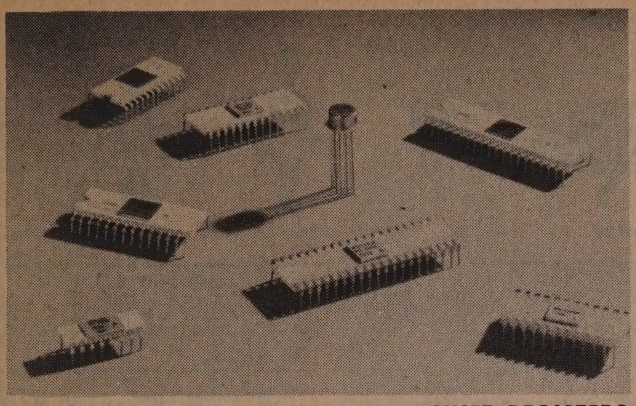
The Intellec MDS-800 is a complete microcomputer development system designed to support the development and implementation of MCS™-80 and Series 3000 microcomputer systems. The basic Intellec MDS-800 includes an 8080 CPU; universal bus with multiprocessor and DMA capabilities; 8 level maskable priority interrupt structure; real time clock; 256 byte bootstrap loader; 2K byte ROM memory; 16K byte RAM memory; and interfaces for the following peripherals: teletype, CRT, high-speed paper tape reader, high-speed paper tape punch, line printer and universal PROM programmer. Standard software includes a ROM resident system monitor, RAM resident 8080 macroassembler, and text editor.

Intellec MDS-800 System—Net Each..... **$3,950.00**

INTELLEC MDS OPTIONS

Intel Type	Description	Net Each
	MEMORY	
MDS-016	16K RAM memory—2107 N-channel dynamic RAM	$975.00
MDS-406	6K PROM memory—contains sockets for twenty-four 8702A PROMs	250.00
	INPUT/OUTPUT	
MDS-501	DMA Channel Controller—2 MHz transfer rate, PC board edge connector included. (The cable assembly is optional.)	$350.00
MDS-504	General Purpose I/O module—4 latched or unlatched input ports, 8 latched output ports, 8 system interrupt lines all TTL compatible, PC board edge connector included. (The cable assembly is optional.)	290.00
	PERIPHERALS	
MDS-PTR	High Speed Paper Tape Reader—200 Hz transfer rate. Cable assembly included.	$975.00
MDS-DOS	Diskette Operating System—includes Diskette drive, cabinet, power supplies, controller, cable assembly, system software, and one ¼ million byte floppy Diskette.	2,450.00
MDS-DRV	Diskette Drive—add-on drive and one ¼ million byte floppy Diskette.	900.00
	EMULATORS/SIMULATORS	
	IN-CIRCUIT EMULATORS	
MDS-30-ICE	3001 Microprogram Control Unit (MCU) In-Circuit Emulator. Cable assembly included.	$850.00
MDS-80-ICE	8080 CPU In-Circuit Emulator. Cable assembly included.	1,250.00
	ROM SIMULATORS	
SIM-101	8K bit bipolar ROM simulator configurable as 512 x 16 or 1024 x 8. Access time 130 nsec. max. A maximum of 4 units may be resident with the Intellec MDS. Includes cable kit to simulate the 3601 or 3301A ROM's.	$800.00
SIM-102	Same as SIM-101, except includes cable kit to simulate 3602/3622/ 3302/3322 ROM's.	800.00
SIM-104	Same as SIM-101, except includes cable kit to simulate 3604/3624/3304A/ 3324A/8604 ROM's.	800.00
	ADDITIONAL ROM SIMULATOR CABLE KITS	
SIM-361	Cable kit to simulate 3601or 3301A ROM's	$ 90.00
SIM-362	Cable kit to simulate 3602/3622/ 3302/3322 ROM's.	90.00
SIM-364	Cable kit to simulate 3604/3624/ 3304A/3324A/8604 ROM's.	90.00
	PROM PROGRAMMERS	
UPP-101	Universal PROM Programmer—includes cabinet, power supplies, cable and one 16/24 pin, zero-insertion-force PROM programming socket pair. At least one personality card must be specified, but price shown does not include selected personality card(s).	$650.00
UPP-102	Same as UPP-101, except includes a 24/24 pin PROM programming socket pair in place of the 16/24 pin pair	650.00
	ADDITIONAL PROM PROGRAMMING SOCKETS	
UPP-501	16-pin/24-pin PROM programming socket pair.	$ 50.00
UPP-502	24-pin/PROM programming socket pair.	50.00
	PERSONALITY CARDS	
UPP-361	3601 Personality Card	$300.00
UPP-864	8404/3604/3624 Personality Card	300.00
UPP-872	8702A/1702A Personality Card	300.00
UPP-878	8708/8704/2708/2704 Personality Card	300.00

MOSTEK MOS/LSI Integrated Circuits



• TTL/DTL COMPATIBLE

MOSTEK standard products are designed for ease of use and state-of-the-art performance at economical prices. These attributes result from MOSTEK's extensive use of ion-implantation in product manufacturing, a process MOSTEK pioneered and developed. TTL/DTL compatibility is stressed for those products designed to be used in conjunction with bipolar logic circuitry. Other products are designed for specific market areas, including instrumentation and consumer/industrial clocks and timing. TTL/DTL compatible except as otherwise noted. Package: Suffix **L**, TO-100; suffix **P**, hermetic ceramic dual-in-line; **N**, plastic dual-in-line.

SHIFT REGISTERS

MOSTEK Number	Pkg.	Leads	Description	Maximum Frequency	Net Each, Lots of 1-24	25-99	100-999
MK 1002P	DIP	16	Dual 128-bit static	1 MHz	$10.00	$ 8.00	$6.50
MK 1002N	DIP	16	Dual 128-bit static	1 MHz	9.00	7.50	5.00
MK 1002L	TO-100	10	Dual 128-bit static; without recirculate	1 MHz	7.20	6.00	4.00
MK 1007P	DIP	16	Quad 80-bit dynamic	2.5 MHz	8.00	7.00	5.00
MK 1007N	DIP	16	Quad 80-bit dynamic	2.5 MHz	7.50	6.50	4.50

READ ONLY MEMORIES

Products shown are pre-programmed with the indicated coding. Custom coding also available.

MOSTEK Number	DIP Pkg. Leads	Description	Maximum Access Time	Net Each, Lots of 1-24	25-99	100-999
MK 2002P	24	Column output character generator—2240 bits	700 ns	$17.50	$13.25	$12.00
MK 2302P	24	Column output character generator—2240 bits	1 μs	17.50	13.25	12.00
MK 2408P	28	2560-bit character generator—row output	600 ns	19.00	16.50	11.00
MK 2503P	24	4096-bit static ASCII/EBCDIC to	700 ns	19.00	16.50	11.00
MK 2601P	24	EBCDIC/ASCII code converter	700 ns	19.00	16.50	11.00
MK 28000P	24	16K ROM, 2048 x 8 or 4K x 4 bits	600 ns	45.00	39.00	25.00

RANDOM ACCESS MEMORIES

MK 4006P6	16	1024 x 1 bit dynamic RAM	400 ns	$16.75	$15.00	$13.50
MK 4007P1	16	256 x 1 bit static RAM	900 ns	8.00	6.00	5.00
MK 4007N1	16	256 x 1 bit static RAM	900 ns	7.20	5.50	4.00
MK 4007P4	16	256 x 1 bit static RAM, ITTL load	900 ns	7.50	5.50	4.75
MK 4007N4	16	256 x 1 bit static RAM, ITTL load	900 ns	.....	.....	.....
MK 4008P6	16	1024 x 1 bit dynamic RAM	500 ns	13.50	11.50	9.50
MK 4008P9	16	1024 x 1 bit dynamic RAM	1 μs	7.80	5.40	4.05
MK 4096P1	16	4096 x 1 bit dynamic RAM	350 ns	43.20	33.00	24.00
MK 4096P6	16	4096 x 1 bit dynamic RAM	200 ns	35.00	25.00	20.00
MK 4096P7	16	4096 x 1 bit dynamic RAM	300 ns	45.00	35.00	26.00
MK 4102P1	16	1024 x 1 bit static RAM	450 ns	18.00	14.50	12.00
MK 4102P6	16	1024 x 1 bit static RAM	275 ns	19.20	15.50	13.00
MK 4102N1	16	1024 x 1 bit static RAM	450 ns	10.80	8.25	6.00
MK 4102N6	16	1024 x 1 bit static RAM	275 ns	16.20	12.38	9.00

SPECIAL PRODUCTS

MOSTEK Number	DIP Pkg. Leads	Description	Net Each, Lots of 1-24	25-99	100-999
MK 5002P	28	4 digit/CNTR/LATCH/DCDER, 7 segment & BCD out	$22.00	$17.00	$11.50
MK 5002N	28	4 digit/CNTR/LATCH/DCDER, 7 segment & BCD out	14.00	12.00	8.00
MK 5005P	24	4 digit/CNTR/LATCH/DCDER, 7 segment out	18.00	15.00	10.00
MK 5007P	16	4 digit/CNTR/LATCH/DCDER, BCD out	18.00	15.00	10.25
MK 5007N	16	4 digit/CNTR/LATCH/DCDER, BCD out	10.80	9.00	6.00
MK 5009P	16	Counter/Time base	15.00	12.00	8.00
MK 5009N	16	Counter/Time base	8.00	6.00	5.00
MK 50240N	16	Top octave freq. gen.	15.00	12.00	8.00
MK 50395N	40	6 decade UP/DWN cntr, BCD & 7 segment out	28.00	24.00	18.50

CONSUMER PRODUCTS (NOT TTL COMPATIBLE)

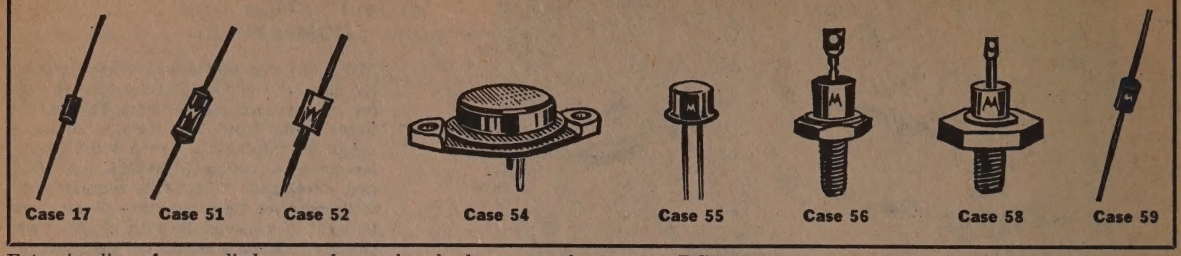
MK 50281N	28	5 func., 8 digit, mem. calc. chip	$15.30	$12.75	$ 8.50
MK 50282N	28	5 func., 8 digit, calc. chip	15.30	12.75	8.50
MK 50283N	28	6 func., 8 digit, calc. chip	15.30	12.75	8.50
MK 50075N	40	Calculator ALU	24.30	20.25	13.50
MK 5010XN	16	Calculator ROM	17.10	14.25	9.50
MK 50250N	28	Digital alarm clock chip	10.00	7.50	5.50
MK 50380N	40	Non MUX, Radio clock chip, direct LED drive	10.00	7.50	5.50
MK 50310N	28	7 func., Slide rule calc. chip	18.00	13.75	10.00
MK 50311N	28	9 func. mem. calc. chip	14.40	11.00	8.00
MK 5030E	24	LED Watch, 12 hr., Hr/min/date/sec.	32.40	27.00	18.00
MK 5030M	20	LED Watch, 12 hr., Hr/min/date/sec.	28.80	24.00	16.00
MK 50010E	40	LCD Watch, 12 hr., Hr/min/date/sec.	32.40	27.00	18.00
MK 50010M	40	LCD Watch, 12 hr., Hr/min/date/sec.	28.00	24.00	16.00

MICROPROCESSOR AND SUPPORT PRODUCTS

MOSTEK Number	Description	Net Each, Lots of 1-9	10-49
MK 5065P	8 bit microprocessor, 3 interrupts	$ 99.00	$ 83.00
D5065-01	MK 5065 Cross assembler source listing	20.00	.....
D5065-02	MK 5065 Cross assembler source deck	100.00	.....
D5065-03	MK 5065 Software users manual	20.00	.....
D5065-04	MK 5065 Microcomputer schematics	20.00	.....
D5065-07	Microprocessor evaluation package using 4102 memory	197.00	.....
D5065-08	Microprocessor evaluation package using 4008-9 memory	197.00	.....

MOTOROLA Semiconductors

SILICON ZENER DIODES



Extensive line of zener diodes may be employed where a nearly constant DC output voltage is required despite relatively large changes in input voltage or load resistance. The zener voltage is measured at approximately ¼ the rated power except for 1N4099 Series which is measured with an I_{ZT}=250 μADC, and 1N4370 and 1N746 Series which is measured with an I_{ZT}=20 mADC. Standard voltage tolerances of ±5%, ±10% and ±20%; low and high level zener chips; intermediate voltages and tighter tolerances; non-standard devices available to meet virtually any zener diode requirement. MIL types available as noted.

250-mW LOW NOISE (CASE 51)

Test Current (I_{ZT}): 0.250 μA. **Tol.:** ±5%. Also Available: 1N4099–1N4135 JAN, JTX to MIL-S-19500/435.

Motorola Type	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ω	Motorola Type	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ω
1N4099	6.8	200	1N4118	27	150
1N4100	7.5	200	1N4119	28	200
1N4101	8.2	200	1N4120	30	200
1N4102	8.7	200	1N4121	33	200
1N4103	9.1	200	1N4122	36	200
1N4104	10	200	1N4123	39	200
1N4105	11	200	1N4124	43	250
1N4106	12	200	1N4125	47	250
1N4107	13	200	1N4126	51	300
1N4108	14	200	1N4127	56	300
1N4109	15	100	1N4128	60	400
1N4110	16	100	1N4129	62	500
1N4111	17	100	1N4130	68	700
1N4112	18	100	1N4131	75	700
1N4113	19	150	1N4132	82	800
1N4114	20	150	1N4133	87	1000
1N4115	22	150	1N4134	91	1200
1N4116	24	150	1N4135	100	1500
1N4117	25	150			

Motorola Type	Net Each, Lots of 1-99	100-999
1N4099-1N4135	$3.85	$2.90

400-mW DIFFUSED (CASE 51)

Also Available: 1N962B–1N992B JAN, JTX to MIL-S-19500/117; S1N962B–S1N973B NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-999
1N957	6.8	18.5	4.5		
1N958	7.5	16.5	5.5	±20% Tol.	±20% Tol.
1N959	8.2	15	6.5	$2.15	$1.60
1N960	9.1	14	7.5		
1N961	10.0	12.5	8.5		
1N962	11	11.5	9.5		
1N963	12	10.5	11.5	±10%* Tol.	±10%* Tol.
1N964	13	9.5	13.0	$2.35	$1.75
1N965	15	8.5	16.0		
1N966	16	7.8	17.0		
1N967	18	7.0	21		
1N968	20	6.2	25	±5%† Tol.	±5%† Tol.
1N969	22	5.6	29	$2.95	$2.15
1N970	24	5.2	33		
1N971	27	4.6	41		
1N972	30	4.2	49		
1N973	33	3.8	58	±20% Tol.	±20% Tol.
1N974	36	3.4	70	$2.15	$1.60
1N975	39	3.2	80		
1N976	43	3.0	93		
1N977	47	2.7	105	±10%* Tol.	±10%* Tol.
1N978	51	2.5	125	$2.35	$1.75
1N979	56	2.2	150		
1N980	62	2.0	185		
1N981	68	1.8	230	±5%† Tol.	±5%† Tol.
1N982	75	1.7	270	$2.95	$2.15
1N983	82	1.5	330		
1N984	91	1.4	400		
1N985	100	1.3	500	±20% Tol.	±20% Tol.
1N986	110	1.1	750	$2.60	$1.95
1N987	120	1.0	900		
1N988	130	0.95	1100	±10%* Tol.	±10%* Tol.
1N989	150	0.85	1500	$3.00	$2.25
1N990	160	0.80	1700		
1N991	180	0.68	2200	±5%† Tol.	±5%† Tol.
1N992	200	0.65	2500	$3.65	$2.75

To Order Add Suffix: *A (1N957A); †B (1N957B).

400-mW LOW VOLTAGE (CASE 51)

Also Available: 1N746A–1N4372A JAN, JTX to MIL-S-19500/127; S1N746A–S1N759A NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-999
1N746	3.3	20	28		
1N747	3.6	20	24		
1N748	3.9	20	23		
1N749	4.3	20	22		
1N750	4.7	20	19	±10% Tol.	±10% Tol.
1N751	5.1	20	17	$2.00	$1.50
1N752	5.6	20	11		
1N753	6.2	20	7		
1N754	6.8	20	5		
1N755	7.5	20	6	±5% * Tol.	±5%* Tol.
1N756	8.2	20	8	$2.75	$2.05
1N757	9.1	20	10		
1N758	10.0	20	17		
1N759	12.0	20	30		
1N4370	2.4	20	30		
1N4371	2.7	20	30		
1N4372	3.0	20	29		

1-WATT LOW VOLTAGE (CASE 52)

Also Available: 1N3821A–1N3828A JAN, JTX to MIL-S-19500/115.

1N3821	3.3	76	10		
1N3822	3.6	69	10	±10% Tol.	±10% Tol.
1N3823	3.9	64	9	$2.10	$1.60*
1N3824	4.3	58	9		
1N3825	4.7	53	8		
1N3826	5.1	49	7		
1N3827	5.6	45	5	±5%* Tol.	±5%* Tol.
1N3828	6.2	41	2	$2.65	$2.00*
1N3829	6.8	37	1.5		
1N3830	7.5	34	1.5		

1-WATT SURMETIC™ (CASE 59)

1N4728	3.3	76	10		
1N4729	3.6	69	10		
1N4730	3.9	64	9		
1N4731	4.3	58	9		
1N4732	4.7	53	8		
1N4733	5.1	49	7		
1N4734	5.6	45	5		
1N4735	6.2	41	2		
1N4736	6.8	37	3.5		
1N4737	7.5	34	4		
1N4738	8.2	31	4.5		
1N4739	9.1	28	5		
1N4740	10	25	7		
1N4741	11	23	8	±10% Tol.	±10% Tol.
1N4742	12	21	9	$1.26	$0.95
1N4743	13	19	10		
1N4744	15	17	14		
1N4745	16	15.5	16		
1N4746	18	14	20		
1N4747	20	12.5	22		
1N4748	22	11.5	23	±5%* Tol.	±5%* Tol.
1N4749	24	10.5	25	$1.93	$1.45
1N4750	27	9.5	35		
1N4751	30	8.5	40		
1N4752	33	7.5	45		
1N4753	36	7	50		
1N4754	39	6.5	60		
1N4755	43	6	70		
1N4756	47	5.5	80		
1N4757	51	5	95		
1N4758	56	4.5	110		
1N4759	62	4	125		
1N4760	68	3.7	150		
1N4761	75	3.3	175		
1N4762	82	3.0	200		
1N4763	91	2.8	250		
1N4764	100	2.5	350		

*To order add suffix **A** (1N746**A**, 1N3821**A**, 1N4728**A**). *100–299 quantity.

500-mW SURMETIC

Tolerance, ±10%; for ±5% tolerance, change suffix A to **B** (1N5221**B**, 1N5873**B**). Other standard voltages available: 2.5, 2.8, 6.0, 8.7, 14, 17, 19, 25, 28, 60, 87, 140, 170 and 190.

Motorola Type Case 51	Motorola Type Case 182	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ohms
1N5221A	1N5837A	2.4	30
1N5223A	1N5839A	2.7	30
1N5225A	1N5841A	3.0	29
1N5226A	1N5842A	3.3	28
1N5227A	1N5843A	3.6	24
1N5228A	1N5844A	3.9	23
1N5229A	1N5845A	4.3	22
1N5230A	1N5846A	4.7	19
1N5231A	1N5847A	5.1	17
1N5232A	1N5848A	5.6	11
1N5234A	1N5850A	6.2	7
1N5235A	1N5851A	6.8	5
1N5236A	1N5852A	7.5	6
1N5237A	1N5853A	8.2	8
1N5239A	1N5855A	9.1	10
1N5240A	1N5856A	10	17
1N5241A	1N5857A	11	22
1N5242A	1N5858A	12	30
1N5243A	1N5859A	13	13
1N5245A	1N5861A	15	16
1N5246A	1N5862A	16	17
1N5248A	1N5864A	18	21
1N5250A	1N5866A	20	25
1N5251A	1N5867A	22	29
1N5252A	1N5868A	24	33
1N5254A	1N5870A	27	41
1N5256A	1N5872A	30	49
1N5257A	1N5873A	33	58
1N5258A	1N5874A	36	70
1N5259A	1N5875A	39	80
1N5260A	1N5876A	43	93
1N5261A	1N5877A	47	105
1N5262A	1N5878A	51	125
1N5263A	1N5879A	56	150
1N5265A	1N5881A	62	185
1N5266A	1N5882A	68	230
1N5267A	1N5883A	75	270
1N5268A	1N5884A	82	330
1N5270A	1N5886A	91	400
1N5271A	1N5887A	100	500
1N5272A	1N5888A	110	750
1N5273A	1N5889A	120	900
1N5274A	1N5891A	130	1100
1N5276A	1N5892A	150	1500
1N5277A	1N5893A	160	1700
1N5279A	1N5895A	180	2200
1N5281A	1N5897A	200	2500

±10% TOLERANCE

Motorola Type	Net Each, Lots of 1-24	25-99	100-249
1N5221A–1N5257A	$0.90	$0.80	$0.60
1N5258A–1N5270A	1.12	1.00	.75
1N5271A–1N5281A	1.50	1.33	1.00

Motorola Type	1-99	100-499	500-999
1N5837A–1N5873A	$0.72	$0.54	$0.49
1N5874A–1N5886A	.90	.68	.60
1N5887A–1N5897A	1.20	.90	.81

±5% TOLERANCE

Motorola Type	Net Each, Lots of 1-24	25-99	100-249
1N5221B–1N5257B	$1.05	$0.93	$0.70
1N5258B–1N5270B	1.27	1.13	.85
1N5271B–1N5281B	1.65	1.46	1.10

Motorola Type	1-99	100-499	500-999
1N5837B–1N5873B	$0.84	$0.63	$0.57
1N5874B–1N5886B	1.02	.77	.68
1N5887B–1N5897B	1.31	1.00	.90

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

MOTOROLA Semiconductors — SILICON ZENER DIODES

1-WATT DIFFUSED (CASE 52)

Also Available: 1N3016B–1N3051B JAN, JTX, JTXV to MIL-S-19500/115; S1N3016B–S1N3051B NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	Test I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-299
1N3016	6.8	37	3.5		
1N3017	7.5	34	4.0		
1N3018	8.2	31	4.5		
1N3019	9.1	28	5.0		
1N3020	10	25	7		
1N3021	11	23	8	±20% Tol.	±20% Tol.
1N3022	12	21	9	$2.85	$2.15
1N3023	13	19	10		
1N3024	15	17	14		
1N3025	16	15.5	16		
1N3026	18	14	20		
1N3027	20	12.5	22		
1N3028	22	11.5	23		
1N3029	24	10.5	25	±10%* Tol.	±10%* Tol.
1N3030	27	9.5	35	$3.20	$2.40
1N3031	30	8.5	40		
1N3032	33	7.5	45		
1N3033	36	7.0	50		
1N3034	39	6.5	60		
1N3035	43	6.0	70		
1N3036†	47	5.5	80		
1N3037	51	5.0	95	±5%† Tol.	±5%† Tol.
1N3038	56	4.5	110	$3.70	$2.80
1N3039	62	4.0	125		
1N3040	68	3.7	150		
1N3041	75	3.3	175		
1N3042	82	3.0	200		
1N3043	91	2.8	250		
1N3044	100	2.5	350		
1N3045	110	2.3	450	±20% $2.95	±20% $2.20
1N3046	120	2.0	550		
1N3047	130	1.9	700		
1N3048	150	1.7	1000	±10%* $3.25	±10%* $2.45
1N3049	160	1.6	1100		
1N3050	180	1.4	1200	±5%† $4.65	±5%† $3.50
1N3051	200	1.2	1500		

To Order Add Suffix: *A (1N3016A); †B (1N3016B). ‡Not available in ±10% tol.

1½-WATT DIFFUSED (CASE 55)

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-299
1N3785	6.8	55	2.7		
1N3786	7.5	50	3.0		
1N3787	8.2	46	3.5		
1N3788	9.1	41	4.0		
1N3789	10	37	5		
1N3790	11	34	6	±20% Tol.	±20% Tol.
1N3791	12	31	7	$3.75	$2.80
1N3792	13	29	8		
1N3793	15	25	10		
1N3794	16	23	11		
1N3795	18	21	13		
1N3796	20	19	15		
1N3797	22	17	16		
1N3798	24	16	17	±10%* Tol.	±10%* Tol.
1N3799	27	14	20	$5.30	$4.00
1N3800	30	12	25		
1N3801	33	11	30		
1N3802	36	10	35		
1N3803	39	10	40		
1N3804	43	9.0	45		
1N3805	47	8.0	55		
1N3806	51	7.4	65	±5%† Tol.	±5%† Tol.
1N3807	56	6.7	75	$6.95	$5.25
1N3808	62	6.0	85		
1N3809	68	5.5	95		
1N3810	75	5.0	110		
1N3811	82	4.5	130		
1N3812	91	4.1	150		
1N3813	100	3.7	200		
1N3814	110	3.4	300	$4.75‡	$3.55‡
1N3815	120	3.1	350	6.45§	4.85§
1N3816	130	2.9	400	8.35#	6.30#
1N3817	150	2.5	700	$4.75‡	$3.55‡
1N3818	160	2.3	750	7.05§	5.30§
1N3819	180	2.1	800	8.80#	6.60#
1N3820	200	1.9	1000		

To Order Add Suffix: *A (1N3785A); †B (1N3785B). ‡For ±20% tolerance. §For ±10% tolerance, add suffix A. #For ±5% tolerance, add suffix B.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SEE PREVIOUS PAGE FOR CASE ILLUSTRATIONS.

5-WATT SURMETIC™ (CASE 17)

Tolerance ±10%; for ±5%, use suffix B (1N5333B). Tolerance of ±20% available at same price as ±10% tolerance: Specify 1N5333–1N5388 (no suffix).

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N5333A	3.3	380	3.0		
1N5334A	3.6	350	2.5		
1N5335A	3.9	320	2.0		
1N5336A	4.3	290	2.0		
1N5337A	4.7	260	2.0		
1N5338A	5.1	240	1.5		
1N5339A	5.6	220	1.0		
1N5341A	6.2	200	1.0		
1N5342A	6.8	175	1.0		
1N5343A	7.5	175	1.5		
1N5344A	8.2	150	1.5		
1N5346A	9.1	150	2.0		
1N5347A	10	125	2.0		
1N5348A	11	125	2.5		
1N5349A	12	100	2.5	±10% Tol.	±10% Tol.
1N5350A	13	100	2.5	$2.20	$1.65
1N5352A	15	75	2.5		
1N5353A	16	75	2.5		
1N5355A	18	65	2.5		
1N5357A	20	65	3.0		
1N5358A	22	50	3.5	±5% Tol.	±5% Tol.
1N5359A	24	50	3.5	$2.45	$1.85
1N5361A	27	50	5.0		
1N5363A	30	40	8.0		
1N5364A	33	40	10		
1N5365A	36	30	11		
1N5366A	39	30	14		
1N5367A	43	30	20		
1N5368A	47	25	25		
1N5369A	51	25	27		
1N5370A	56	20	35		
1N5372A	62	20	42		
1N5373A	68	20	44		
1N5374A	75	20	45		
1N5375A	82	15	65		
1N5377A	91	15	75		
1N5378A	100	12	90		
1N5379A	110	12	125	±10% Tol.	±10% Tol.
1N5380A	120	10	170	$2.60	$1.95
1N5381A	130	10	190		
1N5383A	150	8	330		
1N5384A	160	8	350	±5% Tol.	±5% Tol.
1N5386A	180	5	430	$2.85	$2.15
1N5388A	200	5	480		

10-WATT DIFFUSED (CASE 56)

Also Available: 1N2970B, RB–1N3015B, RB JAN, JTX to MIL-S-19500/124; S1N2970B–S1N2985B and S1N2991B NASA types. For reverse polarity units, at prices shown, add suffix R (1N2970R).

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-299
1N2970	6.8	370	1.2		
1N2971	7.5	335	1.3		
1N2972	8.2	305	1.5		
1N2973	9.1	275	2.0		
1N2974	10	250	3		
1N2975	11	230	3		
1N2976	12	210	3		
1N2977	13	190	3		
1N2979	15	170	3		
1N2980	16	155	4		
1N2982	18	140	4		
1N2984	20	125	4	±20% Tol.	±20% Tol.
1N2985	22	115	5	$5.45	$4.10
1N2986	24	105	5		
1N2988	27	95	7		
1N2989	30	85	8		
1N2990	33	75	9		
1N2991	36	70	10	±10%* Tol.	±10%* Tol.
1N2992	39	65	11	$5.85	$4.40
1N2993	43	60	12		
1N2995	47	55	14		
1N2997	51	50	15		
1N2999	56	45	16		
1N3000	62	40	17	±5%† Tol.	±5%† Tol.
1N3001	68	37	18	$7.30	$5.50
1N3002	75	33	22		
1N3003	82	30	25		
1N3004	91	28	35		
1N3005	100	25	40		
1N3007	110	23	55		
1N3008	120	20	75		
1N3009	130	19	100		
1N3011	150	17	175		
1N3012	160	16	200	$ 6.00‡	$ 4.50‡
1N3014	180	14	260	9.00§	6.75§
1N3015	200	12	300	13.75#	10.35#

To Order Add Suffix: *A (1N2970A); †B (1N2970B). ‡For ±20% tolerance. §For ±10% tolerance, add suffix A. #For ±5% tol., add suffix B.

10-WATT LOW VOLTAGE (CASE 56)

Also Available: 1N3993A, RA–1N4000A, RA JAN, JTX to MIL-S-19500/272. For reverse polarity units, at prices shown, add suffix R (1N3993R). V_Z value given is nominal.

Motorola Type	V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-299
1N3993	3.9	640	2	±10% Tol.	±10% Tol.
1N3994	4.3	580	1.5	$5.65	$4.25
1N3995	4.7	530	1.2		
1N3996	5.1	490	1.1		
1N3997	5.6	445	1.0		
1N3998	6.2	405	1.1	±5%* Tol.	±5%* Tol.
1N3999	6.8	370	1.2	$7.70	$5.80
1N4000	7.5	335	1.3		

*To order add suffix A (1N3993A).

50-WATT DIFFUSED (CASES 54, 58)

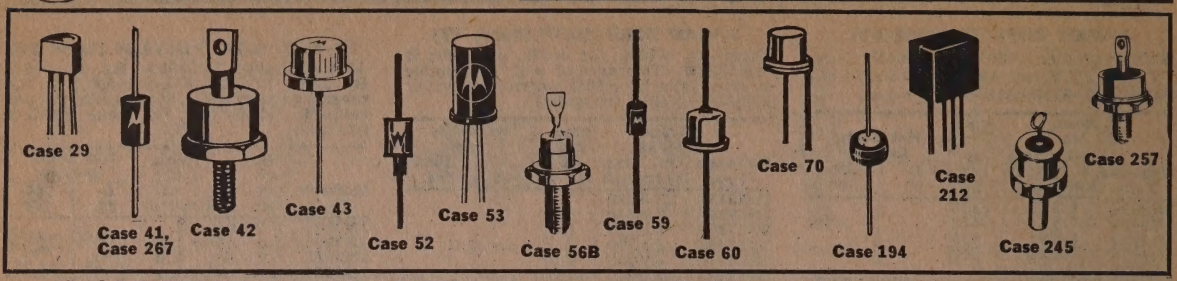
Also Available: Case 54, 1N2804B, RB–1N2846B, RB JAN, JTX to MIL-S-19500/114. Case 58, 1N3305B, RB–1N4554B, RB JAN, JTX to MIL-S-19500/358. For reverse polarity units, at prices shown, add suffix R (1N2804R, 1N3305R, 1N3305RB).

Motorola Type (Case 54)	Motorola Type (Case 58)	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max Z_{ZT} at I_{ZT} Ohms
1N2804	1N3305	6.8	1850	0.2
1N2805	1N3306	7.5	1700	0.3
1N2806	1N3307	8.2	1500	0.4
1N2807	1N3308	9.1	1370	0.5
1N2808	1N3309	10	1200	0.6
1N2809	1N3310	11	1100	0.8
1N2810	1N3311	12	1000	1.0
1N2811	1N3312	13	960	1.1
1N2812*	1N3313*	14	890	1.2
1N2813	1N3314	15	830	1.4
1N2814	1N3315	16	780	1.6
1N2815*	1N3316*	17	740	1.8
1N2816	1N3317	18	700	2.0
1N2817*	1N3318*	19	660	2.2
1N2818	1N3319	20	630	2.4
1N2819	1N3320	22	570	2.5
1N2820	1N3321	24	520	2.6
1N2821*	1N3322*	25	500	2.7
1N2822	1N3323	27	460	2.8
1N2823	1N3324	30	420	3.0
1N2824	1N3325	33	380	3.2
1N2825	1N3326	36	350	3.5
1N2826	1N3327	39	320	4.0
1N2827	1N3328	43	290	4.5
1N2828*	1N3329*	45	280	4.5
1N2829	1N3330	47	270	5.0
1N2830*	1N3331*	50	250	5.0
1N2831	1N3332	51	245	5.2
.....	1N3333*	52	240	5.5
1N2832	1N3334	56	220	6
1N2833	1N3335	62	200	7
1N2834	1N3336	68	180	8
1N2835	1N3337	75	170	9
1N2836	1N3338	82	150	11
1N2837	1N3339	91	140	15
1N2838	1N3340	100	120	20
1N2839*	1N3341*	105	120	25
1N2840	1N3342	110	110	30
1N2841	1N3343	120	100	40
1N2842	1N3344	130	95	50
.....	1N3345*	140	90	60
1N2843	1N3346	150	85	75
1N2844	1N3347	160	80	80
.....	1N3348*	175	70	85
1N2845	1N3349	180	68	90
1N2846	1N3350	200	65	100
1N4557	1N4549	3.9	3200	0.16
1N4558	1N4550	4.3	2900	0.16
1N4559	1N4551	4.7	2650	0.12
1N4560	1N4552	5.1	2450	0.12
1N4561	1N4553	5.6	2250	0.12
1N4562	1N4554	6.2	2000	0.14
1N4563	1N4555	6.8	1850	0.16
1N4564	1N4556	7.5	1650	0.24

*MIL types not available.

Motorola Type	Tol.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
1N2804–1N2838	±20%	$5.65	$ 4.25
1N2804A–1N2838A	±10%	7.65	5.75
1N2804B–1N2838B	± 5%	10.65	8.00
1N2839–1N2846	±20%	6.80	5.10
1N2839A–1N2846A	±10%	11.30	8.50
1N2839B–1N2846B	± 5%	17.95	13.50
1N3305–1N3340	±20%	5.65	4.25
1N3305A–1N3340A	±10%	7.65	5.75
1N3305B–1N3340B	± 5%	10.65	8.00
1N3341–1N3350	±20%	6.80	5.10
1N3341A–1N3350A	±10%	11.30	8.50
1N3341B–1N3350B	± 5%	17.95	13.50
1N4549–1N4564	±20%	6.05	4.55
1N4549A–1N4564A	±10%	8.00	6.00
1N4549B–1N4564B	± 5%	11.50	8.65

SILICON REFERENCE DIODES AND RECTIFIERS



SILICON MOLDED ASSEMBLY REFERENCE DIODES (CASE 41)

V_Z at I_{ZT} = 7.5 mA. ΔV_Z at −55° C, +25° C, +100° C. P_D at T_A = 25° C.

Motorola Type	V_Z Volts	Z_{ZT} Ohms	TC for Refer. %/° C	ΔV_Z at I_{ZT} Volts	P_D mW	Net Ea., Lots of 1-99	Net Ea., Lots of 100-299
1N429*†	6.2	20	0.01	0.050	200	$ 5.45	$ 4.10
1N1530‡	8.4	15	0.002	0.014§	250	16.55	12.45
1N1530A*‡	8.4	15	0.001	0.007§	250	24.85	18.70
1N1735	6.2	20	0.01	0.050	200	5.40	4.05
1N1736	12.4	40	0.01	0.100	400	8.75	6.60
1N1736A	12.4	40	0.005	0.050	400	10.70	8.05
1N1737	18.6	60	0.01	0.150	600	10.50	7.90
1N1737A	18.6	60	0.005	0.075	600	12.30	9.25
1N1738	24.8	80	0.01	0.200	800	14.15	10.65
1N1738A	24.8	80	0.005	0.100	800	16.20	12.20
1N1739	31.0	100	0.01	0.250	1000	17.50	13.15
1N1739A	31.0	100	0.005	0.125	1000	20.60	15.50
1N1740	37.2	120	0.01	0.300	1200	20.30	15.25
1N1740A	37.2	120	0.005	0.150	1200	24.60	18.50
1N1741	43.4	140	0.01	0.350	1400	24.35	18.30
1N1741A	43.4	140	0.005	0.175	1400	28.60	21.50
1N1742	49.6	180	0.01	0.400	1600	27.65	20.80
1N1742A*	49.6	180	0.005	0.200	1600	32.20	24.20

*JAN type also available. †Case 53. ‡Case 57. §I_{ZT} = 10 mA.

REFERENCE AMPLIFIERS (CASE 212)

Designed for use in regulated power supplies as a combination voltage reference element and error voltage amplifier. Add suffix **N** to basic type number for NPN polarity; suffix **P** for PNP polarity.

0° C TO +75° C—±10% TOLERANCE

V_{REF} V	ΔV_{REF} V	Motorola Type	V_{REF} V	ΔV_{REF} V	Motorola Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
6.8	0.051	MCA1911	8.6	0.060	MCA2011	$ 4.50	$ 3.00
	0.025	MCA1912		0.030	MCA2012	7.95	5.30
	0.010	MCA1913		0.012	MCA2013	14.10	9.40
	0.005	MCA1914		0.006	MCA2014	23.40	15.60
9.5	0.071	MCA2111	11.0	0.082	MCA2211	5.25	3.95
	0.035	MCA2112		0.041	MCA2212	7.95	5.30
	0.014	MCA2113		0.016	MCA2213	14.10	9.40
	0.007	MCA2114		0.008	MCA2214	23.40	15.60

−55° C TO +100° C—±5% TOLERANCE

V_{REF} V	ΔV_{REF} V	Motorola Type	V_{REF} V	ΔV_{REF} V	Motorola Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
6.8	0.105	MCA1921	8.6	0.124	MCA2021	$ 7.95	$ 5.30
	0.052	MCA1922		0.062	MCA2022	14.10	9.40
	0.020	MCA1923		0.024	MCA2023	22.50	15.00
	0.010	MCA1924		0.012	MCA2024	45.00	29.00
9.5	0.147	MCA2121	11.0	0.170	MCA2221	7.95	5.30
	0.073	MCA2122		0.085	MCA2222	14.10	9.40
	0.028	MCA2123		0.034	MCA2223	22.50	15.00
	0.014	MCA2124		0.017	MCA2224	45.00	29.00

−55° C TO +150° C—±5% TOLERANCE

V_{REF} V	ΔV_{REF} V	Motorola Type	V_{REF} V	ΔV_{REF} V	Motorola Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
6.8	0.139	MCA1931	8.6	0.164	MCA2031	$ 8.25	$ 5.50
	0.069	MCA1932		0.082	MCA2032	14.10	9.40
	0.026	MCA1933		0.032	MCA2033	23.40	15.60
	0.013	MCA1934		0.016	MCA2034	49.50	33.00
9.5	0.194	MCA2131	11.0	0.225	MCA2231	8.25	5.50
	0.097	MCA2132		0.112	MCA2232	14.10	9.40
	0.038	MCA2133		0.044	MCA2233	23.40	15.60
	0.019	MCA2134		0.022	MCA2234	49.50	33.00

ECONOMY DUAL DIODES (CASE 29)

T_J = 135° C, I_F = 200 mA. $V_{(BR)}$ at I_{BR} = 100 μA; C at V_R = zero; t_{rr} at I_R = 10 mA. Common cathode except MSD6150, common anode; MSD7000, series.

Motorola Type	Min. $V_{(BR)}$ Volts	Maximum C pF	Maximum t_{rr} nsec	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MSD6100	100	1.5	4.0	$0.36	$0.24
MSD6101	50	2.0	10	.40	.27
MSD6102	70	3.0	100	.30	.20
MSD6150	70	8.0	100	.37	.25
MSD7000	100	1.5	15	.38	.25

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SURMETIC™ LOW-CURRENT RECTIFIERS (CASE 59)

$I_{FM(surge)}$ at 25° C except as noted.

Motorola Type	V_{RM} (rep) Volts	Forward Current I_O at Temp Amps	Forward Current I_O at Temp °C	$I_{FM(surge)}$ Amps	I_R (AV) Amps	Net Ea., Lots 1-99	Net Ea., Lots 100-999
1N4001	50	1.0	75	30	0.03	$0.29	$0.19
1N4002	100	1.0	75	30	0.03	.35	.22
1N4003	200	1.0	75	30	0.03	.37	.24
1N4004	400	1.0	75	30	0.03	.41	.26
1N4005	600	1.0	75	30	0.03	.51	.33
1N4006	800	1.0	75	30	0.03	.65	.41
1N4007	1000	1.0	75	30	0.03	.83	.55

Motorola Type	V_{RM} (rep) Volts	Forward Current I_O at Temp Amps	Forward Current I_O at Temp °C	$I_{FM(surge)}$ Amps	I_R (AV) Amps	Net Ea., Lots 1-24	Net Ea., Lots 25-99
MR2266	800	1.0	75	30†	0.01*	$1.30	$1.00
MR2272	400	1.0	75	30†	0.01*	.68	.53
MR2273	200	1.0	75	30†	0.01*	.58	.45

*I_R. †At 75° C.

SILICON RECTIFIERS

The following types represent the latest rectifier products that are recommended for new designs. Not all of Motorolas' devices are listed; write for information and prices on types you need. Reverse polarity available on all types except as noted. Add suffix **R** to number (1N4720**R**, MR1031B**R**).

Motorola Type	Case	I_O A	V_{RM} (REF) V	Net Ea., Lots of 1-24	Net Ea., Lots of 25-99	Net Ea., Lots of 100-999
1N4720	60	3.0	100	$ 1.00	$ .83	$0.62
1N4721	60	3.0	200	1.10	.92	.69
1N4722	60	3.0	400	1.30	1.08	.81
1N4723	60	3.0	600	1.70	1.42	1.06
1N4724	60	3.0	800	2.50	2.08	1.56
1N4725	60	3.0	1000	3.80	3.17	2.38
1N4998/MR1031B	70	3.0	100	1.00	.83	.62
1N4999/MR1032B	70	3.0	200	1.10	.92	.69
1N5000/MR1034B	70	3.0	400	1.30	1.08	.81
1N5001/MR1036B	70	3.0	600	1.70	1.42	1.06
1N5002/MR1038B	70	3.0	800	2.50	2.08	1.56
1N5003/MR1040B	70	3.0	1000	3.80	3.17	2.38
MR501	267	3.0	100	.50	.39	.31
MR502	267	3.0	200	.56	.43	.35
MR504	267	3.0	400	.66	.51	.41
MR506	267	3.0	600	.80	.62	.50
MR508	267	3.0	800	1.02	.78	.64
MR510	267	3.0	1000	1.40	1.08	.88
MR751*	194	6.0	100	.84	.65	.53
MR752*	194	6.0	200	.88	.68	.55
MR754*	194	6.0	400	1.00	.77	.63
MR756*	194	6.0	600	1.56	1.20	.98
1N1200, A	245	12.0	100	1.64	1.37	1.23
1N1202, A	245	12.0	200	2.90	2.42	1.81
1N1204, A	245	12.0	400	5.10	4.25	3.19
1N1206, A	245	12.0	600	7.12	5.93	4.45
1N3988	245	12.0	800	10.45	8.70	6.55
1N3990	245	12.0	1000	13.80	11.50	8.60
MR1121	245	12.0	100	1.40	1.17	.88
MR1122	245	12.0	200	1.50	1.25	.94
MR1124	245	12.0	400	1.86	1.55	1.16
MR1126	245	12.0	600	3.30	2.75	2.06
MR1128	245	12.0	800	6.27	5.23	3.93
MR1130	245	12.0	1000	8.89	7.40	5.56
1N3209	42	15.0	100	2.00	1.54	1.25
1N3210	42	15.0	200	2.20	1.69	1.38
1N3212	42	15.0	400	3.00	2.31	1.88
1N3214	42	15.0	600	4.60	3.54	2.87
1N249B	42	20.0	100	1.88	1.45	1.18
1N250B	42	20.0	200	2.72	2.10	1.70
1N1196	42	20.0	400	4.50	3.46	2.81
1N1198	42	20.0	600	6.50	5.00	4.06
1N3492/MR323	43	25.0	100	1.00	.77	.63
1N3493/MR324	43	25.0	200	1.18	.91	.74
1N3495/MR326	43	25.0	400	1.58	1.22	.99
MR328	43	25.0	600	2.58	1.99	1.61
MR330	43	25.0	800	3.58	2.75	2.24
MR331	43	25.0	1000	5.58	4.29	3.49
1N3660	43	30.0	100	1.18	.91	.74
1N3661	43	30.0	200	1.42	1.09	.89
1N3663	43	30.0	400	1.82	1.40	1.14
1N1184	42	35.0	100	2.38	1.83	1.49
1N1186	42	35.0	200	3.58	2.76	2.24
1N1188	42	35.0	400	5.20	4.00	3.25
1N1190	42	35.0	600	6.80	5.23	4.25

*Reverse polarity not available.

HIGH-CURRENT RECTIFIERS

Ratings at 150° C. **Mounting Type Suffix: FB** flat-mount with flexible braided lead; **FL** flat-mount (A) MR1200–MR1209 or flat-mount (B) all others, with solid lug terminal; **SB** stud-mount with flexible braided lead; **SL** stud mount with solid lug terminal. For reverse polarity add final suffix **R** (MR1211**SBR**); same price. $V_{RM(REP)}$ of 50, 150, 250, 300 and 350 V available.

50 AMPERES TYPE

$I_O = 50$ A; $I_{FM(surge)} = 800$ A; $I_{R(AV)} = 10$ mA. Available flat-mount (A) only.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99	100-199
MR1205FL	300	$ 7.15	$ 6.15	$ 5.40
MR1209FL	600	11.60	9.90	8.70
MR5005*†	50	2.20	1.70	1.38
MR5010*†	100	2.50	1.92	1.56
MR5020*†	200	2.80	2.15	1.75
MR5030*†	300	3.10	2.39	1.94
MR5040*†	400	3.80	2.92	2.37

*In Case 43. †$I_{R(AV)} = 2$ mA.

100 AMPERES TYPE

$I_O = 100$ amps; $I_{FM(surge)} = 2000$ amps; $I_{R(AV)} = 15$ mA. Mounting type **SL** also available at lower price.

MR1215SL	300	$ 8.75	$ 7.50	$ 6.55
MR1219SL	600	14.80	12.70	11.10

400 AMPERES TYPE

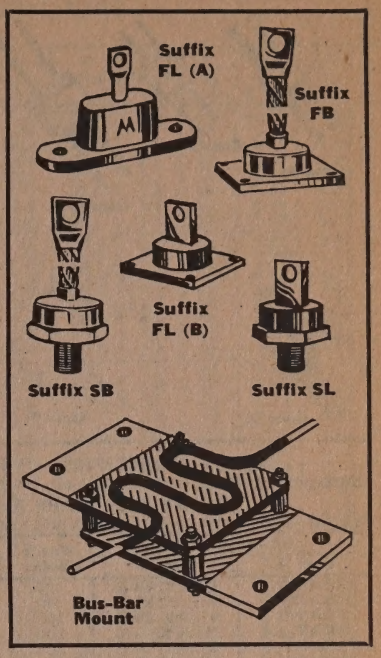
$I_O = 400$ A; $I_{FM(surge)} = 8000$ A; $I_{R(AV)} = 50$ mA. Mounting type **FL** and **SL** available.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99
MR1245FL	300	$32.25	$28.20
MR1245SL	300	33.00	28.85
MR1249FL	600	54.70	47.85
MR1249SL	600	57.00	49.90

650 AMPERES TYPE

$I_O = 650$ A; $I_{FM(surge)} = 12{,}000$ A; $I_{R(AV)} = 100$ mA. Available flat-mount only.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99
MR1265FL	300	$62.00	$54.40
MR1269FL	600	101.00	88.60



FAST RECOVERY POWER RECTIFIERS

Reverse polarity available as noted.

PLASTIC AXIAL LEAD

Motorola Type	Case	V_{RRM} V	I_O A	t_{rr} μs	f kHz	Net Ea., Lots 1-24	25-99
1N4933	59	50	1.0	0.2	250	$0.70	$0.54
1N4934	59	100	1.0	0.2	250	.80	.62
1N4935	59	200	1.0	0.2	250	.88	.68
MR2271	59	300	1.0	0.2	250	1.02	.79
1N4936	59	400	1.0	0.2	250	1.22	.94
1N4937	59	600	1.0	0.2	250	1.40	1.08
MR810	59	50	1.0	750 ns	50	.60	.46
MR811	59	100	1.0	750 ns	50	.68	.53
MR812	59	200	1.0	750 ns	50	.76	.59
MR813	59	300	1.0	750 ns	50	.84	.65
MR814	59	400	1.0	750 ns	50	1.00	.77
MR816	59	600	1.0	750 ns	50	1.18	.91
MR817	59	800	1.0	750 ns	50	1.38	1.06
MR818	59	1000	1.0	750 ns	50	1.60	1.23
MR850	267	50	3.0	0.2	250	1.06	.82
MR851	267	100	3.0	0.2	250	1.22	.94
MR852	267	200	3.0	0.2	250	1.40	1.08
MR854	267	400	3.0	0.2	250	1.68	1.29
MR856	267	600	3.0	0.2	250	1.98	1.52
MR820	194	50	5.0	0.2	250	2.46	1.89
MR821	194	100	5.0	0.2	250	2.60	2.00
MR822	194	200	5.0	0.2	250	2.94	2.26
MR824	194	400	5.0	0.2	250	4.10	3.15
MR826	194	600	5.0	0.2	250	4.80	4.06

METAL AXIAL LEAD

MR830	60	50	3.0	0.2	250	$1.80	$1.39
MR831	60	100	3.0	0.2	250	2.00	1.54
MR832	60	200	3.0	0.2	250	2.40	1.85
MR834	60	400	3.0	0.2	250	3.60	2.77
MR836	60	600	3.0	0.2	250	4.40	3.38
MR840	60	50	3.0	1.0	50	1.60	1.23
MR841	60	100	3.0	1.0	50	1.80	1.39
MR842	60	200	3.0	1.0	50	2.20	1.70
MR844	60	400	3.0	1.0	50	3.00	2.31
MR846	60	600	3.0	1.0	50	4.00	3.08

**Prices on request.

METAL STUD MOUNTED

Motorola Type	Case	V_{RRM} V	I_O A	t_{rr} μs	f kHz	Net Ea., Lots 1-24	25-99
1N3879, R	56B	50	6.0	0.2	250	$ 2.56	$ 1.97
1N3880, R	56B	100	6.0	0.2	250	3.06	2.35
1N3881, R	56B	200	6.0	0.2	250	3.66	2.82
1N3882, R	56B	300	6.0	0.2	250	4.34	3.34
1N3883, R	56B	400	6.0	0.2	250	5.10	3.92
MR1366, R	56B	600	6.0	0.2	250	6.60	5.07
1N3889, R	56B	50	12.0	0.2	250	3.40	2.62
1N3890*, R	56B	100	12.0	0.2	250	4.08	3.14
1N3891*, R	56B	200	12.0	0.2	250	4.92	3.78
1N3892, R	56B	300	12.0	0.2	250	5.95	4.58
1N3893*, R	56B	400	12.0	0.2	250	10.70	8.25
MR1376, R	56B	600	12.0	0.2	250	9.25	7.10
1N3899, R	257	50	20.0	0.2	250	4.95	3.80
1N3900, R	257	100	20.0	0.2	250	5.70	4.40
1N3901, R	257	200	20.0	0.2	250	6.80	5.25
1N3902, R	257	300	20.0	0.2	250	8.15	6.30
1N3903, R	257	400	20.0	0.2	250	9.80	7.55
MR1386, R	257	600	20.0	0.2	250	12.70	9.75
1N3909, R	257	50	30.0	0.2	250	5.50	4.25
1N3910, R	257	100	30.0	0.2	250	6.60	5.10
1N3911, R	257	200	30.0	0.2	250	7.90	6.10
1N3912, R	257	300	30.0	0.2	250	9.30	7.15
1N3913, R	257	400	30.0	0.2	250	11.50	8.85
MR1396, R	257	600	30.0	0.2	250	14.90	11.45
MR860, R	257	50	40.0	0.2	250	6.85	5.30
MR861, R	257	100	40.0	0.2	250	8.15	6.30
MR862, R	257	200	40.0	0.2	250	9.85	7.55
MR864, R	257	400	40.0	0.2	250	14.25	10.95
MR866, R	257	600	40.0	0.2	250	17.80	13.70
MR870, R	257	50	50.0	0.2	250	7.55	5.80
MR871, R	257	100	50.0	0.2	250	9.15	7.05
MR872, R	257	200	50.0	0.2	250	10.90	8.40
MR874, R	257	400	50.0	0.2	250	15.75	12.10
MR876, R	257	600	50.0	0.2	250	19.70	5.15

*JAN, JTX, JTXV types available.

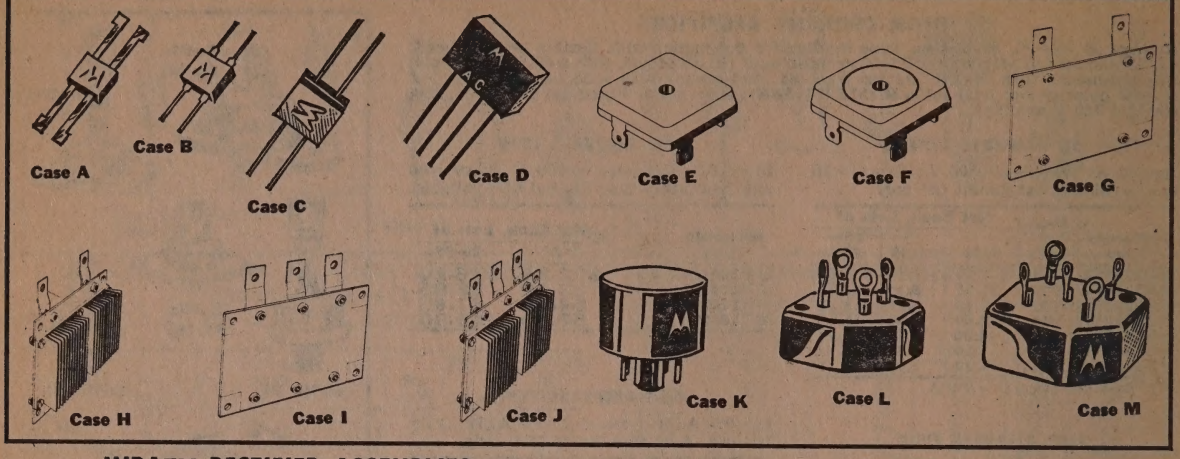
LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SEE PREVIOUS PAGE FOR ADDITIONAL CASE ILLUSTRATIONS.

OUR STOCKS ARE ALWAYS KEPT COMPLETE AND UP-TO-DATE.

ASK FOR INFORMATION ON ANY NEW OR UNLISTED PRODUCTS.

SILICON POWER RECTIFIER ASSEMBLIES



MIDA™ RECTIFIER ASSEMBLIES

Single-phase rectifier circuits in small, integral packages.

1 AMP FULL WAVE BRIDGE

Suffix A (MDA920A-1) indicates round leads.

Motorola Type		V_{RRM} Volts	Net Each, Lots of		
Case A	Case B		1-24	25-99	100-999
MDA920-1	MDA920A-1	25	$1.66	$1.28	$1.04
MDA920-2	MDA920A-2	50	1.98	1.53	1.24
MDA920-3	MDA920A-3	100	2.28	1.75	1.42
MDA920-4	MDA920A-4	200	2.72	2.09	1.70
MDA920-5	MDA920A-5	300	2.82	2.17	1.76
MDA920-6	MDA920A-6	400	2.90	2.23	1.81
MDA920-7	MDA920A-7	600	3.78	2.91	2.36

FULL WAVE BRIDGES

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	25-99	100-999
MDA922-1	C	2.0	25	$2.12	$1.63	$1.33
MDA922-2	C	2.0	50	2.30	1.77	1.44
MDA922-3	C	2.0	100	2.64	2.03	1.65
MDA922-4	C	2.0	200	3.14	2.42	1.96
MDA922-5	C	2.0	300	3.32	2.55	2.08
MDA922-6	C	2.0	400	3.66	2.81	2.29
MDA922-7	C	2.0	600	4.26	2.28	2.66
MDA922-8	C	2.0	800	5.10	3.92	3.19
MDA922-9	C	2.0	1000	6.25	4.83	3.93
MDA970-1	D	4.0	50	3.20	2.90	2.15
MDA970-2	D	4.0	100	3.65	3.30	2.45
MDA970-3	D	4.0	200	4.10	3.70	2.75
Type	**Case**	**Amps**	**Volts**	**1-24**	**25-99**	**100-249**
MDA980-1	E	12.0	50	$4.05	$3.15	$2.55
MDA980-2	E	12.0	100	4.40	3.40	2.75
MDA980-3	E	12.0	200	5.15	3.95	3.25
MDA980-4	E	12.0	300	5.75	4.45	3.60
MDA980-5	E	12.0	400	6.45	4.95	4.05
MDA980-6	E	12.0	600	8.85	6.80	5.90
MDA990-1	F	27.0	50	5.10	3.90	3.20
MDA990-2	F	27.0	100	5.45	4.15	3.40
MDA990-3	F	27.0	200	6.10	4.70	3.85
MDA990-4	F	27.0	300	6.80	5.20	4.00
MDA990-5	F	27.0	400	7.40	5.70	4.65
MDA990-6	F	27.0	600	10.00	7.70	6.30

HIGH CURRENT RECTIFIER CIRCUITS

Single-phase and three-phase full wave bridge assemblies also available. I_O value given is at 1500 LFM; reverse polarity (suffix R).

SINGLE-PHASE HALF WAVE

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of	
				1-24	25-99
MRA133B	G	300	300	$74.00	$60.50
MRA133, R	G	300	300	33.45	27.20
MRA163B	H	600	300	109.00	88.60
MRA163, R	H	600	300	52.00	42.00

THREE-PHASE HALF WAVE

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of	
				1-24	25-99
MRA333B	I	300	300	$74.00	$60.00
MRA333, R	I	300	300	34.80	28.30
MRA363B	J	650	300	112.00	91.25
MRA363, R	J	650	300	53.40	43.00

MOLDED RECTIFIER BRIDGE ASSEMBLIES

Individual hermetically sealed rectifiers interconnected and encapsulated in molded assemblies for use as single-phase and three-phase full wave bridge configurations.

SINGLE-PHASE FULL WAVE

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	25-99	100-999
MDA942-1	C	1.5	50	$3.20	$2.46	$2.00
MDA942-2	C	1.5	100	3.70	2.85	2.32
MDA942-3	C	1.5	200	4.30	3.30	2.69
MDA942-4	C	1.5	300	4.90	3.77	3.06
MDA942-5	C	1.5	400	5.50	4.25	3.45
MDA942-6	C	1.5	600	6.20	4.75	3.90
MDA942A-1	D	1.5	50	3.40	2.62	2.12
MDA942A-2	D	1.5	100	3.90	3.00	2.45
MDA942A-3	D	1.5	200	4.50	3.45	2.80
MDA942A-4	D	1.5	300	5.10	3.90	3.20
MDA942A-5	D	1.5	400	5.70	4.40	3.55
MDA942A-6	D	1.5	600	6.30	4.85	3.95

Motorola Type	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
			1-24	25-99	100-999
MDA800	8.0	50	$3.38	$3.00	$2.50
MDA801	8.0	100	3.90	3.47	2.89
MDA802	8.0	200	4.41	3.92	3.27
MDA804	8.0	400	5.53	4.92	4.10
MDA806	8.0	600	7.28	6.47	5.39

Motorola Type	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
			1-24	25-99	100-999
MDA1200	12.0	50	$5.33	$4.74	$3.95
MDA1201	12.0	100	5.54	4.92	4.10
MDA1202	12.0	200	5.74	5.10	4.25
MDA1204	12.0	400	7.59	6.74	5.62
MDA1206	12.0	600	8.03	7.14	5.95

OUR STOCKS ARE FULLY UP-TO-DATE WITH ALL THE LATEST PRODUCTS.

ASK ABOUT NEW OR UNLISTED ITEMS.

SILICON CONTROLLED RECTIFIERS (SCRs)—IN METAL CASE

Listed in order of on-state (rms) current.

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C V_{GT} V	At 25° C I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N1595	31	50	1.6	3.0	10.0	$ 1.50	$1.00
2N1596	31	100	1.6	3.0	10.0	2.25	1.50
2N1597	31	200	1.6	3.0	10.0	3.90	2.60
2N1598	31	300	1.6	3.0	10.0	5.55	3.70
2N1599	31	400	1.6	3.0	10.0	10.05	6.70

Motorola Type Case 86	Motorola Type Case 86L	V_{FOM} V_{ROM} V	I_T rms A	V_{GT} V	I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4167	2N4175	25	8.0	1.5	30	$1.75	$1.38
2N4168	2N4176	50	8.0	1.5	30	1.80	1.42
2N4169	2N4177	100	8.0	1.5	30	1.85	1.46
2N4170	2N4178	200	8.0	1.5	30	1.90	1.50
2N4171	2N4179	300	8.0	1.5	30	2.16	1.71
2N4172	2N4180	400	8.0	1.5	30	2.46	1.86
2N4173	2N4181	500	8.0	1.5	30	3.66	2.44
2N4174	2N4182	600	8.0	1.5	30	4.69	3.13

Motorola Type Case 87L	Motorola Type Case 88L	V_{FOM} V_{ROM} V	I_T rms A	V_{GT} V	I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4183	2N4191	25	8.0	1.5	30	$1.68	$1.32
2N4184	2N4192	50	8.0	1.5	30	1.73	1.36
2N4185	2N4193	100	8.0	1.5	30	1.78	1.40
2N4186	2N4194	200	8.0	1.5	30	1.82	1.44
2N4187	2N4195	300	8.0	1.5	30	2.07	1.64
2N4188	2N4196	400	8.0	1.5	30	2.36	1.79
2N4189	2N4197	500	8.0	1.5	30	3.51	2.34
2N4190	2N4198	600	8.0	1.6	30	4.54	3.03

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SEE FOLLOWING PAGES FOR CASE ILLUSTRATIONS.

CONSULT OUR STAFF OF ELECTRONICS EXPERTS ON ALL YOUR SPECIAL EQUIPMENT OR COMPONENT NEEDS.

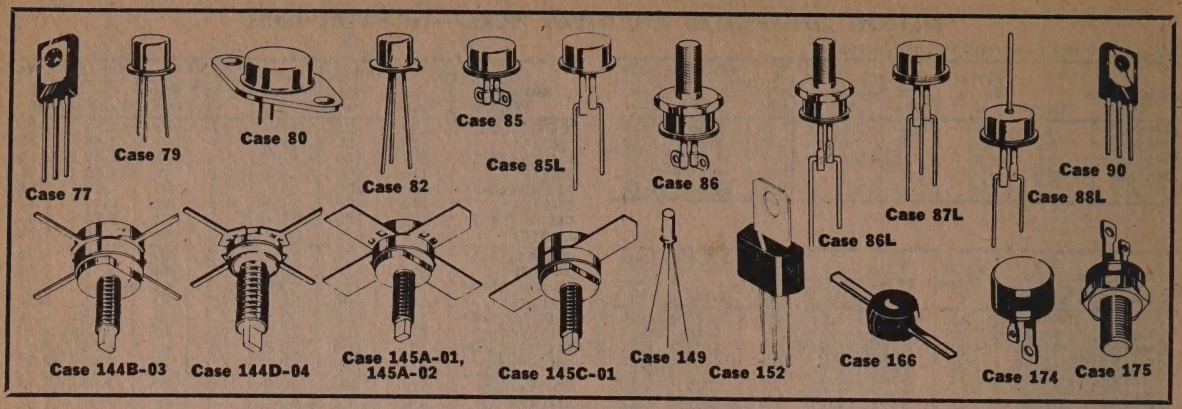
Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C V_{GT} V	At 25° C I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MCR3818-1*	174	25	20.0	1.5	40	$2.75	$1.90
2N5164*	174	50	20.0	1.5	40	3.00	2.10
MCR3818-3*	174	100	20.0	1.5	40	3.45	2.50
2N5165*	174	200	20.0	1.5	40	4.00	2.95
MCR3818-5*	174	300	20.0	1.5	40	4.70	3.40
2N5166*	174	400	20.0	1.5	40	5.45	3.95
MCR3818-7*	174	500	20.0	1.5	40	6.35	4.60
2N5167*	174	600	20.0	1.5	40	7.40	5.35
MCR3918-1*	175	25	20.0	1.5	40	3.10	2.25
2N5168*	175	50	20.0	1.5	40	3.40	2.45
MCR3918-3*	175	100	20.0	1.5	40	3.90	2.75
2N5169*	175	200	20.0	1.5	40	4.55	3.30
MCR3918-5*	175	300	20.0	1.5	40	5.10	3.70
2N5170*	175	400	20.0	1.5	40	5.95	4.30
MCR3918-7*	175	500	20.0	1.5	40	6.90	4.95
2N5171*	175	600	20.0	1.5	40	7.90	5.75
2N6167	235	100	20.0	1.5	40	3.83	2.75
2N6168	235	200	20.0	1.5	40	3.96	2.88
2N6169	235	400	20.0	1.5	40	5.23	3.80
2N6170	235	600	20.0	1.5	40	6.44	4.68
MCR649-1	61†	25	20.0	3.5	80	2.80	2.05
MCR649-2	61†	50	20.0	3.5	80	3.45	2.30
MCR649-3	61†	100	20.0	3.5	80	3.70	2.60
MCR649-4	61†	200	20.0	3.5	80	4.60	3.50
MCR649-5	61†	300	20.0	3.5	80	5.45	4.00
MCR649-6	61†	400	20.0	3.5	80	6.45	4.50
MCR649-7	61†	500	20.0	3.5	80	7.70	5.40
MCR649-8	61†	600	20.0	3.5	80	8.90	6.00
2N2573	54‡	25	25.0	3.5	40	2.92	2.10
2N2574	54‡	50	25.0	3.5	40	3.56	2.50
2N2575	54‡	100	25.0	3.5	40	4.45	3.05
2N2576	54‡	200	25.0	3.5	40	4.75	3.65
2N2577	54‡	300	25.0	3.5	40	5.75	4.20
2N2578	54‡	400	25.0	3.5	40	6.77	4.88
2N2579	54‡	500	25.0	3.5	40	8.00	5.84
2N681	263	25	25.0	3.0	25	2.34	1.70
2N682	263	50	25.0	3.0	25	2.82	2.05
2N683	263	100	25.0	3.0	25	3.57	2.60
2N684	263	150	25.0	3.0	25	4.19	3.05
2N685	263	200	25.0	3.0	25	4.81	3.50
2N686	263	250	25.0	3.0	25	5.36	3.90
2N687	263	300	25.0	3.0	25	5.77	4.20
2N688	263	400	25.0	3.0	25	6.74	4.90
2N689	263	500	25.0	3.0	25	8.05	5.85
2N690	263	600	25.0	3.0	25	8.67	6.30
2N691	263	700	25.0	3.0	25	11.80	7.85
2N692	263	800	25.0	3.0	25	13.50	9.00
MCR3835-1	174	25	35.0	1.6	40	3.34	2.36
MCR3835-2	174	50	35.0	1.6	40	4.00	2.84
2N3870	174	100	35.0	1.6	40	4.30	3.08
2N3871	174	200	35.0	1.6	40	4.55	3.30
MCR3835-5	174	300	35.0	1.6	40	5.45	3.95
2N3872	174	400	35.0	1.6	40	6.70	4.90
MCR3835-7	174	500	35.0	1.6	40	7.60	5.55
2N3873	174	600	35.0	1.6	40	9.00	6.55
MCR3935-1	175	25	35.0	1.6	40	3.75	2.50
MCR3935-2	175	50	35.0	1.6	40	4.15	2.75
2N3896	175	100	35.0	1.6	40	4.37	3.18
2N3897	175	200	35.0	1.6	40	5.03	3.66
MCR3935-5	175	300	35.0	1.6	40	5.50	4.00
2N3898	175	400	35.0	1.6	40	6.60	4.80
MCR3935-7	175	500	35.0	1.6	40	8.00	5.40
2N3899	175	600	35.0	1.6	40	8.75	6.36
2N6171	235	100	35.0	1.6	40	5.65	4.15
2N6172	235	200	35.0	1.6	40	6.55	4.75
2N6173	235	400	35.0	1.6	40	8.55	6.25
2N6174	235	600	35.0	1.6	40	11.30	8.25

*Anode-to-case; cathode-to-case available; prices on request. †Available in Case 54 (pins instead of lugs) at same price. Specify MCR649P1–649P7. ‡Case 61 with pins instead of lugs.

Our Stocks are Complete and up-to-date.

Write for information on new or unlisted items.

SILICON CONTROLLED RECTIFIERS (THYRISTORS)



SILICON CONTROLLED RECTIFIERS
IN PLASTIC CASE

Listed in order of on-state (rms) current.

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C V_{GT} V	At 25° C I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MCR101	29	15	0.8	0.8	0.2	$0.42	$0.28
MCR102	29	30	0.8	0.8	0.2	.63	.42
MCR103	29	60	0.8	0.8	0.2	.66	.44
MCR104	29	100	0.8	0.8	0.2	.70	.52
MCR115	29	150	0.8	0.8	0.2	.87	.58
MCR120	29	200	0.8	0.8	0.2	.94	.63
2N5060	29	30	0.8	0.8	0.2	.63	.42
2N5061	29	60	0.8	0.8	0.2	.66	.44
2N5062	29	100	0.8	0.8	0.2	.78	.52
2N5063	29	150	0.8	0.8	0.2	.87	.58
2N5064	29	200	0.8	0.8	0.2	.94	.63
2N6236	77	30	4.0	0.8	0.2	.73	.49
2N6237	77	50	4.0	0.8	0.2	.78	.52
2N6238	77	100	4.0	0.8	0.2	.81	.54
2N6239	77	200	4.0	0.8	0.2	.90	.60
2N6240	77	400	4.0	0.8	0.2	1.30	.87
2N6241	77	600	4.0	0.8	0.2	2.25	1.50
MCR106-1	77	30	4.0	1.0	0.5	.74	.49
MCR106-2	77	60	4.0	1.0	0.5	.78	.52
MCR106-3	77	100	4.0	1.0	0.5	.81	.54
MCR106-4	77	200	4.0	1.0	0.5	.90	.60
MCR106-5	77	300	4.0	1.0	0.5	1.13	.75
MCR106-6	77	400	4.0	1.0	0.5	1.31	.87
MCR106-7	77	500	4.0	1.0	0.5	2.10	1.44
MCR106-8	77	600	4.0	1.0	0.5	2.25	1.50
MCR107-1	77	30	4.0	1.5	20.0	.70	.47
MCR107-2	77	60	4.0	1.5	20.0	.75	.50
MCR107-3	77	100	4.0	1.5	20.0	.76	.51
MCR107-4	77	200	4.0	1.5	20.0	.85	.57
MCR107-5	77	300	4.0	1.5	20.0	1.03	.71
MCR107-6	77	400	4.0	1.5	20.0	1.23	.82
MCR107-7	77	500	4.0	1.5	20.0	2.06	1.37
MCR107-8	77	600	4.0	1.5	20.0	2.19	1.46
MCR406-1	90	30	4.0	0.8	0.2	.90	.60
MCR406-2	90	60	4.0	0.8	0.2	1.05	.70
MCR406-3	90	100	4.0	0.8	0.2	1.12	.75
MCR406-4	90	200	4.0	0.8	0.2	1.27	.85

PLASTIC CASE (CONT'D)

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C V_{GT} V	At 25° C I_{GT} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MCR407-1	90	30	4.0	1.0	0.5	$ .82	$ .55
MCR407-2	90	60	4.0	1.0	0.5	.97	.65
MCR407-3	90	100	4.0	1.0	0.5	1.05	.70
MCR407-4	90	200	4.0	1.0	0.5	1.20	.80
MCR3000-1	90	25	8.0	1.5	30.0	1.10	.75
2N4441	90	50	8.0	1.5	30.0	1.20	.80
MCR3000-3	90	100	8.0	1.5	30.0	1.35	.90
2N4442	90	200	8.0	1.5	30.0	1.50	1.00
MCR3000-5	90	300	8.0	1.5	30.0	1.65	1.10
2N4443	90	400	8.0	1.5	30.0	2.00	1.35
MCR3000-7	90	500	8.0	1.5	30.0	2.60	1.70
2N4444	90	600	8.0	1.5	30.0	3.25	2.15
2N6394	221	50	12.0	1.5	30.0	1.32	.88
2N6395	221	100	12.0	1.5	30.0	1.49	.99
2N6396	221	200	12.0	1.5	30.0	1.65	1.10
2N6397	221	400	12.0	1.5	30.0	2.24	1.49
2N6398	221	600	12.0	1.5	30.0	3.55	2.37
2N6399	221	800	12.0	1.5	30.0	4.60	3.05
2N6400	221	50	16.0	1.5	30.0	1.68	1.12
2N6401	221	100	16.0	1.5	30.0	1.78	1.18
2N6402	221	200	16.0	1.5	30.0	1.98	1.32
2N6403	221	400	16.0	1.5	30.0	2.57	1.72
2N6404	221	600	16.0	1.5	30.0	3.96	2.64
2N6405	221	800	16.0	1.5	30.0	5.94	3.96

HOT-CARRIER POWER RECTIFIERS

Utilize Schottky barrier principle in a large area metal-to-silicon diode. Multi-Cell combinations providing increased capability available on request.

Motorola Type	Case	V_{RRM} V	I_O at T_C A	I_O at T_C °C	V_F at I_F V	V_F at I_F A	Net Ea., Lots 1-99	Net Ea., Lots 100-999
1N5829	245	20	25	85	0.44	25	$10.35	$9.00

*At T_L.

SILICON BIDIRECTIONAL THYRISTORS (TRIACS)—METAL CASE

Motorola Type	Case	V_{BOM} V	I_T A rms	I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MAC37-1	174	25	25	75	$2.20	$1.53
MAC37-2	174	50	25	75	2.50	1.89
MAC37-3	174	100	25	75	2.80	2.30
MAC37-4	174	200	25	75	3.20	2.65
MAC37-5	174	300	25	75	3.60	2.85
MAC37-6	174	400	25	75	3.80	3.10
MAC37-7	174	500	25	75	4.40	3.50
MAC37-8	174	600	25	75	4.75	3.90

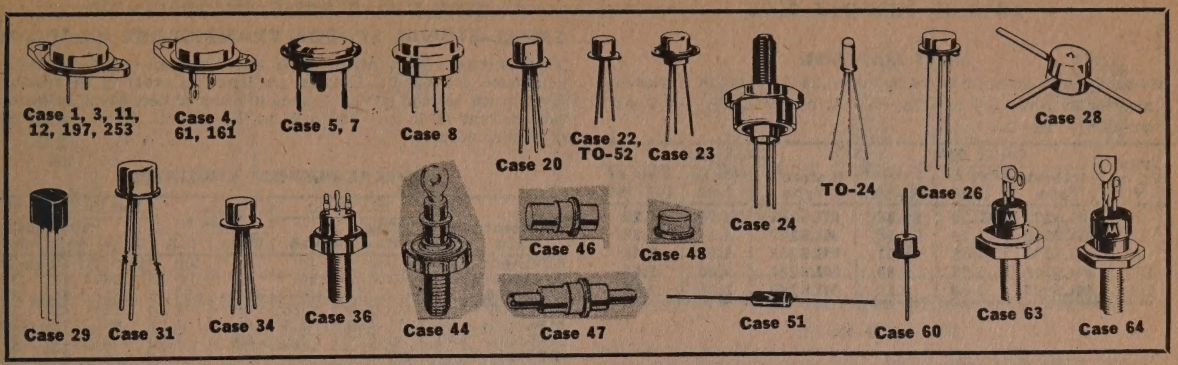
Motorola Type	Case	V_{BOM} V	I_T A rms	I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MAC38-1	175	25	25	75	$2.40	$1.71
MAC38-2	175	50	25	75	2.70	2.07
MAC38-3	175	100	25	75	3.00	2.45
MAC38-4	175	200	25	75	3.48	2.75
MAC38-5	175	300	25	75	3.80	2.95
MAC38-6	175	400	25	75	4.15	3.20
MAC38-7	175	500	25	75	4.70	3.60
MAC38-8	175	600	25	75	7.02	5.11

CONT'D ON NEXT PAGE

SEE ANOTHER PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SILICON THYRISTORS, PULSE MODULATOR SCRs



SILICON BIDIRECTIONAL THYRISTORS (TRIACS)—CONTINUED

METAL CASE

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C I_{GT} mA	At 25° C V_{GT} V	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N5571	174	200	15.0	50†	2.5†	$3.25	$2.36
2N5572	174	400	15.0	50†	2.5†	3.89	2.83
MAC40797	174	600	15.0	50†	2.5†	4.87	3.54
2N5573	175	200	15.0	50†	2.5†	3.58	2.60
2N5574	175	400	15.0	50†	2.5†	4.22	3.07
MAC40798	175	600	15.0	50†	2.5†	5.20	3.78
2N6145	235	200	15.0	50†	2.5†	4.73	3.44
2N6146	235	400	15.0	50†	2.5†	5.37	3.91
2N6147	235	600	15.0	50†	2.5†	6.35	4.62
MAC35-1	174	25	25.0	75‡	3.0‡	2.30	1.70
MAC35-2	174	50	25.0	75‡	3.0‡	2.60	2.10
MAC35-3	174	100	25.0	75‡	3.0‡	2.90	2.40
MAC36-1	175	25	25.0	75‡	3.0‡	3.43	2.50
MAC36-2	175	50	25.0	75‡	3.0‡	3.85	2.80
MAC36-3	175	100	25.0	75‡	3.0‡	4.26	3.10
2N6157	174	200	25.0	60§	2.0§	3.29	2.74
2N6158	174	400	25.0	60§	2.0§	3.94	3.28
2N6159	174	600	25.0	60§	2.0§	5.00	4.17
2N6160	175	200	25.0	60§	2.0§	4.85	3.53
2N6161	175	400	25.0	60§	2.0§	5.74	4.18
2N6162	175	600	25.0	60§	2.0§	7.09	5.16
2N6163	235	200	25.0	60§	2.0§	6.00	4.37
2N6164	235	400	25.0	60§	2.0§	6.90	5.02
2N6165	235	600	25.0	60§	2.0§	8.25	6.00
2N5441	237	200	40.0	70•	2.0•	5.64	4.10
2N5442	237	400	40.0	70•	2.0•	6.77	4.92
2N5443	237	600	40.0	70•	2.0•	8.46	6.16
2N5444	238	200	40.0	70•	2.0•	5.97	4.34
2N5445	238	400	40.0	70•	2.0•	7.10	5.16
2N5446	238	600	40.0	70•	2.0•	8.79	6.40
MAC40688	239	200	40.0	70•	2.0•	7.13	5.18
MAC40689	239	400	40.0	70•	2.0•	8.25	6.00
MAC40690	239	600	40.0	70•	2.0•	9.95	7.24

*I_{GT} = 75 mA, V_{GT} = 2.5 V. †I_{GT} = 80 mA, V_{GT} = 2.5 V. ‡I_{GT} = 100 mA, V_{GT} = 3.0 V. §I_{GT} = 70 mA, V_{GT} = 2.1 V; I_{GT} = 100 mA, V_{GT} = 2.5 V. ∮I_{GT} = 70 mA, V_{GT} = 2.5 V. •I_{GT} = 100 mA, V_{GT} = 2.5 V.

PLASTIC CASE

Series MAC92, MAC93 and MCA94 also available: Same ratings as **A** version except I_{GT} = 5.0 mA; prices on request.

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C I_{GT} mA	At 25° C V_{GT} V	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MAC92A1	29	30	0.45	15	2.0	$0.90	$0.60
MAC92A2	29	60	0.45	15	2.0	.96	.66
MAC92A3	29	100	0.45	15	2.0	1.15	.90
MAC92A4	29	200	0.45	15	2.0	1.26	.99
MAC92A5	29	300	0.45	15	2.0	1.32	1.03
MAC92A6	29	400	0.45	15	2.0	1.59	1.23
2N6068	77	25	4.0	60	2.5*	$0.84	$0.56
2N6069	77	50	4.0	60	2.5*	.95	.63
2N6070	77	100	4.0	60	2.5*	1.07	.71
2N6071	77	200	4.0	60	2.5*	1.17	.78
2N6072	77	300	4.0	60	2.5*	1.23	.82
2N6073	77	400	4.0	60	2.5*	1.28	.85
2N6074	77	500	4.0	60	2.5*	1.65	1.30
2N6075	77	600	4.0	60	2.5*	1.85	1.55
2N6342	221	200	8.0	50	2.0	1.10	.95
2N6343	221	400	8.0	50	2.0	1.45	1.15
2N6344	221	600	8.0	50	2.0	2.00	1.60
2N6345	221	800	8.0	50	2.0	3.80	3.05
2N6346	221	200	8.0	75	2.5	1.30	1.05
2N6347	221	400	8.0	75	2.5	1.55	1.25
2N6348	221	600	8.0	75	2.5	2.10	1.75
2N6349	221	800	8.0	75	2.5	4.00	3.25

PLASTIC CASE (CONT'D)

Series 2N6000 also available in **A** and **B** version; prices on request.

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C I_{GT} mA	At 25° C V_{GT} V	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MAC10-1	90	25	10.0	50†	2.0†	1.10	.78
MAC10-2	90	50	10.0	50†	2.0†	1.20	.88
MAC10-3	90	100	10.0	50†	2.0†	1.30	.99
2N6151	90	200	10.0	50†	2.0†	1.40	1.15
MAC10-5	90	300	10.0	50†	2.0†	1.60	1.32
2N6152	90	400	10.0	50†	2.0†	1.70	1.40
MAC10-7	90	500	10.0	50†	2.0†	1.95	1.70
2N6153	90	600	10.0	50†	2.0†	2.10	1.85
MAC11-1	90	25	10.0	50	2.0	1.00	.70
MAC11-2	90	50	10.0	50	2.0	1.10	.79
MAC11-3	90	100	10.0	50	2.0	1.20	.89
2N6154	90	200	10.0	50	2.0	1.30	1.00
MAC11-5	90	300	10.0	50	2.0	1.50	1.19
2N6155	90	400	10.0	50	2.0	1.60	1.30
MAC11-7	90	500	10.0	50	2.0	1.85	1.60
2N6156	90	600	10.0	50	2.0	2.00	1.75
2N6342A	221	200	12.0	50	2.0	1.40	1.10
2N6343A	221	400	12.0	50	2.0	1.70	1.35
2N6344A	221	600	12.0	50	2.0	2.30	1.85
2N6345A	221	800	12.0	50	2.0	4.25	3.40
2N6346A	221	200	12.0	75	2.5	1.50	1.20
2N6347A	221	400	12.0	75	2.5	1.80	1.45
2N6348A	221	600	12.0	75	2.5	2.50	2.00
2N6349A	221	800	12.0	75	2.5	4.50	3.60

*At 40° C. †I_{GT} = 75 mA, V_{GT} = 2.5 V.

PULSE MODULATOR SCRs

100 A (PULSE)—CASE 63

t_{gt} = 0.4 μsec; dv/dt = 250 V/μsec.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C I_{GT} mA	At 25° C V_{GT} V	At 25° C I_H mA	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
2N4199*	300	50	1.5	3.0†	$21.25	$19.10	$15.00
2N4200*	400	50	1.5	3.0†	28.75	25.80	20.00
2N4201*	500	50	1.5	3.0†	32.50	29.10	22.50
2N4202*	600	50	1.5	3.0†	44.25	38.40	29.50
2N4203*	700	50	1.5	3.0†	51.75	45.05	34.50
2N4204*	800	50	1.5	3.0†	63.75	55.70	42.50

*JAN type available. †Minimum.

t_{gt} = 0.5 μsec; dv/dt = 50 V/μsec; I^2t = 35 A^2s.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C I_{GT} mA	At 25° C V_{GT} V	At 25° C I_H mA	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
MCR846-1	25	50	1.5	25	$ 5.15	$3.45
MCR846-2	50	50	1.5	25	5.75	3.85
MCR846-3	100	50	1.5	25	7.35	4.90
MCR846-4	200	50	1.5	25	14.60	9.75

1000 A (PULSE)—CASE 64

dv/dt = 100 V/μsec.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C I_{GT} mA	At 25° C V_{GT} V	At 25° C I_H mA	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
MCR1718-5	300	50	1.5	15*	$25.50	$22.60	$17.00
MCR1718-6	400	50	1.5	15*	30.00	26.60	20.00
MCR1718-7	500	50	1.5	15*	37.50	33.25	25.00
MCR1718-8	600	50	1.5	15*	45.00	39.90	30.00

*Typical.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

SEE PRECEDING PAGES FOR CASE ILLUSTRATIONS

SPECIAL PURPOSE SCRs

LIGHT ACTIVATED

MLS100 Series on-state rms current = 0.25 A; MLS200 Series on-state rms current = 0.4 A. I_{TSM} = 5.0 A. At 25° C: I_{GT} = 0.1 mA; V_{GT} = 0.8 V; I_H = 2.0 mA.

V_{FOM} V_{ROM} V	CASE 29			CASE 82		
	Motorola Type	Net Ea., Lots of 1-99	100-999	Motorola Type	Net Ea., Lots of 1-99	100-999
15	MLS101	$1.10	$0.84	MLS201	$1.50	$1.22
30	MLS102	1.20	.90	MLS202	1.60	1.26
60	MLS103	1.40	1.02	MLS203	1.80	1.45
100	MLS104	1.65	1.30	MLS204	2.00	1.60
200	MLS105	2.80	2.10	MLS205	3.10	2.45

TRIGGER DEVICES

Ideal SCR or triac complements. Plastic case except Case 22, metal.

SILICON BIDIRECTIONAL SWITCH—SBS

Motorola Type	Case	V_S VDC	Maximum I_S μADC	Maximum I_H mADC	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MBS4991	29	6.0–10	500	1.5	$0.68	$0.45
MBS4992	29	7.5–9	120	0.5	1.35	.90
2N4993	22	6.0–10	500	1.5	1.60	1.40

SILICON UNIDIRECTIONAL SWITCH—SUS

V_F = 1.5 mA at I_F = 150 mA. P_D = 300 mW.

Motorola Type	Case	V_S V	I_S μA	I_H mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MUS4987	29	6.0–10	500	1.5	$0.65	$0.43
MUS4988	29	7.5–9	150	0.5	1.23	.82

BILATERAL TRIGGER DIACS (CASE 182)

Specifications given are for both directions.

Motorola Type	Nom. V_S V	Max. I_S μA	Min. ΔV V	Max. I_B μA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N5758	20 ± 4.0	100	5.0	10	$0.53	$0.35
1N5758A	20 ± 2.0	25	5.0	10	.58	.39
1N5759	24 ± 4.0	100	5.0	10	.53	.35
1N5759A	24 ± 2.0	25	5.0	10	.58	.39
1N5760	28 ± 4.0	100	7.0	10	.53	.35
1N5760A	28 ± 2.0	25	7.0	10	.58	.39
1N5761	32 ± 4.0	100	7.0	10	.53	.35
1N5761A	32 ± 2.0	25	7.0	10	.58	.39
1N5762	36 ± 4.0	100	7.0	10	.53	.35
1N5762A	36 ± 2.0	25	7.0	10	.58	.39

FOUR LAYER DIODES (CASE 51)

I_{pulse} = 10 A max. at 50 μsec.

Motorola Type	V_S V	Max. I_S μA	I_H T_A = 25° C mA	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
1N5158	8–10	50	1.0–20	$4.75	$4.05	$3.80
1N5159	9–11	50	1.0–20	4.45	3.85	2.95
1N5160	10–12	50	1.0–20	3.70	3.20	2.50
1N5779	11–13	50	1.0–20	3.70	3.20	2.50
1N5780	12–14	50	1.0–20	4.45	3.85	2.95
1N5781	13–15	50	1.0–20	4.75	4.05	3.80
1N5782	8–10	100	10–50	4.40	3.80	2.95
1N5783	9–11	100	10–50	4.05	3.50	2.70
1N5784	10–12	100	10–50	3.40	2.90	2.25
1N5785	11–13	100	10–50	3.40	2.90	2.25
1N5786	12–14	100	10–50	4.05	3.50	2.70
1N5787	13–15	100	10–50	4.40	3.80	2.95
1N5788	8–10	100	0.1–2.0	4.25	3.60	2.80
1N5789	9–11	100	0.1–2.0	3.55	3.05	2.35
1N5790	10–12	100	0.1–2.0	3.05	2.60	2.00
1N5791	11–13	100	0.1–2.0	3.05	2.60	2.00
1N5792	12–14	100	0.1–2.0	3.55	3.05	2.35
1N5793	13–15	100	0.1–2.0	4.25	3.60	2.80

NPN-PNP PLASTIC ENCAPSULATED SMALL-SIGNAL SILICON TRANSISTORS (CASE 29)

Transistors are 100% performance tested on high-speed computer-controlled equipment. Devices are listed in order of decreasing breakdown voltage (BV_{CEO}), then in order of decreasing collector test current (I_C). P_D = 350 mW at T_A = 25° C. NPN except as otherwise noted.

GENERAL-PURPOSE AMPLIFIERS

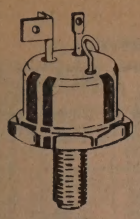
Motorola Type	BV $_{CEO}$ V	h_{FE} at I_C Min.-Max.	mA	f_T at I_C MHz	mA	Net Ea., Lots of 1-99	100-999	1000-4999
MPSA06*	80	50 min.	10	50	100	$0.60	$0.40	$0.27
MPSA56*†	80	50 min.	10	50	100	.66	.44	.33
MPS4356†	80	50–250	10	100	50	.51	.34	.26
MPSH05	80	30–150	1.5	80	1.5	.32	.21	.19
MPSH55†	80	30–150	1.5	80	1.5	.38	.25	.20
MPSH04	80	30–120	1.5	80	1.5	.38	.24	.21
MPSH54†	80	30–120	1.5	80	1.5	.40	.27	.22
MPS4355†	60	100–400	10	100	50	.52	.35	.26
MPS4354†	60	50–500	10	100	50	.48	.32	.24
MPSA05*	60	50 min.	10	50	100	.53	.35	.26
MPSA55*†	60	50 min.	10	50	100	.54	.39	.29
2N5210	50	250 min.	1.0	30	0.5	.72	.48	.36
2N5087†	50	250 min.	1.0	40	0.5	.81	.54	.40
2N5209	50	150 min.	1.0	30	0.5	.66	.44	.33
2N5086†	50	150 min.	1.0	40	0.5	.75	.50	.38
MPSA09	50	100–600	0.1	30	0.5	.54	.36	.27
MPSH34*	45	15 min.	20	500	15	.65	.44	.36
MPS6575	45	200–500	10	200	10	.50	.35	.28
MPS6566	45	100–400	10	200	10	.57	.38	.28
MPS6565	45	40–160	10	200	10	.52	.35	.26
MPS6576	45	100–300	1	200	10	.49	.34	.27
2N4400	40	100–300	150	200	20	.60	.40	.30
2N4403†	40	100–300	150	200	20	.75	.50	.38
2N4401	40	50–150	150	250	20	.75	.50	.38
2N4402†	40	50–150	150	150	20	.60	.40	.30
MPS6531	40	90–270	100	390‡	50	.75	.50	.37
MPS6534†	40	90–270	100	260‡	50	.81	.54	.40
MPS6530	40	40–120	100	390‡	50	.64	.43	.30
MPS6533†	40	40–120	100	260‡	50	.71	.47	.35
2N3904	40	100–300	10	300	10	.55	.39	.29
2N3906†	40	100–300	10	250	10	.55	.39	.29
2N3903	40	50–150	10	250	10	.55	.39	.29
2N3905†	40	50–150	10	200	10	.55	.39	.29
MPSA70†	40	40–400	5	125	5	.38	.25	.19
MPSA16	40	200–600	5	100	5	.36	.24	.21
MPSA17	40	200–600	5	80	5	.36	.24	.21
MPSA20	40	40–400	5	125	5	.33	.22	.17
MPSH37	40	25 min.	5	300	5	.51	.34	.29
MPS6518†	40	150–300	2	340‡	2	.67	.45	.31
MPS6517†	40	90–180	2	200‡	2	.63	.42	.29
MPS6516†	40	50–100	2	200‡	2	.60	.40	.30
MPS6532	30	30 min.	100	390‡	50	.54	.36	.27
MPS6535†	30	30 min.	100	260‡	50	.60	.40	.30
MPSH24*	30	30 min.	8	400	8	.62	.41	.34
MPSH20	30	25 min.	4	400	4	.59	.39	.33
MPSH32*	30	27–200	4	300	4	.63	.42	.36
MPSH07	30	20 min.	3	400	3	.68	.46	.39
MPSH08	30	20 min.	3	500	3	.73	.51	.44
MPSH85†	30	200 min.	2.5	350	2.5	1.05	.70	.64
MPSH83*†	30	20 min.	2.5	600	2.5	1.15	.75	.68
MPS6513	30	90–180	2	250‡	2	.57	.38	.28
2N4123	30	50–150	2	250	10	.39	.27	.16
2N4125†	30	50–150	2	200	10	.40	.28	.17
MPS6512	30	50–100	2	250‡	2	.54	.36	.27
2N5088	30	350 min.	1	50	0.5	.75	.50	.30
MPS3638†	25	30 min.	50	100	50	.45	.30	.20
MPS-3638A†	25	100 min.	50	150	50	.59	.39	.35
MPS5172	25	100–500	10	120‡	2	.21	.14	.11
MPSH10	25	60 min.	4	650	4	.49	.33	.28
MPSH11	25	60 min.	4	650	4	.54	.36	.30
MPSH19	25	45 min.	4	300	4	.45	.31	.27
MPS6515	25	250–500	2	390‡	2	.64	.43	.28
MPS6519†	25	250–500	2	340‡	2	.75	.50	.33
MPS6514	25	150–300	2	390‡	2	.60	.40	.30
2N4124	25	120–360	2	300	10	.40	.28	.17
2N4126†	25	120–360	2	250	10	.41	.29	.18
2N5089	25	450 min.	1	50	0.5	.98	.65	.33
MPS6560*	20	50–200	500	60	10	.48	.32	.27
MPS6562†	20	50–200	500	60	10	.54	.36	.31
MPS6561*	20	50–200	350	60	10	.45	.30	.26
MPS6563†	20	50–200	350	60	10	.51	.34	.29
MPS6568	20	20–200	4	375	4	1.50	1.00	.75
MPS6568A	20	20–200	4	375	4	.70	.47	.40
MPSH02*	20	20–200	4	375	4	.76	.51	.44
MPSH30	20	20–200	4	300	4	.51	.34	.29
MPSH31	20	20–200	4	300	4	.51	.34	.29
MPSH81†	20	60 min.	.....	600	5	.45	.30	.26

*P_D = 625 mW. †PNP. ‡Typical; all others are maximum. §h_{fe} at f = 1.0 kHz.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

SEE PRECEDING PAGES FOR CASE ILLUSTRATIONS

SILICON ECONOMY AND GERMANIUM TRANSISTORS

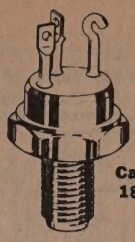

Case 177

Case 180

Case 182

Case 183

Case 184


Case 188

Case 199

NPN-PNP PLASTIC ENCAPSULATED SMALL-SIGNAL SILICON TRANSISTORS (CASE 29) CONT'D

Devices are listed in order of decreasing breakdown voltage (BV_{CEO}), then in order of decreasing collector test current (I_C). P_D = 350 mW at T_A = 25° C. NPN except as otherwise noted.

GENERAL-PURPOSE SATURATED SWITCHING

May also be used as general-purpose amplifiers.

Motorola Type	BV CEO V	hFE at IC Min.	mA	VCE (sat) V	Min. fT MHz	Max. ton ns	Max. toff ns	Net Ea., Lots 1-99	100-999*
2N5845*	40	25	500	0.6	200	40	60	$0.75	$0.50
2N5845A*	40	35	500	0.5	250	30	50	.87	.58
2N4401	40	100	150	0.75	250	35	255	.75	.50
2N4403†	40	100	150	0.75	200	35	255	.75	.50
2N4400	40	50	150	0.75	200	35	255	.60	.40
2N4402†	40	50	150	0.75	150	35	255	.60	.40
2N6067†	40	50	100	0.3	150	40	80	.93	.62
2N3904	40	100	10	0.3	300	70	250	.55	.39
2N3906†	40	100	10	0.4	250	70	300	.55	.39
2N3903	40	50	10	0.3	250	70	225	.55	.39
2N3905†	40	50	10	0.4	200	70	260	.55	.39
MPS404A†	35	30	12	0.2	.....	265	385	.45	.30
2N4123	30	50	2	0.3	250	37‡	136‡	.39	.27
2N4125†	30	50	2	0.4	200	43‡	155‡	.40	.28
MPS3638†	25	30	50	2.0	100	90	210	.45	.30
MPS3638A†	25	100	50	1.0	150	90	210	.59	.39
2N4124	25	120	2	0.3	300	37‡	136‡	.40	.28
2N4126†	25	120	2	0.4	250	43‡	155‡	.41	.29
MPS404†	24	30	12	0.2	.....	265	385	.37	.25

HIGH-SPEED SATURATED SWITCHING

MPS834	30	25	10	0.25	350	16	30	$0.52	$0.35
MPS835	20	20	10	0.3	300	20	35	.60	.40
2N4264	15	40	30	0.35	300	23	35	.48	.32
MPS3646	15	30	30	0.5	350	25	35	.52	.34
MPS2369	15	40	10	0.25	.....	12	18	.53	.35
MPS706A	15	20	10	0.6	200	40	75	.63	.42
MPS3640†	12	30	10	0.2	500	40	32	.44	.29
2N4265	12	100	10	0.35	300	23	35	.54	.36
MPS3639†	6	30	10	0.16	500	40	32	.34	.23

*P_D = 625 mW. †PNP. ‡Typical.

DARLINGTON AMPLIFIERS

P_D = 625 mW.

Motorola Type	BVCES V	hFE at IC Min.	mA	Min. fT MHz	Net Each, Lots of 1-99	100-999	1000-4999
MPSA13	30	5,000	10	125	$0.47	$0.32	$0.24
MPSA14	30	10,000	10	125	.54	.36	.24
MPSA65*	30	50,000	10	100	.57	.38	.29
MPSA66*	30	75,000	10	100	.63	.42	.32
MPSA12	20	20,000	10	.....	.67	.45	.29

*PNP.

LOW-NOISE AMPLIFIERS

Motorola Type	BV CEO V	hFE at IC Min.	mA	Max. NF dB	Min. fT MHz	Net Each, Lots of 1-99	100-999	1000-4999
2N5209	50	100	0.1	4.0	30	$0.66	$0.44	$0.33
2N5210	50	200	0.1	3.0	30	.72	.48	.36
MPSA09	50	100	0.1	1.4*	30	.54	.36	.27
2N5087†	50	250	0.1	2.0	40	.81	.54	.40
2N5086†	50	150	0.1	3.0	40	.75	.50	.38
MPSA18	45	800	1.0	1.5	100	.99	.67	.45
MPS6566	45	100	10	4.0*	100	.57	.38	.28
MPS6565	45	40	10	4.0*	40	.52	.35	.26
2N3904	40	40	0.1	5.0	300	.55	.39	.29
2N3903	40	20	0.1	6.0	300	.55	.39	.29
2N3906†	40	60	0.1	4.0	250	.55	.39	.30
2N3905†	40	30	0.1	5.0	200	.55	.39	.30
2N5088	30	300	0.1	3.0	50	.75	.50	.30
2N5089	25	400	0.1	2.0	50	.98	.65	.33
MPS6521	25	150	0.1	3.0	480*	.90	.60	.45
MPS6520	25	100	0.1	3.0	480*	.82	.55	.41
MPS6523†	25	150	0.1	3.0	420*	.97	.65	.49
MPS6522†	25	100	0.1	3.0	420*	.90	.60	.45
MPS6571	20	250	0.1	1.2*	50	.60	.40	.30
MPSA17	15	25	5.0	6.0	800	.36	.24	.21

*Typical. †PNP.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

HIGH-VOLTAGE

Motorola Type	BV CEO V	hFE at IC Min.	mA	VCE (sat) V	Min. fT MHz	Net Each, Lots of 1-99	100-999	1000-4999
MPSA42	300	40	10	0.5	50	$0.65	$0.44	$0.36
MPSA92*	300	40	10	0.5	50	.68	.45	.38
MPSA43	200	40	10	0.4	50	.62	.42	.34
MPSA93*	200	40	10	0.4	50	.65	.44	.36
2N5551	160	80	10	0.15	100	.84	.56	.50
2N5401*	150	60	10	0.2	150	.91	.61	.55
2N5550	140	60	10	0.15	100	.69	.46	.41
MPSL01	120	50	10	0.2	60	.59	.39	.35
2N5400*	120	40	10	0.2	100	.75	.50	.45
MPSL51*	100	40	50	0.25	60	.61	.42	.38
2N4410	80	60	1	0.2	60	.96	.64	.48
2N4409	50	60	1	0.2	60	.67	.45	.34

*PNP.

MEDIUM-POWER UNIWATT (CASE 152) HIGH VOLTAGE AMPLIFIERS

Motorola Type	BV CEO V	hFE at IC Min.	mA	VCE (sat) V	Min. fT MHz	PD W	Net Ea., Lots 1-99	100-999
MPSU10	300	40	10	0.75	60	1.0*	$1.44	$0.96
MPSU60†	300	30	10	0.75	60	10	1.65	1.10
MPSU04	180	40	10	0.5	100	5.0	1.50	1.00
MPSU03	120	40	10	0.5	100	5.0	1.35	.90
MPSU07	100	30	250	0.4	50	10	1.20	.80
MPSU57†	100	30	250	0.5	50	10	1.29	.86
GENERAL PURPOSE								
MPSU06	80	100	250	0.6	50	5.0	$1.05	$0.70
MPSU56†	80	100	250	0.6	50	5.0	1.14	.76
MPSU05	60	100	250	0.6	50	5.0	.90	.60
MPSU55†	60	100	250	0.6	50	5.0	.99	.66
MPSU02	40	50	150	0.4	150	6.0	.89	.59
MPSU52†	40	50	150	0.4	150	6.0	.98	.65
DARLINGTON								
MPSU45	40	25K	200	1.5	1000	10	$1.14	$0.76
MPSU95†	40	25K	200	1.5	50	10	1.26	.84
AUDIO								
MPSU01A	40	60	100	0.5	50	8.0	$0.93	$0.62
MPSU51A†	40	60	100	0.7	50	8.0	1.02	.68
MPSU01	30	60	100	0.5	50	8.0	.85	.57
MPSU51†	30	60	100	0.7	50	8.0	.90	.60

*Typical. †PNP.

GERMANIUM PNP POWER TRANSISTORS

DIFFUSED BASE (CASE 11)

Also available in Case 4 (TO-41); 2N5155 and 2N5435–2N5696 are alloy diffused epitaxial process.

Motorola Type	hFE at IC Min.	A	VCEO V	VCB V	PD W	fT MHz	Net Each, Lots 1-49	50-249
2N2288	20	5.0	30	40	70	0.7	$ 7.98	$ 6.33
2N2289	20	5.0	50	80	70	0.7	8.70	6.90
2N2290	20	5.0	70	120	70	0.7	10.01	7.94
2N2291	50	5.0	30	40	70	0.7	8.70	6.90
2N2292	50	5.0	50	80	70	0.7	11.82	9.37
2N2293	50	5.0	70	120	70	0.7	21.03	16.68
2N2526	20	3.0	80	80	85	0.7	5.37	4.26
2N2527	20	3.0	120	120	85	0.7	6.82	5.41
2N2528*	20	3.0	160	160	85	0.7	11.46	9.09
2N5155	25	8	120	90	106	0.4	7.98	6.33
2N5324	20	5	150	250	56	5.5	6.53	5.18
2N5325	20	5	200	325	56	5.5	8.70	6.90
2N5435	10	60	60	80	120	1.0	21.75	17.25
2N5436	10	60	90	110	120	1.0	24.65	19.55
2N5437	10	60	120	140	120	1.0	26.10	20.70
2N5438	15	60	60	80	120	1.0	22.48	17.83
2N5439	15	60	90	110	120	1.0	25.38	20.13
2N5440	15	60	120	140	120	1.0	26.83	21.28

*JAN type available.

DIFFUSED BASE TRANSISTORS CONTINUED ON FOLLOWING PAGE

GERMANIUM PNP POWER TRANSISTORS

DIFFUSED BASE, CASE 11 (CONTINUED)

Also available in Case 4 (TO-41); MP600–MP603 and MP2000A–MP2400A alloy diffused epitaxial process.

Motorola Type	h_{FE} at I_C Min.	h_{FE} at I_C A	V_{CEO} V	V_{CB} V	P_D W	f_T MHz	Net Each, Lots 1-49	Net Each, Lots 50-249
MP600	50	5	50	75	85	0.7	$ 9.43	$ 7.48
MP601	50	5	60	75	85	0.7	10.73	8.51
MP602	50	5	70	90	85	0.7	12.54	9.95
MP603	50	5	80	90	85	0.7	21.75	17.25
MP2000A	25	8	30	60	106	0.4	5.08	4.03
MP2100A	25	8	60	80	106	0.4	5.44	4.31
MP2200A	25	8	80	100	106	0.4	5.80	4.60
MP2300A	25	8	100	120	106	0.4	6.53	5.18
MP2400A	25	8	120	140	106	0.4	7.98	6.33
MP3730	15	2.25	200*	....	56	1.0	3.19	2.53
MP3731	15	6.0	320*	....	56	1.0	5.80	4.60

*V_{CES}.

ALLOY POWER TRANSISTORS

Low cost devices featuring high current gain and low saturation voltage. Listed in order of I_C for optimized h_{FE}, then in numerical sequence. Types in Case 11 also available in Case 4; prices on request.

Motorola Type	Case	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A	V_{CES} Volts	P_D W	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N5887	80	15–350	0.5	20	57	$0.80	$0.63
2N5888	80	15–350	0.5	30	57	.99	.78
2N5889	80	30–70	0.5	30	57	1.31	1.04
2N5890	80	30–70	0.5	45	57	1.45	1.15
2N5891	80	30–70	0.5	60	57	1.62	1.29
2N5892	80	30–70	0.5	75	57	1.81	1.44
2N5893	80	60–120	0.5	30	57	1.33	1.06
2N5894	80	60–120	0.5	45	57	1.48	1.17
2N5895	80	60–120	0.5	60	57	1.67	1.32
2N5896	80	60–120	0.5	75	57	1.86	1.47
2N5897	80	100–200	0.5	30	57	1.33	1.06
2N5898	80	100–200	0.5	45	57	1.48	1.17
2N5899	80	100–200	0.5	60	57	1.67	1.32
2N5900	80	100–200	0.5	75	57	1.86	1.47
2N5901	80	175–350	0.5	30	57	1.45	1.15

*A version available (2N2137A).

Motorola Type	Case	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A	V_{CEO} V	P_D W	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N1038	180	20–60	1.0	30	20	$ 3.63	$2.88
2N1039	180	20–60	1.0	40	20	4.28	3.39
2N1040	180	20–60	1.0	50	20	5.80	4.60
2N1041	180	20–60	1.0	60	20	11.43	9.06
2N2552	183	20–60	1.0	30	20	3.99	3.16
2N2553	183	20–60	1.0	40	20	4.57	3.62
2N2554	183	20–60	1.0	50	20	6.16	4.89
2N2555	183	20–60	1.0	60	20	7.83	6.21
2N2556	184	20–60	1.0	30	20	4.50	3.57
2N2557	184	20–60	1.0	40	20	5.00	3.97
2N2558	184	20–60	1.0	50	20	6.60	5.23
2N2559	184	20–60	1.0	60	20	9.06	7.19

Motorola Type	Case	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A	V_{CES} V	P_D W	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N1042	184	20–60	3.0	30*	20	$3.84	$3.05
2N1043	184	20–60	3.0	40*	20	5.44	4.31
2N1044	184	20–60	3.0	50*	20	6.16	4.89
2N1045	184	20–60	3.0	60*	20	9.06	7.19
2N1529	11	20–40	3.0	30	106	2.25	1.78
2N1531	11	20–40	3.0	60	106	2.97	2.36
2N1532	11	20–40	3.0	75	106	3.99	3.16
2N1533	11	20–40	3.0	90	106	5.08	4.03
2N1535	11	35–70	3.0	45	106	2.61	2.07
2N1536†	11	35–70	3.0	60	106	3.41	2.70
2N1537†	11	35–70	3.0	75	106	4.42	3.51
2N1538	11	35–70	3.0	90	106	4.93	3.91

*V_{CEO}. †A version available (2N1536A).

SEE PRECEDING PAGE FOR CASE ILLUSTRATIONS

ALLOY POWER TRANSISTORS (CONTINUED)

Motorola Type	Case	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A	V_{CES} Volts	P_D W	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N1539*	11	50–100	3.0	30	106	$ 1.81	$ 1.44
2N1540*	11	50–100	3.0	45	106	2.39	1.90
2N1541*	11	50–100	3.0	60	106	3.05	2.42
2N1542*	11	50–100	3.0	75	106	3.77	2.99
2N1543	11	50–100	3.0	90	106	4.50	3.57
2N1544*	11	75–150	3.0	30	106	1.96	1.55
2N1545*	11	75–150	3.0	45	106	2.54	2.01
2N1546*	11	75–150	3.0	60	106	3.19	2.53
2N1547*	11	75–150	3.0	75	106	3.92	3.11
2N1548	11	75–150	3.0	90	106	4.64	3.68
MP2060	11	30–200	3.0	30	85	1.23	.98
MP2062	11	30–200	3.0	60	85	1.81	1.44
MP2063	11	30–200	3.0	75	85	2.25	1.78
2N2560	183	20–60	3.0	30†	20	4.35	3.45
2N2561	183	20–60	3.0	40†	20	5.00	3.97
2N2562	183	20–60	3.0	50†	20	6.60	5.23
2N2563	183	20–60	3.0	60†	20	7.90	6.27
2N2564	180	20–60	3.0	30†	20	4.35	3.45
2N2565	180	20–60	3.0	40†	20	4.79	3.80
2N2566	180	20–60	3.0	50†	20	6.38	5.06
2N2567	180	20–60	3.0	60†	20	8.12	6.44
2N3611	11	35–70	3.0	30	85	1.42	1.13
2N3612	11	35–70	3.0	45	85	1.57	1.24
2N3613	11	60–120	3.0	30	85	1.49	1.18
2N3614	11	60–120	3.0	45	85	1.64	1.30
2N3615	11	30–60	3.0	60	85	2.32	1.84
2N3616	11	30–60	3.0	75	85	2.76	2.19
2N3617	11	45–90	3.0	60	85	2.54	2.01
2N3618	11	45–90	3.0	75	85	2.83	2.24
2N2075	5	20–40	5.0	80	170	6.67	5.29
2N2076	5	20–40	5.0	70	170	4.93	3.91
2N2077	5	20–40	5.0	50	170	3.55	2.82
2N2078	5	20–40	5.0	40	170	2.76	2.19
2N2079‡	5	35–70	5.0	80	170	6.89	5.46
2N2081	5	35–70	5.0	50	170	5.00	3.97
2N2082	5	35–70	5.0	40	170	3.77	2.99
2N2152*	5	50–100	5.0	45	170	2.97	2.36
2N2153*	5	50–100	5.0	60	170	4.21	3.34
2N2154*	5	50–100	5.0	75	170	6.45	5.12
2N2155	5	50–100	5.0	90	170	11.24	8.91
2N2156*	5	80–160	5.0	45	170	16.31	12.94
2N2157*	5	80–160	5.0	60	170	4.79	3.80
2N2158*	5	80–160	5.0	75	170	7.18	5.69
2N2159	5	80–160	5.0	90	170	11.96	9.49
2N1549§	11	10–30	10	30	106	17.18	13.63
2N1550§	11	10–30	10	45	106	2.90	2.30
2N1551§	11	10–30	10	60	106	3.48	2.76
2N1552§	11	10–30	10	75	106	5.44	4.31
2N1553	11	30–60	10	30	106	5.80	4.60
2N1554	11	30–60	10	45	106	2.18	1.73
2N1555	11	30–60	10	60	106	2.83	2.24
2N1556#	11	30–60	10	75	106	3.41	2.70
2N1557	11	50–100	10	30	106	4.50	3.57
2N1558	11	50–100	10	45	106	2.39	1.90
2N1559	11	50–100	10	60	106	3.05	2.42
2N1560•	11	50–100	10	75	106	3.70	2.93
MP500*	7	30–60	15	45	170	4.79	3.80
MP501*	7	30–60	15	60	170	5.80	4.60
MP502*	7	30–60	15	75	170	8.70	6.90
MP503	7	30–60	15	90	170	11.60	9.20
MP504*	7	50–100	15	45	170	19.58	15.53
MP505*	7	50–100	15	60	170	5.95	4.72
MP506*	7	50–100	15	75	170	8.99	7.13
MP507	7	50–100	15	90	170	12.04	9.55
2N1162	11	15–65	25	35	106	20.30	16.10
2N1163	4	15–65	25	35	106	4.79	3.80
2N1164	11	15–65	25	60	106	5.51	4.37
2N1165▲	4	15–65	25	60	106	6.82	5.41
2N1166	11	15–65	25	75	106	7.54	5.98
2N1167	4	15–65	25	75	106	7.11	5.64
						8.12	6.44

*A version available (2N1539A, MP500A). †V_{CEO}. ‡JAN2N2079A available. §2N1549A, JAN2N1549A–2N1552A, JAN2N1552A are available. #JAN2N1556A available. •JAN2N1560A available. ▲JAN type available.

ALLOY HIGH-CURRENT—HIGH GAIN SWITCH

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

Motorola Type	Case	h_{FE} at I_C Min.	h_{FE} at I_C A	V_{CES} Volts	P_D W	Net Ea., Lots of 1-49	Net Ea., Lots of 50-249
2N4048	7	15	60	45	170	$ 7.18	$ 5.69
2N4049	7	15	60	60	170	10.15	8.05
2N4050	7	15	60	75	170	12.76	10.12
2N4051	7	15	60	45	170	7.47	5.92
2N4052	7	15	60	60	170	10.51	8.34
2N4053	7	15	60	75	170	13.05	10.35
2N4276	3	15	60	30	170	5.08	4.03
2N4277	3	15	60	30	170	5.08	4.03
2N4278	3	15	60	45	170	6.09	4.83
2N4279	3	15	60	45	170	6.09	4.83
2N4280	3	15	60	60	170	7.40	5.87
2N4281	3	15	60	60	170	7.54	5.98
2N4282	3	15	60	75	170	9.14	7.25
2N4283	3	15	60	75	170	9.14	7.25

SILICON POWER TRANSISTORS

COMPLEMENTARY POWER TRANSISTORS

This list represents the large number of "off-the-shelf" complementary silicon power transistors available. For convenience in choosing complements, a selection can be made on the basis of maximum collector current, case, and voltage. Ic ratings are maximum.

Ic A	Case	BV CEO V	Motorola Type NPN	Motorola Type PNP
1.0	31	100	2N5681	2N5679
		120	2N5682	2N5680
1.5	77	40	MJE720	MJE710
		60	MJE721	MJE711
		80	MJE722	MJE712
3.0	31	40	2N4237	2N4234
		60	2N4238	2N4235
		80	2N4239	2N4236
	77	40	2N4921	2N4918
		60	2N4922	2N4919
		80	2N4923	2N4920
		40	MJE180	MJE170
		60	MJE181	MJE171
		80	MJE182	MJE172
		30	MJE520	MJE370
		30	MJE3520	MJE3370
	199	30	MJE-520K	MJE-370K
		40	MJE2520	MJE2370
		60	MJE2521	MJE2371
		40	MJE2522	MJE2490
		60	MJE2523	MJE2491
		40	MJE4921	MJE4918
		60	MJE4922	MJE4919
		80	MJE4923	MJE4920
4.0	80	55	2N3054A	2N6049
		60	2N3766	2N3740
		80	2N3767	2N3741
		40	2N4910	2N4898
		60	2N4911	2N4899
		80	2N4912	2N4900
	77	40	2N5190	2N5193
		60	2N5191	2N5194
		80	2N5192	2N5195
		40	2N6037	2N6034
		60	2N6038	2N6035
		80	2N6039	2N6036
		40	MJE521	MJE731
		40	MJE3521	MJE3371
		60	MJE800	MJE700
		60	MJE801	MJE701
		80	MJE802	MJE702
		80	MJE803	MJE703
		40	MJE220	MJE230
		40	MJE221	MJE231
		40	MJE222	MJE232
		60	MJE223	MJE233
		60	MJE224	MJE234
		60	MJE225	MJE235
		80	MJE240	MJE250
		80	MJE241	MJE251
		80	MJE242	MJE252
		100	MJE243	MJE253
		100	MJE244	MJE254
	11	40	MJ480	MJ490
		60	MJ481	MJ491
		60	MJ4000	MJ4010
		80	MJ4001	MJ4011
	253	60	MJ4200	MJ4210
		80	MJ4201	MJ4211
	199	40	MJE-521K	MJE-371K
		40	MJE5190	MJE5193
		60	MJE5191	MJE5194
		80	MJE5192	MJE5195
5.0	90	50	MJE205	MJE105
		60	MJE1100	MJE1090
		60	MJE1101	MJE1091
		80	MJE1102	MJE1092
		80	MJE1103	MJE1093
		40	2N5977	2N5974
		60	2N5978	2N5975
		80	2N5979	2N5976
	11	40	2N5067	2N4901
		60	2N5068	2N4902
		80	2N5069	2N4903
		40	2N4913	2N4904
		60	2N4914	2N4905
		80	2N4915	2N4906
		60	2N5869	2N5867
		80	2N5870	2N5868
	79	80	2N5336	2N6190
		80	2N5337	2N6191
		100	2N5338	2N6192
		100	2N5339	2N6193
5.0	77	25	MJE200	MJE210
	199	40	MJE5977	MJE5974
		60	MJE5978	MJE5975
		80	MJE5979	MJE5976
		40	MJE2020	MJE2010
		60	MJE2021	MJE2011
6.0	11	100	2N5758	2N6226
		120	2N5759	2N6227
		140	2N5760	2N6228
7.0	11	60	2N5873	2N5871
		80	2N5874	2N5872
	80	60	2N6315	2N6317
		80	2N6316	2N6318
8.0	11	60	MJ1000	MJ900
		80	MJ1001	MJ901
		60	2N6055	2N6053
		80	2N6056	2N6054
	80	60	2N6300	2N6298
		80	2N6301	2N6299
	90	60	MJE6043	MJE6040
		80	MJE6044	MJE6041
		100	MJE6045	MJE6042
	199	60	2N6043	2N6040
		80	2N6044	2N6041
		100	2N6045	2N6042
10	90	60	MJE2801	MJE2901
		60	MJE3055	MJE2955
	199	60	MJE-2801K	MJE-2901K
		60	3055K	2955K
	11	60	2N3713	2N3789
		80	2N3714	2N3790
		60	2N3715	2N3791
		80	2N3716	2N3792
		60	2N3055	2N4908
		60	MJ2840	MJ2940
		80	MJ2841	MJ2941
		60	2N5877	2N5875
		80	2N5878	2N5876
		60	MJ3000	MJ2500
		80	MJ3001	MJ2501
		100	2N5632	2N6229
		120	2N5633	2N6230
		140	2N5634	2N6231
	160	80	2N5477	2N6182
		80	2N5478	2N6183
		100	2N5479	2N6184
		100	2N5480	2N6185
		80	2N5346	2N6186
		80	2N5347	2N6187
		100	2N5348	2N6188
		100	2N5349	2N6189
12	90	40	2N5989	2N5986
		60	2N5990	2N5987
		80	2N5991	2N5988
	11	60	2N6057	2N6050
		80	2N6058	2N6051
		100	2N6059	2N6052
15	90	40	MJE1660	MJE1290
		60	MJE1661	MJE1291
	11	40	MJ2801	MJ2901
		60	2N5881	2N5879
		80	2N5882	2N5880
		60	2N3055	MJ2955
16	11	60	MJ4033	MJ4030
		80	MJ4034	MJ4031
		100	MJ4035	MJ4032
		100	2N5629	2N6029
		120	2N5630	2N6030
		140	2N5631	2N6031
20	11	80	2N5303	2N5745
		60	2N6282	2N6285
		80	2N6283	2N6286
		100	2N6284	2N6287
25	11	60	2N5885	2N5883
		80	2N5886	2N5884
30	11	40	2N5301	2N4398
		60	2N5302	2N4399
		90	MJ802	MJ4502
50	11	60	2N5685	2N5683
		80	2N5686	2N5684

SEE ANOTHER PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

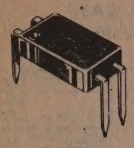
NPN POWER TRANSISTORS—METAL CASE

Types are listed in order of collector current for optimized hFE, then in numerical sequence.

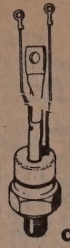
Motorola Type	Case	hFE at Ic Min.-Max.	hFE at Ic A	BVCEO Volts	PD W	Min. fT MHz	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N3439	31	40–160	0.02	350	10	15	$ 1.83	$ 1.45
2N3440	31	40–160	0.02	250	10	15	1.61	1.28
MJ420	31	25–250	0.03	250	0.8	15	1.54	1.22
MJ421	31	25–250	0.03	325	0.8	15	1.77	1.40
MJ400	80	30–300	0.05	325	6.67	15	1.64	1.30
MJ2251	80	25–200	0.05	225	10	10	1.81	1.44
MJ2252	80	25–200	0.05	300	10	10	1.96	1.55
MJ3201	80	30–200	0.05	225	15	15	1.67	1.32
MJ3202	80	30–200	0.05	300	15	15	1.81	1.44
2N3738	80	50–200	0.1	225	15	10	1.65	1.31
MJ3026	11	25 min.	0.25	275	80	.....	2.35	1.86
MJ3027	11	25 min.	0.25	300	80	.....	2.62	2.08
2N4237s	31	30–150	0.25	40	6.0	1.0	1.45	1.15
2N4238s	31	30–150	0.25	60	6.0	1.0	1.67	1.32
2N4239s	31	30–150	0.25	80	6.0	1.0	1.81	1.44
2N5681	31	40–150	0.25	100	10	30	1.81	1.44
2N5682	31	40–150	0.25	120	10	30	2.03	1.61
MJ3028	11	25 min.	0.3	300	100	.....	2.90	2.30
MJ1800	11	40–120	0.4	250	100	.....	3.23	2.56
MJ3029	11	30 min.	0.4	250	125	.....	2.62	2.08
MJ413	11	20–80	0.5	325	125	.....	2.71	2.15
MJ2249	80	25–200	0.5	60	20	15	1.64	1.30
MJ2250	80	25–200	0.5	80	20	15	1.87	1.48
2N3054A	80	25–100	0.5	55	75	3.0	1.22	.97
MJ3101	80	25–200	0.5	40	20	15	1.42	1.13
2N3441	80	20–80	0.5	140	25	0.2	3.63	2.88
2N3766	80	40–160	0.5	60	20	10	1.74	1.38
2N3767	80	40–160	0.5	80	20	10	1.96	1.55
2N4910	80	20–100	0.5	40	25	3.0	1.23	.98
2N4911	80	20–200	0.5	60	25	3.0	1.31	1.04
2N4912	80	20–100	0.5	80	25	3.0	1.38	1.09
2N5050	80	25–100	0.75	125	40	10	3.74	2.97
2N5051	80	25–100	0.75	150	40	10	4.34	3.44
2N5052	80	25–100	0.75	200	40	10	4.86	3.85
MJ410	11	30–90	1.0	200	100	2.5	2.68	2.13
MJ411	11	30–90	1.0	300	100	2.5	2.97	2.36
MJ423	11	30–90	1.0	325	125	2.5	4.44	3.52
MJ424	11	30–90	1.0	350	100	2.5	7.05	5.59
MJ425	11	30–90	1.0	400	100	2.5	8.42	6.68
MJ480	11	30–200	1.0	40	87.5	4.0	1.74	1.38
MJ481	11	30–200	1.0	60	87.5	4.0	1.89	1.50
2N3902 §	11	30–90	1.0	400	100	2.8	6.38	5.06
2N5067	11	20–180	1.0	40	87.5	4.0	1.38	1.09
2N5068	11	20–80	1.0	60	87.5	4.0	1.60	1.27
2N5069	11	20–80	1.0	80	87.5	4.0	1.81	1.44
2N5157	11	30–90	1.0	500	100	2.8	11.60	9.20
2N6233	80	25–125	1.0	225	50	20	5.52	4.38
2N6234	80	25–125	1.0	275	50	20	5.76	4.57
2N6235	80	25–125	1.0	325	50	20	5.97	4.74
2N4231A	80	25–150	1.5	40	35	4.0	1.23	.98
2N4232A	80	25–150	1.5	60	35	4.0	1.38	1.09
2N4233A	80	25–150	1.5	80	35	4.0	1.74	1.38
MJ4200	253	750‡	2.0	60	50	4.0	3.99	3.16
MJ4201	253	750‡	2.0	80	50	4.0	4.35	3.45
2N5336	79	30–120	2.0	80	6.0	30	6.09	4.83
2N5337	79	60–240	2.0	80	6.0	30	7.76	6.15
2N5338	79	30–120	2.0	100	6.0	30	8.58	6.81
2N5339	79	60–240	2.0	100	6.0	30	10.25	8.13
2N5346	160*	30–120	2.0	80	60	30	28.71	22.77
2N5347	160*	60–240	2.0	80	60	30	33.71	26.74
2N5348	160*	30–120	2.0	100	60	30	31.90	25.30
2N5349	160*	60–240	2.0	100	60	30	38.86	30.82
2N5427	80	30–120	2.0	80	40	30	6.60	5.23
2N5428	80	60–240	2.0	80	40	30	8.32	6.60
2N5429	80	30–120	2.0	100	40	30	9.18	7.28
2N5430	80	60–240	2.0	100	40	30	10.80	8.57
2N5304	9•	30–120	2.0	40	25	100	172.19	136.56
2N6294	80	750‡	2.0	60	50	4.0	1.67	1.32
2N6295	80	750‡	2.0	80	50	4.0	1.96	1.55
MJ431	11	15–35	2.5	325	125	2.5	5.73	4.54
MJ3040	11	100‡	2.5	300	100	.....	5.66	4.49
MJ3041	11	250‡	2.5	300	100	.....	7.18	5.69
MJ3042	11	250‡	2.5	350	100	.....	8.85	7.02
MJ3430	11	15–45	2.5	300	125	2.5	7.89	6.26
2N4913	11	25–100	2.5	40	87.5	4.0	1.67	1.32
2N4914	11	25–100	2.5	60	87.5	4.0	1.81	1.44
2N4915	11	25–100	2.5	80	87.5	4.0	1.96	1.55
2N5241	11	15–35	2.5	400	125	2.5	17.23	13.66
2N6315	80	20–100	2.5	60	90	4.0	1.52	1.21
2N6316	80	20–100	2.5	80	90	4.0	1.67	1.32
MJ1000	11	1000†	3.0	60	90	.....	2.28	1.81
MJ1001	11	1000†	3.0	80	90	.....	3.10	2.46
MJ2840	11	20–100	3.0	60	150	2.0	1.81	1.44
MJ3030	11	3.75†	3.0	325	125	.....	4.00	3.17
2N3442	11	20–70	3.0	120	117	.....	2.90	2.30
2N3445	11	20–60	3.0	60	115	10	7.61	6.04
2N3446	11	20–60	3.0	80	115	10	11.24	8.91
2N3713	11	15 min.	3.0	60	150	2.5	2.61	2.07
2N3714	11	15 min.	3.0	80	150	2.5	2.83	2.24
2N3715*	11	30 min.	3.0	60	150	2.5	3.05	2.42
2N3716*	11	30 min.	3.0	80	150	2.5	3.48	2.76

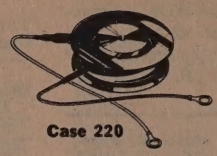
*Isolated collector, TO-59. †Collector common to case, TO-59. ‡Min. §JAN and JANTX types available. ƒA version available. •TO-61.

NPN POWER TRANSISTORS CONT'D ON NEXT PAGE


Case 206

Case 211-01


Case 219


Case 220

Case 221

Case 226

Case 235

SILICON POWER TRANSISTORS

NPN POWER TRANSISTORS—METAL CASE (CONTINUED)

Motorola Type	Case	hFE at IC Min.-Max.	hFE at IC A	BVCEO Volts	PD W	Min. fT MHz	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N5758	11	25–100	3.0	100	150	1.0	$2.83	$2.24
2N5759	11	20–80	3.0	120	150	1.0	4.32	3.43
2N5760	11	15–60	3.0	140	150	1.0	5.39	4.28
2N6306	11	15–75	3.0	250	125	5.0	4.52	3.59
2N6307	11	15–75	3.0	300	125	5.0	5.10	4.05
2N6308	11	12–60	3.0	350	125	50	6.61	5.24
MJ1200	253	750†	4.0	60	160	4.0	4.64	3.68
MJ1201	253	750†	4.0	80	160	4.0	5.50	4.36
MJ2841	11	20–100	4.0	80	150	2.0	2.18	1.73
2N3055*	11	20–70	4.0	60	115	1.0	1.45	1.15
2N4877	79	20–100	4.0	60	10	4.0	3.74	2.97
2N5633	11	20–80	4.0	120	150	1.0	4.71	3.74
2N5877	11	20–100	4.0	60	150	4.0	1.38	1.09
2N5878	11	20–100	4.0	80	150	4.0	1.87	1.48
2N6055	11	750†	4.0	60	100	4.0	2.03	1.61
2N6056	11	750†	4.0	80	100	4.0	2.25	1.78
2N6300	80	750†	4.0	60	75	4.0	2.20	1.75
2N6301	80	750†	4.0	80	75	4.0	2.49	1.98
MJ3000	11	1000†	5.0	60	150	.....	3.29	2.61
MJ3001	11	1000†	5.0	80	150	.....	3.84	3.05
2N3447	11	40–120	5.0	60	115	10	10.51	8.34
2N3448	11	40–120	5.0	80	115	10	13.78	10.93
2N4348	11	15–60	5.0	120	120	0.2	3.34	2.65
2N5632	11	25–100	5.0	100	150	1.0	3.48	2.76
2N5634	11	15–60	5.0	140	150	1.0	5.80	4.60
2N5881	11	20–100	6.0	60	160	4.0	2.76	2.19
2N5882	11	20–100	6.0	80	160	4.0	3.12	2.47
2N6057	11	750†	6.0	60	150	4.0	3.42	2.71
2N6058	11	750†	6.0	80	150	4.0	3.83	3.04
2N6059	11	750†	6.0	100	150	4.0	4.54	3.60
MJ802	12	25–100	7.5	90	200	.....	5.38	4.27
MJ2801	11	15–60	8.0	40	115	1.0	2.76	2.19
2N3773	11	15–60	8.0	140	150	0.8	4.42	3.51
2N5629	11	25–100	8.0	100	200	1.0	5.39	4.28
2N5630	11	20–80	8.0	120	200	1.0	6.06	4.81
2N5631	11	15–60	8.0	140	200	1.0	7.13	5.66
MJ6302	11	15–60	8.0	120	200	1.0	4.47	3.54
MJ3772	11	15–60	10	60	150	2.0	2.90	2.30
MJ4033	11	1000†	10	60	150	.....	6.02	4.77
MJ4034	11	1000†	10	80	150	.....	6.60	5.23
MJ4035	11	1000†	10	100	150	.....	7.40	5.87
2N5303*	12	15–60	10	80	200	2.0	6.16	4.89
2N5885	11	20–100	10	60	200	4.0	4.06	3.22
2N5886	11	20–100	10	80	200	4.0	4.71	3.74
2N6282	11	750†	10	60	160	4.0	5.80	4.60
2N6283	11	750†	10	80	160	4.0	6.26	4.97
2N6284	11	750†	10	100	160	4.0	7.02	5.57

*JAN and JANTX types available. †Minimum. ‡TO-61.

PD = 250 W except as otherwise noted.

Motorola Type	Case	hFE at IC Min.	hFE at IC A	BVCEO V	Min. fT MHz	Net Each, Lots of 1-49	Net Each, Lots of 50-249	Net Each, Lots of 250-999
2N6338*	11	30	10	100	40	$11.31	$ 8.97	$ 7.80
2N6339*	11	30	10	120	40	12.25	9.72	8.45
2N6340*	11	30	10	140	40	13.85	10.98	9.55
2N6341*	11	30	10	150	40	16.68	13.23	11.50
MJ7000†	188#	20	10	100	30	68.19	54.08	47.03
MJ3771†	11	15	15	40	2.0	2.90	2.30	2.00
2N5301*	12	16	15	40	2.0	4.35	3.45	3.00
2N5302*‡	12	15	15	60	2.0	5.08	4.03	3.50
2N6274	197	30	20	100	30	24.94	19.78	17.20
2N6275	197	30	20	120	30	26.83	21.28	18.50
2N6276	197	30	20	140	30	30.45	24.15	21.00
2N6277	197	30	20	150	30	36.18	28.69	24.95
2N6278	188#	30	20	100	30	75.63	59.98	52.16
2N6279	188#	30	20	120	30	81.27	64.46	56.05
2N6280	188#	30	20	140	30	90.76	71.98	62.59
2N6281	188#	30	20	150	30	103.24	81.88	71.20
2N5685§	197	15	25	60	2.0	13.63	10.81	9.40
2N5686§	197	15	25	80	2.0	16.89	13.40	11.65

*PD = 200 W. †PD = 150 W. ‡JAN and JANTX types available. §PD = 300 W. #TO-63, •TO-114.

PNP POWER TRANSISTORS—METAL CASE

Motorola Type	Case	hFE at IC Min.-Max.	hFE at IC A	BVCEO Volts	PD W	Min. fT MHz	Net Ea., Lots 1-49	Net Ea., Lots 50-249
MJ2253	80	20–100	0.25	60	25	3.0	$ 2.07	$ 1.64
MJ2254	80	20–100	0.25	60	25	3.0	2.32	1.84
MJ3701	80	20–100	0.25	40	25	3.0	1.75	1.39
2N3740†	80	30–100	0.25	60	25	4.0	1.52	1.21
2N3741†	80	30–100	0.25	60	25	4.0	1.74	1.38
2N4234s	31*	30–150	0.25	40	6.0	3.0	1.74	1.38
2N4235s	31*	30–150	0.25	60	6.0	3.0	2.03	1.61
2N4236s	31*	30–150	0.25	80	6.0	3.0	2.18	1.73
2N5679	31*	40–150	0.25	100	10	30	2.32	1.84
2N5680	31*	40–150	0.25	120	10	30	2.54	2.01
MJ4645	79	20 min.	0.5	200	5.0	40	11.21	8.89
MJ4646	79	20 min.	0.5	300	5.0	40	12.70	10.07
MJ4647	79	20 min.	0.5	400	5.0	30	17.92	14.21
MJ4648	79	20 min.	0.5	350	5.0	30	14.94	11.85
2N4898	80	20–100	0.5	40	25	3.0	1.38	1.09
2N4899	80	20–100	0.5	60	25	3.0	1.52	1.21
2N4900	80	20–100	0.5	60	25	3.0	1.74	1.38
2N5344	80	25–100	0.5	250	40	60	12.33	9.78
2N5345	80	25–100	0.5	300	40	60	14.50	11.50
2N6049	80	25–100	0.5	55	75	3.0	1.74	1.38
MJ490	11	30–200	1.0	40	87.5	4.0	2.18	1.73
MJ491	11	30–200	1.0	60	87.5	4.0	2.58	2.05
2N3719	31*	25–180	1.0	40	6.0	60	9.43	7.48
2N3720	31*	25–180	1.0	60	6.0	60	10.51	8.34
2N4901	11	20–80	1.0	40	87.5	4.0	1.74	1.38
2N4902	11	20–80	1.0	60	87.5	4.0	2.39	1.90
2N4903	11	20–80	1.0	80	87.5	4.0	2.90	2.30
2N3867§	31	40–200	1.5	40	6.0	60	8.56	6.79
2N3868§	31	30–150	1.5	60	6.0	60	9.28	7.36
2N5867	11	20–100	1.5	60	87.5	4.0	1.35	1.07
2N5868	11	20–100	1.5	80	87.5	4.0	1.75	1.39
2N6303	31	30–150	1.5	80	6.0	60	12.62	10.01
MJ4210	253	750‡	2.0	60	50	4.0	5.22	4.14
MJ4211	253	750‡	2.0	80	50	4.0	5.58	4.43
2N6186	160†	30–120	2.0	80	60	30	34.73	27.54
2N6187	160†	60–240	2.0	80	60	30	40.46	32.09
2N6188	160†	30–120	2.0	100	60	30	38.28	30.36
2N6189	160†	60–240	2.0	100	60	30	46.69	37.03
2N6190	79	30–120	2.0	80	10	30	13.05	10.35
2N6191	79	60–240	2.0	80	10	30	13.78	10.93
2N6192	79	30–120	2.0	100	10	30	14.50	11.50
2N6193	79	60–240	2.0	100	10	30	15.95	12.65
2N6296	80	750‡	2.0	60	50	4.0	2.10	1.67
2N6297	80	750‡	2.0	80	50	4.0	2.38	1.89
MJ6700	160†	25–180	2.0	60	60	30	29.73	23.58
MJ6701	160†	25–180	2.0	80	60	30	32.99	26.16
MJ8100	79	25–180	2.0	60	10	30	12.69	10.06
MJ8101	79	25–180	2.0	80	10	30	13.41	10.64
2N4904	11	25–100	2.5	40	87.5	4.0	2.18	1.73
2N4905	11	25–100	2.5	60	87.5	4.0	2.90	2.30
2N4906	11	25–100	2.5	80	87.5	4.0	3.63	2.88
2N6317	80	20–100	2.5	60	90	4.0	1.89	1.50
2N6318	80	20–100	2.5	60	90	4.0	2.10	1.67
MJ900	11	1000‡	3.0	60	90	....	3.31	2.62
MJ901	11	1000‡	3.0	80	90	....	3.93	3.12
MJ2940	11	20–100	3.0	60	150	4.0	3.86	3.06
2N3789	11	15 min.	3.0	60	150	4.0	3.77	2.99
2N3790	11	15 min.	3.0	80	150	4.0	4.35	3.45
2N3791§	11	30 min.	3.0	60	150	4.0	4.06	3.22
2N3792§	11	30 min.	3.0	80	150	4.0	4.71	3.74
2N6226	11	25–100	3.0	100	150	1.0	4.23	3.36
2N6227	11	20–80	3.0	120	150	1.0	4.97	3.94
2N6228	11	15–60	3.0	140	150	1.0	6.21	4.92
MJ920	253	750‡	4.0	60	160	4.0	5.58	4.43
MJ921	253	750‡	4.0	80	160	4.0	6.44	5.11
MJ2267	11	20–100	4.0	40	150	3.0	4.93	3.91
MJ2268	11	20–100	4.0	55	150	3.0	5.45	4.32
MJ2941	11	20–100	4.0	80	150	4.0	4.63	3.67
MJ2955	11	20–70	4.0	60	150	4.0	1.81	1.44
2N5875	11	20–100	4.0	60	150	4.0	1.75	1.39
2N5876	11	20–100	4.0	80	150	4.0	2.28	1.81

*Solid header. †A version, JAN and JANTX types available. ‡Minimum. §JAN and JANTX types available. #Collector common to case, TO-59

PNP POWER TRANSISTORS CONT'D ON NEXT PAGE
SEE ANOTHER PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

SILICON POWER TRANSISTORS

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

PNP POWER TRANSISTORS—METAL CASE (CONT'D)

Motorola Type	Case	h_{FE} at I_C Min.-Max.	A	BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Ea., Lots 1-49	50-249
2N6053	11	750‡	4.0	60	100	4.0	2.32	1.84
2N6054	11	750‡	4.0	80	100	4.0	2.54	2.01
2N6298	80	750‡	4.0	60	75	4.0	3.12	2.47
2N6299	80	750‡	4.0	80	75	4.0	3.45	2.74
MJ2500	11	1000‡	5.0	60	150	.....	4.05	3.21
MJ2501	11	1000‡	5.0	80	150	.....	4.58	3.63
2N6229	11	25–100	5.0	100	150	1.0	4.35	3.45
2N6230	11	20–80	5.0	120	150	1.0	5.96	4.73
2N6231	11	15–60	5.0	140	150	1.0	7.22	5.73
2N5879	11	20–100	6.0	60	160	4.0	2.91	2.31
2N5880	11	20–100	6.0	80	160	4.0	3.68	2.92
2N6050	11	750‡	6.0	60	150	4.0	4.38	3.47
2N6051	11	750‡	6.0	80	150	4.0	4.76	3.77
2N6052	11	750‡	6.0	100	150	4.0	5.58	4.43
MJ4502	12	25–100	7.5	90	200	.....	5.66	4.49
MJ2901	11	15–60	8.0	40	115	1.0	3.78	2.97
2N6029	11	25–100	8.0	100	200	1.0	6.21	4.92
2N6030	11	20–80	8.0	120	200	1.0	6.96	5.52
2N6031	11	15–60	8.0	140	200	1.0	8.19	6.50
MJ450	3	20 min.	10	40	150	2.0	7.11	5.64
MJ4030	11	1000‡	10	60	150	.....	6.31	5.00
MJ4031	11	1000‡	10	80	150	.....	7.03	5.58
MJ4032	11	1000‡	10	100	150	.....	7.76	6.15
2N5745§	12	15–60	10	80	200	2.0	9.37	7.43
2N5883	11	20–100	10	60	200	4.0	4.28	3.39
2N5884	11	20–100	10	80	200	4.0	5.37	4.26
2N6285	11	750‡	10	60	160	4.0	6.13	4.86
2N6286	11	750‡	10	80	160	4.0	6.74	5.35
2N6287	11	750‡	10	100	160	4.0	7.63	6.05
2N4398	12	15–60	15	40	200	4.0	5.95	4.72
2N4399	12	15–60	15	60	200	4.0	7.83	6.21
2N5683	197	15–60	25	60	300	2.0	18.85	14.95
2N5684	197	15–60	25	80	300	2.0	21.75	17.25

NPN POWER TRANSISTORS—PLASTIC CASE

MJE3439	77	40–160	0.02	350	15	15	$1.09	$0.86
MJE3440	77	40–160	0.02	250	15	15	.86	.68
MJE340	77	30–240	0.05	300	30	.....	.97	.77
MJE340K	199	30–240	0.05	300	20.8	.....	1.23	.98
MJE341	77	25–200	0.05	150	20.8	15	.90	.71
MJE341K	199	25–200	0.05	150	30	15	1.15	.91
MJE344	77	30–300	0.05	200	20.8	15	.93	.74
MJE344K	199	30–300	0.05	200	30	15	1.17	.93
MJE345	77	30–300	0.05	325	20.8	15	1.03	.82
MJE2360	199	25–200	0.05	350	30	10#	1.16	.92
MJE2361	199	50–250	0.05	350	30	10#	1.52	1.21
MJE180	77	50–250	0.1	40	12.5	50	.61	.48
MJE181	77	50–250	0.1	60	12.5	50	.68	.54
MJE182	77	50–250	0.1	80	12.5	50	.80	.63
MJE3738	199	40–200	0.1	225	30	10#	1.16	.92
MJE3739	199	40–200	0.1	300	30	10#	1.31	1.04
2N5655	77	30–250	0.1	250	20	10	1.03	0.82
MJE5655	199	30–250	0.1	250	30	10	1.28	1.01
2N5656	77	30–250	0.1	300	20	10	1.25	.99
MJE5656	199	30–250	0.1	300	30	10	1.49	1.18
2N5657	77	30–250	0.1	350	20	10	1.52	1.21
MJE5657	199	30–250	0.1	350	30	10	1.77	1.40
MJE720	77	40 min.	0.15	40	2.0	.....	.70	.55
MJE721	77	40 min.	0.15	60	20	.....	.81	.64
MJE722	77	40 min.	0.15	80	20	.....	.97	.77
MJE220	77	40–200	0.2	40	15	50	.94	.75
MJE221	77	40–150	0.2	40	15	50	.87	.69
MJE223	77	40–200	0.2	60	15	50	1.07	.85
MJE224	77	40–250	0.2	60	15	50	1.00	.79
MJE240	77	40–200	0.2	80	15	40	1.22	.97
MJE241	77	40–120	0.2	80	15	40	1.15	.91
MJE242	77	25 min.	0.2	80	15	40	1.02	.81
MJE243	77	40–120	0.2	100	15	40	1.31	1.04
MJE244	77	25 min.	0.2	100	15	40	1.16	.92
MJE2520	199	40–200	0.2	40	40	3.0	.99	.78
MJE2160	199	30–240	0.5	300	50	.....	1.86	1.47
2N4921	77	20–100	0.5	40	30	3.0	1.09	.86
MJE4921	199	20–100	0.5	40	40	3.0	1.33	1.06
2N4922	77	20–100	0.5	60	30	3.0	1.31	1.04
MJE4922	199	20–100	0.5	60	40	3.0	1.55	1.23
2N4923	77	20–100	0.5	80	30	3.0	1.52	1.21
MJE4923	199	20–100	0.5	80	40	3.0	1.77	1.40
MJE222	77	25 min.	1.0	40	15	50	.77	.61
MJE225	77	25 min.	1.0	60	15	50	.91	.72
MJE520	77	25 min.	1.0	30	25	.....	.99	.78
MJE520K	199	25 min.	1.0	30	40	.....	1.25	.99
MJE521	77	40 min.	1.0	40	40	.....	1.35	1.07
MJE521K	199	40 min.	1.0	40	60	.....	1.60	1.27
MJE2020	199	25–100	1.0	40	80	3.0	1.36	1.08
MJE2021	199	25–100	1.0	60	80	3.0	1.62	1.29
MJE3520	77	25 min.	1.0	30	40	.....	1.03	.82
MJE3521	77	40 min.	1.0	40	40	.....	1.41	1.12
MJE800	77	750*	1.5	60	40	.....	1.45	1.15
MJE802	77	750*	1.5	80	40	.....	1.70	1.35
MJE2480	199	20–100	1.5	40	60	2.0	1.16	.92
MJE2481	199	20–100	1.5	60	60	2.0	1.22	.97
2N5190	77	25–100	1.5	40	40	2.0	1.25	.99
MJE5190	199	25–100	1.5	40	60	2.0	1.51	1.20
2N5191	77	25–100	1.5	60	40	2.0	1.51	1.20

*Collector common to case, TO-59. †Isolated collector, TO-59. ‡Minimum. §JAN and JANTX types available. #Typical.

NPN POWER TRANSISTORS—PLASTIC CASE (CONT'D)

Motorola Type	Case	h_{FE} at I_C Min.-Max.	A	BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Each 1-49	50-249
MJE5191	199	25–100	1.5	60	60	2.0	$1.75	$1.39
2N5192	77	20–80	1.5	80	40	2.0	1.80	1.43
MJE5192	199	20–80	1.5	80	60	2.0	2.06	1.63
MJE200	77	45–180	2.0	25	15	65	.84	.67
MJE205	90	25–100	2.0	50	65	.....	1.81	1.44
MJE205K	199	25–100	2.0	50	65	.....	1.84	1.46
MJE801	77	750*	2.0	60	40	.....	1.65	1.31
MJE803	77	750*	2.0	80	40	.....	1.99	1.58
2N6037	77	750*	2.0	40	1.5	25	1.46	1.16
2N6038	77	750*	2.0	60	1.5	25	1.65	1.31
2N6039	77	750*	2.0	80	1.5	25	2.06	1.63
MJE2482	199	20–100	2.5	40	60	2.0	1.22	.97
MJE2483	199	20–100	2.5	60	60	2.0	1.26	1.00
2N5977	90	20–100	2.5	40	75	2.0	1.52	1.21
MJE5977	199	20–120	2.5	40	75	2.0	1.57	1.24
2N5978	90	20–120	2.5	60	75	2.0	1.77	1.40
MJE5978	199	20–100	2.5	60	75	2.0	1.80	1.43
2N5979	90	20–120	2.5	80	75	2.0	2.18	1.73
MJE5979	199	20–120	2.5	80	75	2.0	2.19	1.74
MJE1100	90	750*	3.0	60	70	1.0	1.93	1.53
MJE1102	90	750*	3.0	80	70	1.0	2.35	1.86
MJE2100	199	750*	3.0	60	70	.....	1.93	1.53
MJE2101	199	750*	3.0	60	70	.....	2.10	1.67
MJE2801	90	25–100	3.0	60	90	.....	1.64	1.30
MJE2801K	199	25–100	3.0	60	90	.....	1.77	1.40
2N6045	90	1000*	3.0	100	75	.....	2.18	1.73
MJE6045	90	1000*	3.0	100	75	.....	2.94	2.33
MJE1101	90	750*	4.0	60	70	1.0	2.10	1.67
MJE1103	90	750*	4.0	80	70	1.0	2.60	2.06
MJE2102	199	750*	4.0	80	70	.....	2.35	1.86
MJE2103	199	750*	4.0	80	70	.....	2.60	2.06
MJE3055	90	20–70	4.0	60	90	2.0	1.64	1.30
MJE3055K	199	20–70	4.0	60	90	2.0	1.77	1.40
2N5983	90	20–120	4.0	40	90	2.0	1.64	1.30
MJE5983	199	20–120	4.0	40	90	2.0	1.68	1.33
2N5984	90	20–120	4.0	60	90	2.0	1.89	1.50
MJE5984	199	20–120	4.0	60	90	2.0	1.91	1.52
2N5985	90	20–120	4.0	80	90	2.0	2.38	1.89
MJE5985	199	20–120	4.0	80	90	2.0	2.38	1.89
2N6043	90	1000*	4.0	60	75	.....	1.89	1.50
MJE6043	90	1000*	4.0	60	75	.....	2.12	1.68
2N6044	90	1000*	4.0	80	75	.....	2.03	1.61
MJE6044	90	1000*	4.0	80	75	.....	2.41	1.91
MJE1660	90	20–100	5.0	40	90	3.0	2.76	2.19
MJE1661	90	20–100	5.0	60	90	3.0	3.12	2.47
2N5989	90	20–120	6.0	40	100	2.0	2.70	2.14
2N5990	90	20–120	6.0	60	100	2.0	2.87	2.28

*Minimum.

SEE ANOTHER PAGE FOR CASE ILLUSTRATIONS

OUR STOCKS ARE COMPLETE AND UP TO DATE. WRITE US FOR INFORMATION AND PRICING ON ALL NEW OR UNLISTED ITEMS.

SILICON POWER TRANSISTORS

PNP POWER TRANSISTORS— PLASTIC CASE

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

Motorola Type	Case	h_{FE} at I_C Min.- Max.	A	BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Each 1-49	Net Each 50-249
MJE170	77	50–250	0.1	40	12.5	50	$0.67	$0.53
MJE171	77	50–250	0.1	60	12.5	50	.73	.58
MJE172	77	50–250	0.1	80	12.5	50	.86	.68
MJE710	77	40 min.	0.15	40	20	.....	.77	.61
MJE711	77	40 min.	0.15	60	20	.....	.88	.70
MJE712	77	40 min.	0.15	80	20	.....	1.04	.83
MJE230	77	40–200	0.2	40	15	50	1.06	.84
MJE231	77	40–150	0.2	40	15	50	.97	.77
MJE233	77	40–200	0.2	60	15	50	1.20	.95
MJE234	77	40–150	0.2	60	15	50	1.13	.90
MJE250	77	40–200	0.2	80	15	40	1.33	1.06
MJE251	77	40–120	0.2	80	15	40	1.26	1.00
MJE252	77	25 min.	0.2	80	15	40	1.19	.94
MJE253	77	40–120	0.2	100	15	40	1.44	1.14
MJE254	77	25 min.	0.2	100	15	40	1.32	1.05
MJE2370	199	40–200	0.2	40	40	3.0	1.10	.87
2N4918	77	20–100	0.5	40	60	3.0	1.28	1.01
MJE4918	199	20–100	0.5	40	40	3.0	1.52	1.21
2N4919	77	20–100	0.5	60	60	3.0	1.52	1.21
MJE4919	199	20–100	0.5	60	40	3.0	1.77	1.40
2N4920	77	20–100	0.5	80	30	3.0	1.80	1.43
MJE4920	199	20–100	0.5	80	40	3.0	2.04	1.62
MJE232	77	25 min.	1.0	40	15	50	.88	.70
MJE235	77	25 min.	1.0	60	15	50	1.03	.82
MJE370	77	25 min.	1.0	30	25	.....	1.13	.90
MJE370K	199	25 min.	1.0	30	40	.....	1.38	1.09
MJE371	77	40 min.	1.0	40	40	.....	1.52	1.21
MJE371K	199	40 min.	1.0	40	60	.....	1.78	1.41
MJE2010	199	25–125	1.0	40	80	3.0	1.81	1.44
MJE2011	199	25–125	1.0	60	80	3.0	2.06	1.63
MJE2490	199	20–100	1.0	40	60	3.0	1.45	1.15
MJE2491	199	20–100	1.0	60	60	3.0	1.64	1.30
MJE3370	77	25 min.	1.0	30	25	.....	1.20	.95
MJE3371	77	40 min.	1.0	40	40	.....	1.58	1.25
MJE700	77	750*	1.5	60	40	.....	1.70	1.35
MJE702	77	750*	1.5	80	40	.....	2.00	1.59
2N5193	77	25–100	1.5	40	40	2.0	1.41	1.12
MJE5193	199	25–100	1.5	40	60	2.0	1.65	1.31
2N5194	77	25–100	1.5	60	40	2.0	1.65	1.31
MJE5194	199	25–100	1.5	60	60	2.0	1.90	1.51
2N5195	77	20–80	1.5	80	40	2.0	2.03	1.61
MJE5195	199	20–80	1.5	80	60	2.0	2.28	1.81
MJE105	90	25–100	2.0	50	65	.....	2.25	1.78
MJE105K	199	25–100	2.0	50	65	.....	2.26	1.79
MJE210	77	45–180	2.0	25	15	65	.96	.76
MJE701	77	750*	2.0	60	40	.....	1.93	1.53
MJE703	77	750*	2.0	80	40	.....	2.35	1.86
2N6034	77	750*	2.0	40	1.5	25	1.71	1.36
2N6035	77	750*	2.0	60	1.5	25	1.94	1.54
2N6036	77	750*	2.0	80	1.5	25	2.41	1.91
2N5974	90	20–120	2.5	40	75	2.0	1.70	1.35
MJE5974	199	20–120	2.5	40	75	2.0	1.74	1.38
2N5975	90	20–120	2.5	60	75	2.0	1.94	1.54
MJE5975	199	20–120	2.5	60	75	2.0	1.97	1.56
2N5976	90	20–120	2.5	80	75	2.0	2.35	1.86
MJE5976	199	20–120	2.5	80	75	2.0	2.35	1.86
MJE1090	90	750*	3.0	60	70	1.0	2.83	2.24
MJE1092	90	750*	3.0	80	70	1.0	3.31	2.62
MJE2090	199	750*	3.0	60	70	.....	2.83	2.24
MJE2091	199	750*	3.0	60	70	.....	3.07	2.44
MJE2901	90	25–100	3.0	60	90	.....	2.39	1.90
MJE2901K	199	25–100	3.0	60	90	.....	2.39	1.90
2N6042	90	1000*	3.0	100	75	.....	2.47	1.96
MJE6042	90	1000*	3.0	100	75	.....	4.00	3.17
MJE1091	90	750*	4.0	60	70	1.0	3.07	2.44
MJE1093	90	750*	4.0	80	70	1.0	3.65	2.90
MJE2092	199	750*	4.0	80	70	.....	3.31	2.62
MJE2093	199	750*	4.0	80	70	.....	3.65	2.90
MJE2955	90	20–70	4.0	60	90	2.0	2.39	1.90
MJE2955K	199	20–70	4.0	60	90	2.0	2.39	1.90
2N5980	90	20–120	4.0	40	90	2.0	2.26	1.79
MJE5980	199	20–120	4.0	40	90	2.0	2.28	1.81
2N5981	90	20–120	4.0	60	90	2.0	2.61	2.07
MJE5981	199	20–120	4.0	60	90	2.0	2.61	2.07
2N5982	90	20–120	4.0	80	90	2.0	3.16	2.51
MJE5982	199	20–120	4.0	80	90	2.0	3.13	2.48
2N6040	90	1000*	4.0	60	75	.....	2.10	1.67
MJE6040	90	1000*	4.0	60	75	.....	3.18	2.52
2N6041	90	1000*	4.0	80	75	.....	2.25	1.78
MJE6041	90	1000*	4.0	80	75	.....	3.47	2.75
MJE1290	90	20–100	5.0	40	90	3.0	3.63	2.88
MJE1291	90	20–100	5.0	60	90	3.0	4.06	3.22
2N5986	90	20–120	6.0	40	100	2.0	3.02	2.39
2N5987	90	20–120	6.0	80	100	2.0	3.16	2.51
2N5988	90	20–120	6.0	60	100	2.0	3.44	2.73

*Minimum.

SEE OTHER PAGES FOR CASE ILLUSTRATIONS

SMALL-SIGNAL HERMETIC TRANSISTORS

Following types are preferred types; chosen using performance and cost as the criteria. Many other types available. Listed in order of decreasing BV_{CEO} and h_{FE} values.

SILICON AMPLIFIER—300 mW TO 600 mW

Low current; normal operation—μA range.

Motorola Type	Case	Polarity	BV_{CEO} V	Min. h_{FE}	Net Ea., Lots 1-49	Net Ea., Lots 50-249
2N3799*	22	PNP	90	100	$3.50	$2.35
2N2484*	22	NPN	60	100	.52	.35
2N3799*	22	PNP	60	100	3.50	2.35
2N930A*†	22	NPN	45	100	1.80	1.09
2N929‡	22	NPN	45	50	2.25	1.50
2N918‡	20	NPN	45	25	2.90	1.73

Medium current; normal operation—low mA range. Type 2N2906, 2N2906A, 2N2907, 2N2907A also available in TO-46 (Case 26).

2N2907A‡	22	PNP	60	100	$2.20	$1.33
2N3251A‡	22	PNP	60	100	3.90	2.33
2N2906A‡	22	PNP	60	50	2.40	1.45
2N3250A‡	22	PNP	60	50	3.55	2.14
2N3073	20	PNP	60	25	.90	.60
2N2222A‡	22	NPN	40	100	1.20	.71
2N3947	22	NPN	40	100	2.75	1.85
2N2907‡	22	PNP	40	100	2.00	1.19
2N3251	22	PNP	40	100	3.55	2.14
2N2221A‡	22	NPN	40	50	1.65	.97
2N3946	22	NPN	40	50	2.40	1.60
2N2906‡	22	PNP	40	50	1.85	1.12
2N3250	22	PNP	40	50	3.20	1.94
2N2222‡	22	NPN	25	100	.95	.57
2N2221‡	22	NPN	25	50	1.05	.62

High current; normal operation—mid mA range.

2N720A	22	NPN	80	50	$1.32	$0.88
2N718A‡	22	NPN	60	50	.79	.60

SILICON AMPLIFIER—600 mW TO 1.0 W

Low current; normal operation—μA range.

2N4930s‡	79	PNP	200	50	$5.90	$3.95
2N3712s‡	31	NPN	100	100	2.25	1.50
MM3009	79	NPN	100	50	1.80	1.20

Medium current; normal operation—low mA range. Type 2N2904, 2N2904A, 2N2905, 2N2905A also available in TO-46 (Case 26).

2N4404	79	PNP	80	50	8.25	5.50
2N4928s	31	PNP	80	20	4.05	2.70
2N2219As‡	31	NPN	50	100	1.50	.90
2N2905As‡	31	PNP	50	100	.71	.55
2N2218As‡	31	NPN	50	50	1.40	.79
MM3053	79	NPN	50	50	.50	.33
2N2904As‡	31	PNP	50	50	2.55	1.52
2N2219s‡	31	NPN	20	100	.97	.63
2N2905s‡	31	PNP	20	100	.65	.50
2N2218s‡	31	NPN	20	50	.95	.57
2N1132A	31	PNP	20	50	1.75	1.35
2N2904s‡	31	PNP	20	50	.59	.45
2N4890	79	PNP	20	50	1.12	.75
2N1131A	31	PNP	20	20	1.43	1.10

High current; normal operation—mid mA range.

2N3501s‡	31	NPN	150	100	$12.60	$ 8.40
2N3637s‡	31	PNP	150	100	21.30	14.20
2N3500s‡	31	NPN	150	50	11.25	7.50
2N3636s‡	31	PNP	150	50	19.40	12.95
2N3114s	31	NPN	150	20	6.00	4.00
2N3499s‡	31	NPN	100	100	7.40	4.95
2N3635s‡	31	PNP	100	100	14.40	9.60
2N3498s‡	31	NPN	100	50	6.60	4.40
MM3007	79	NPN	100	50	2.55	1.70
2N3634s‡	31	PNP	100	50	13.20	8.80
MM5007	79	PNP	100	50	1.73	1.15
2N4929s	79	PNP	100	20	4.95	3.30
MM3005	79	NPN	60	50	1.60	1.05
MM3006	79	NPN	60	50	1.90	1.25
MM5005	79	PNP	60	50	1.12	.75
MM5006	79	PNP	60	50	1.35	.90

*Recommended for low noise application. †JAN type available. ‡JAN and JANTX types available.

SMALL SIGNAL HERMETIC TRANSISTORS

SILICON SWITCHING

Following types are preferred types; chosen using performance and cost as the criteria. Many other types available. Listed in order of decreasing BV_{CEO}, then in numerical order of t_{on} and t_{off} values.

Low current; specified switching Ic—5 mA–100 mA.

Motorola Type	Case	Polarity	BV_{CEO} V	t_{on} and t_{off}	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3637s*	31	PNP	175	<1.0 s	$21.30	$14.20
2N3495s	31	PNP	120	<1.0 s	12.75	8.50
2N3497	31	PNP	120	<1.0 s	12.75	8.50
2N2501	22	NPN	20	< 50 ns	4.70	3.15
2N3227	22	NPN	20	< 50 ns	2.40	1.60
2N3250	22	PNP	20	<350 ns	3.20	1.94
2N3250A*	22	PNP	20	<350 ns	3.55	2.14
2N3251	22	PNP	20	<350 ns	3.55	2.14
2N3251A*	22	PNP	20	<350 ns	3.90	2.33
2N708*	22	NPN	15	< 50 ns	.80	.45
2N2369A*	22	NPN	15	< 50 ns	1.50	.89
2N4260†	20	PNP	15	< 50 ns	12.35	8.25
2N4261†	20	PNP	15	< 50 ns	14.60	9.75
2N706‡	22	NPN	15	<150 ns	.69	.46
2N869A*	22	PNP	15	<150 ns	2.50	1.25
2N2481*	22	NPN	15	<150 ns	2.63	1.75
2N3647	26	NPN	10	< 50 ns	2.25	1.50

*JAN and JANTX types available. †Nonsaturated applications. ‡JAN type available.

Medium current; specified switching Ic—100 mA–500 mA. Type 2N2907 and 2N2907A also available in TO-46 (Case 26).

Motorola Type	Case	Polarity	BV_{CEO} V	t_{on} and t_{off}	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3501s*	31	NPN	150	<1 sec	$12.60	$8.40
2N2907A	22	PNP	50	<150 ns	2.20	1.33
2N2907	22	PNP	40	<150 ns	2.00	1.19
2N5859	79	NPN	40	<150 ns	.90	.65
2N4890	79	PNP	40	<350 ns	1.12	.75
2N914*	22	NPN	30	< 50 ns	.95	.63
2N2540	22	NPN	30	<150 ns	5.85	3.90
2N3249	22	PNP	30	<150 ns	4.65	3.10
2N3300s	31	NPN	30	<350 ns	1.05	.70
2N3302	22	NPN	30	<350 ns	1.05	.70
2N2959s	31	NPN	30	<1.0 s	2.70	1.80

High current; specified switching Ic—400 mA–1.5 A.

2N3444s†	31	NPN	50	<150 ns	$12.00	$ 8.00
2N3507*	31	NPN	50	<150 ns	13.20	8.80
2N5861	20	NPN	50	<150 ns	1.35	1.00
2N4405	79	PNP	50	<350 ns	9.75	6.50
2N4407	79	PNP	50	<350 ns	12.75	8.50
MM4033	79	PNP	50	<1.0 s	1.32	.88
2N3467s†	31	PNP	40	<150 ns	9.75	6.50
2N3506*	31	NPN	40	<150 ns	11.55	7.70
2N3244s	31	PNP	40	<350 ns	15.75	10.50
2N3303	31	NPN	30	< 50 ns	13.50	9.00
2N3252s	31	NPN	30	<150 ns	9.75	6.50

*JAN and JANTX types available. †JAN type available.

SILICON DUAL TRANSISTORS

Devices listed in descending order of magnitude of h_{FE}.

LOW NOISE—HIGH GAIN AMPLIFIERS

Motorola Type	Case	Polarity	BV_{CEO} V	DC Current Gain Ratio h_{FE1}/h_{FE2}	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2919	654	NPN	60		$4.70	$3.60
2N2920*	654	NPN	60	0.9/1.0	5.25	3.50
2N3810	654	PNP	60	10%	8.60	6.60
2N3811	654	PNP	60		9.45	7.25
2N2639	654	NPN	40		2.60	2.00
2N2642	654	NPN	40	0.9/1.0	3.55	2.75
2N2915	654	NPN	40	10%	7.05	4.70
2N2916	654	NPN	40		7.15	5.50
2N3808	654	PNP	60	0.8/1.0	6.25	4.80
2N3809	654	PNP	60	20%	6.75	5.20
2N2913	654	NPN	40	0.8/1.0	2.70	1.80
2N2914	654	NPN	40	> or	3.00	2.00
2N3806	654	PNP	60	unmatched	5.20	4.00
2N3807	654	PNP	60	20%	5.75	4.40

*JAN and JANTX types available.

SILICON DUAL TRANSISTORS (CONT'D)

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

Motorola Type	Case	Polarity	BV_{CEO} V	DC Current Gain Ratio h_{FE1}/h_{FE2}	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2060*	654	NPN	60		$4.10	$2.75
2N2903A	654	NPN	30	0.9/1.0	7.20	4.80
MD3250A†	654	PNP	40	10%	8.45	6.50
MD3251A†	654	PNP	40		8.45	6.50
2N2480A	654	NPN	40		5.70	3.80
2N2652	654	NPN	60	0.8/1.0	6.10	4.70
2N2903	654	NPN	30	20%	5.85	3.90
2N4938	654	PNP	40		5.70	3.80
MD2218†	654	NPN	30		6.75	4.50
MD2219†	654	NPN	30		7.95	5.30
MD2905†	654	PNP	40	0.8/1.0	7.95	5.30
MD3251†	654	PNP	40	> or	7.50	5.75
2N5793	654	NPN	40	unmatched	5.65	3.25
2N5794	654	NPN	40	20%	6.60	4.40
2N5795	654	PNP	60		5.65	3.25
2N5796	654	PNP	60		6.60	4.40
2N4854*	654	‡	40	.....	6.50	5.00
MD6001†	654	‡	30	.....	7.15	5.50
MD6002†	654	‡	30	.....	7.80	6.00

CORE DRIVERS

MD3467†	654	PNP	40	0.8/1.0 > or	16.50	11.00
MD3725†	654	NPN	40	unmatched	7.15	5.50
MD3762	654	PNP	40	20%	7.80	6.00

HIGH SPEED SWITCHES, HIGH FREQUENCY OSCILLATORS

MD708A†	654	NPN	15	0.9/1.0	$5.59	$4.35
MD918A†	654	NPN	15	10%	8.45	6.50
MD2369A†	654	NPN	15		7.15	5.50
MD708B†	654	NPN	15	0.8/1.0	4.80	3.20
MD918B	654	NPN	15	20%	6.50	5.00
MD708†	654	NPN	15	0.8/1.0 > or	3.38	2.60
MD918†	654	NPN	15	unmatched	5.20	4.00
MD2369†	654	NPN	15	20%	5.85	3.90

*JAN and JANTX types available. †For Case 610, add suffix **F**; prices on request. ‡Complementary pairs; one NPN/one PNP.

NPN-PNP SILICON QUAD TRANSISTORS

Each quad transistor contains four similar transistors that can be used to reduce space requirements. Listed in order of decreasing BV_{CEO} (min.). NPN except as otherwise noted.

PLASTIC DUAL-IN-LINE (CASE 646)

Motorola Type	BV CEO V	h_{FE} at Ic Min.	mA	Maximum t_{on} ns	t_{off} ns	Min. f_T MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MPQ3799*	60	300	0.1	.....	.....	60	$2.95	$2.20
MPQ3467*	40	20	500	40	90	250	3.80	2.85
MPQ3725	40	25	500	35	60	250	3.70	2.75
MPQ2483	40	150	1.0	.....	.....	50	2.70	2.00
MPQ3798*	40	150	0.1	.....	.....	60	2.80	2.10
MPQ2484	40	300	1.0	.....	.....	50	2.80	2.10
MPQ6001†	30	40	150	30‡	225‡	200	3.60	2.50
MPQ6002†	30	100	150	30‡	225‡	200	3.80	2.65
MPQ3303	12	40	300	15	20	400	4.50	3.75

CERAMIC DUAL-IN-LINE (CASE 632)

MHQ2907*	60	100	150	30‡	100‡	350	$ 7.80	$6.00
MHQ3799*	60	300	0.1	.....	.....	325	8.80	6.75
MHQ2906*	40	40	150	30‡	100‡	350	7.15	5.50
MHQ2221	40	40	150	30	225	350	7.15	5.50
MHQ2222	40	100	150	25	250	350	7.80	6.00
MHQ3798*	40	150	0.1	.....	.....	325	8.15	6.25
MHQ6100†	40	75	1.0	.....	.....	175§	8.15	6.25
MHQ3467*	40	20	500	40	120	.....	10.40	8.00
MHQ6001†	30	40	150	.....	.....	400	7.15	5.50
MHQ6002†	30	100	150	.....	.....	400	7.80	6.00
MHQ2483	25	150	1.0	.....	.....	175	9.40	7.25
MHQ2369	15	40	10	9‡	15‡	550	7.45	5.75
MHQ3546*	12	25	50	15‡	25‡	1000	8.45	6.50

FLAT PACK (CASE 607)

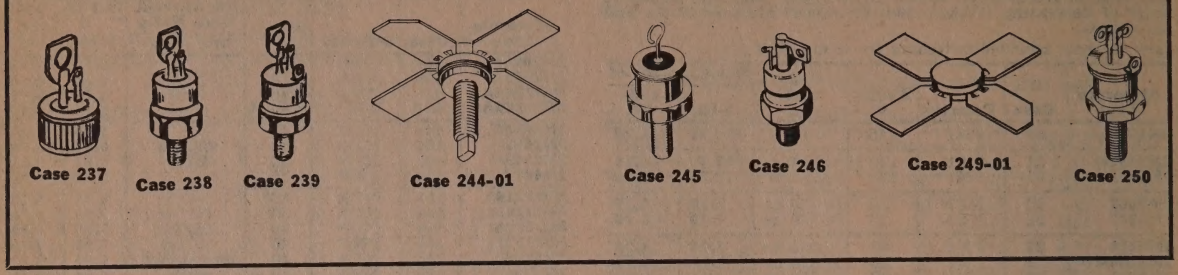
MQ2905A*	60	100	150	45	130	225	$27.75	18.50*
MQ3799*	60	300	0.1	.....	.....	130	27.75	18.50*
MQ930	45	150	1.0	.....	.....	70	24.00	14.00*
2N5146*	40	20	1000	40	120	200	26.25	17.50*
MQ3467*	40	20	500	40	120	200	27.75	18.50*
MQ3725	40	30	500	45	75	300	25.50	19.00*
MQ2219A	40	100	150	60	350	270	27.75	18.50*
MQ2904*	40	40	150	.....	130	225	24.75	16.50*
MQ3251*	40	100	10	.....	.....	350	26.25	17.50*
MQ2218	30	40	150	60	350	220	24.00	16.00*

*PNP; all other types NPN. †Complementary. ‡Typical. §NPN; 130 MHz, PNP. *100–499 Quantity; 500–999 prices on request.

NPN SILICON AVALANCHE TRANSISTOR (CASE 79)

Motorola Type 2N5271—BV_{CER} = 200 V min. Ic = 5.0 A max. Vo = 100 V min. t_d = 5.0 ns max.; t_r = 1.0 ns max.
Net Each, Lots of: 1–99 ..... **$35.25**; 100–999 ..... **$23.50**

SEE ANOTHER PAGE FOR CASE ILLUSTRATIONS



SMALL SIGNAL HERMETIC TRANSISTORS

Listed in order of decreasing BV_{CEO}.

PNP GERMANIUM MESA RF AMPLIFIERS

MEDIUM CURRENT—25 mA–100 mA

Motorola Type	Case	BV_{CEO} V	NF dB	f_t MHz	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N499AJAN	149	35	<6.0	<600	$ 5.70	$ 3.80
2N502AJAN	31	35	<6.0	<600	4.10	2.75
2N705JAN	20	25	<6.0	>600	1.14	.76
2N2273JAN	20	25	<6.0	>600	2.25	1.50
2N1562	23	15	<3.0	<600	14.25	9.50
2N1693	24	15	<3.0	<600	18.00	12.00
2N1141	31	15	<6.0	>600	4.50	3.00

PNP GERMANIUM MESA SWITCHES

Motorola Type	Case	Max. I_C mA	BV_{CEO} V	t_s ns	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N705JAN	22	To 175	To 30	<50	$1.14	$0.76
2N2635	22	To 175	To 30	<50	1.94	1.35
2N2955	20	To 175	To 30	<50	2.48	1.65
2N1204A	31	To 550	To 25	<50	1.65	1.10
2N1499A	TO-9	To 150	To 20	<90	1.90	1.60
2N1499B	TO-9	To 150	To 20	<90	1.80	1.45
2N962*	22	To 150	To 8	<20	1.05	.72
2N967	22	To 150	To 8	<20	1.05	.72

*JAN type available.

NPN-PNP SILICON RF TRANSISTORS

For communications and general amplifier applications. Listed in order of increasing test frequency; then in order of increasing output power rating, within each price break-out tables.

NPN RF POWER AMPLIFIERS

Motorola Type	Case	Test Conditions f at V_{CC} MHz	Test Conditions f at V_{CC} V	Min. P_{out} W	Min. BV $_{CBO}$ V	Net Each, Lots of 1-99	Net Each, Lots of 100-499
MRF8004	TO-39	27	12.5	3.5	60	$2.30	$2.00
2N6366	TO-102	30	12.5	2.5*	36	5.45	4.75
2N3296	TO-102	30	30	3.0*	60	9.20	8.00
2N6367	211-01	30	12.5	9.0*	18	9.75	8.50
2N6370	211-01	30	28	10.0*	65	8.00	7.00
2N5846	TO-102	50	12.5	3.5	36	5.45	4.75
2N2949	TO-107	50	25	3.5	60	6.90	6.00
2N2950	TO-102	50	25	3.5	60	8.60	7.50
2N5847	145A-01	50	12.5	8.0	36	9.70	8.45
2N3375†	TO-60	100	28	7.5	65	7.75	6.75
2N6255	TO-39	175	12.5	3.0	36	2.90	2.50
2N5589	144B-03	175	13.6	3.0	36	4.60	4.00
2N6080	145A-01	175	12.5	4.0	36	5.45	4.75
2N3924	TO-39	175	13.6	4.0	36	3.25	2.80
2N3961	TO-102	175	28	4.0	65	6.70	5.80
2N3925	TO-102	175	13.6	5.0	36	4.75	4.10
2N5641	144B-03	175	28	7.0	65	4.90	4.25
2N3926	TO-60	175	13.6	7.0	36	10.35	9.00
2N5590	145A-01	175	13.6	10	36	6.30	5.50
2N6081	145A-01	175	12.5	15	36	8.60	7.50
2N3948	TO-39	400	13.6	1.0	36	2.30	2.00
2N5090	TO-60	400	28	1.2	55	6.90	6.00
2N5635	144B-03	400	28	2.5	60	4.95	4.30
2N6256	249-01	470	12.5	0.5	36	3.57	3.10
2N5644	145A-01	470	12.5	1.0	36	7.45	6.50
2N5944	244-01	470	12.5	2.0	36	7.50	6.50
2N5645	145A-01	470	12.5	4.0	36	11.00	9.50
MM8009≠	TO-39	1000	28	0.9	55	2.30	2.00

NPN RF POWER AMPLIFIERS (Cont'd)

Motorola Type	Case	Test Conditions f at V_{CC} MHz	Test Conditions f at V_{CC} V	Min. P_{out} W	Min. BV $_{CBO}$ V	Net Each, Lots of 1-99	Net Each, Lots of 100-499
2N2948	TO-3	30	25	15	40	$15.50	$13.50
2N5070	TO-60	30	28	25*	65	13.80	12.00
2N6368	211-01	30	12.5	40*	36	24.75	21.50
2N5941	211-01	30	28	40*	65	16.70	14.50
2N2947	TO-3	50	25	15	60	17.25	15.00
2N5848	145A-01	50	12.5	20	48	13.80	12.00
2N5849	145A-01	50	12.5	40	48	19.50	17.00
2N3950	TO-60	50	28	50	65	26.25	22.80
2N4130	TO-3	70	28	50	80	25.30	22.00
MM1553	145C-01	150	44	75	100	56.50	50.00
2N3927	TO-60	175	13.6	12	36	11.50	10.00
2N3632	TO-60	175	28	13.5	65	11.50	10.00
2N5642	145A-01	175	28	20	65	12.00	10.40
2N6082	145A-01	175	12.5	25	36	11.25	9.80
2N5591	145A-01	175	13.6	25	36	10.35	9.00
2N6083	145A-01	175	12.5	30	36	12.95	11.25
2N5643	145A-01	175	28	40	65	20.70	18.00
2N6084	145A-01	175	12.5	40	36	17.25	15.00
MRF208	145A-01	220	12.5	10	36	10.20	8.85
MRF209	145A-01	220	12.5	25	36	12.35	10.75
2N5636	144B-03	400	28	7.5	60	11.95	10.40
2N5016	TO-60	400	28	15	65	13.50	11.75
2N5637	145A-01	400	28	20	60	20.70	18.00
MRF5177	215	400	28	30	60	20.00	17.50
2N5945	244-01	470	12.5	4.0	36	10.90	9.50
2N5946	244-01	470	12.5	10	36	13.20	11.50
2N5646	145A-01	470	12.5	12	36	20.00	17.50
2N6136	145A-01	470	12.5	25	36	28.75	26.00
MRF618	278-01	520	12.5	15	36	15.25	13.25
2N4012	TO-60	1000	28	2.5§	65	13.50	11.75

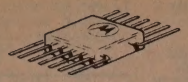
PNP RF POWER AMPLIFIERS

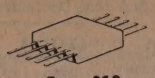
2N6094	211-01	175	12.5	4.0	36	$ 5.75	$ 5.00
2N5161	TO-60	175	28	7.5	60	10.35	9.00
2N6095	211-01	175	12.5	15	36	10.35	9.00
2N6096	211-01	175	12.5	30	36	19.35	16.80
2N5162	TO-60	175	28	30	60	15.50	13.50
2N6097	211-01	175	12.5	40	36	28.00	24.40
						1-99	100-499
MM4019	TO-39	175	28	2.5	60	$2.90	$2.50
2N5160	TO-39	400	28	1.0	60	3.34	2.90

*PEP. †JAN type available. §Tripler. ≠Also UHF and Microwave oscillators.

Case 257

Case 289


Case 607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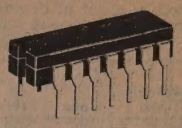
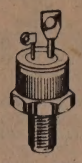

Case 632, 646


Case 263

Case 290

Case 642

Case 654

RF TRANSISTORS

NPN LOW-NOISE SMALL-SIGNAL AMPLIFIERS

Includes devices designed specifically for CATV applications. Listed in order of increasing test frequency; then in order of increasing noise figure.

Motorola Type	Case	Test Conditions f at V_{CE} MHz	V	Max. NF dB	Min. f_T MHz	Net Each, Lots of 1-99	100-999
MM8000	TO-39	200	15	2.7*	700	$0.98	$0.85
MM8001	TO-39	200	15	2.7*	900	1.75	1.50
2N5109	TO-39	200	15	3.0*	1200	1.75	1.55
MRF502	TO-72	200	6	4.0*	800	.58	.50
MRF501	TO-72	200	6	4.5*	600	.52	.45
2N5179‡	TO-72	200	6	4.5	900	.68	.59
2N3287	TO-72	200	10	6.0	350	4.30	3.75*
2N3294	TO-72	200	10	7.0*	250	1.15	1.00
2N5943	TO-39	200	15	8.0	1200	2.30	2.00*
2N3291	TO-72	200	10	8.0	250	1.50	1.30
2N5947	144D-01	200	20	8.5	1100	7.50	6.50*
2N3292	TO-72	200	10	9.0	250	1.40	1.20
2N5031	TO-72	450	6	2.5	1000	3.45	3.00*
2N5032	TO-72	450	6	3.0	1000	2.59	2.25*
2N3839	TO-72	450	6	3.4	1000	3.35	2.90*
MM8006	TO-72	450	6	3.8	1000	2.15	1.85
2N2857†‡	TO-72	450	6	4.5	1000	2.15	1.85
2N6305	TO-72	450	5	4.5	1200	1.45	1.25
MM8007	TO-72	450	6	5.0	1000	1.90	1.65
2N6304	TO-72	450	5	5.5	1400	1.85	1.60

PNP LOW-NOISE SMALL-SIGNAL AMPLIFIERS

2N5829	TO-72	450	10	2.5	1200	$10.35	$9.00
2N4957	TO-72	450	10	3.0	1200	6.90	6.00
2N4958	TO-72	450	10	3.3	1000	5.45	4.75
2N4959	TO-72	450	10	3.8	1000	4.30	3.75

*Typical. †JAN and JANTX types available. ‡Also UHF and microwave oscillators. *100–499 quantity.

NPN UHF AND MICROWAVE OSCILLATORS (TO-107)

Listed in order of increasing test frequency; then in order of increasing oscillator output power.

Motorola Type	Test Conditions f at V_{CE} MHz	V	Minimum P_{out} (Osc) mW	f_T MHz	BV_{CBO} V	Net Each, Lots of 1-99	100-499
MM8011	2000	20	100	1100	35	$ 3.68	$ 3.20
MM8010	2000	20	200	1100	35	8.45	6.50
MM8008	2000	20	300	1100	35	5.05	4.40*
						1-24	25-99
MM1501	1500	20	150	1000	30	$23.40	$20.75
MM1500A	1500	20	250	1500	30	38.30	34.00

*Case TO-72. †Case TO-39. *100–999 quantity.

NPN HIGH-SPEED CURRENT MODE SWITCHES

Motorola Type	Case	Test Conditions I_C at V_{CE} mA	V	Min. f_T MHz	Max. C_{cb} pF	Net Each, Lots of 1-99	100-499
2N3959	TO-18	10	10	1300	2.5†	$ 6.85	$5.95
2N3960*	TO-18	10	10	1600	2.5†	7.95	6.90
2N5842	TO-72	25	4	1700	1.5	8.65	7.50
2N5841	TO-72	25	4	2200	1.5	10.35	9.00
MM4049‡	TO-72	25	5	4000	1.25†	10.05	8.75
2N5583‡	TO-39	100	10	1300	5.0	5.60	4.90
2N5835	TO-72	10	6	2500	6.8	4.20	3.65
2N5836	TO-46	50	6	2000	3.5	4.45	3.85
2N5837	TO-46	100	3	1700	5.0	4.60	4.00

*JAN and JANTX types available. †C_{ob}. ‡PNP; all others NPN.

RF WIDEBAND AMPLIFIER MODULES

In Case 270-01 (not illustrated).

Motorola Type	Max. NF dB	Output Level* dB/mV	Freq. MHz	Min. G_p dB	Maximum IMD dB	Maximum P_D W	Net Each, Lots of 1-24	25-99
MHW559	7.5	47/21	40–300	15	−69	5.0	$47.15	$44.25
MHW560	8.5	44/21		14.5	−62	5.0	39.10	36.75
MHW561	12	50/21		14	−69	6.0	44.50	41.80
MHW562	10	47/21		14	−69	6.0	50.60	47.50

*N-channel.

UHF POWER MODULES

In Case 700-01 (not illustrated).

Motorola Type	Min. P_{out} W	Frequency Range, MHz	Minimum G_p dB	Minimum N %	Net Each, Lots of 1-24	25-99
MHW710-1	13	400–440	19.4	35	$42.50	$40.00
MHW710-2	13	440–470	19.4	35	42.50	40.00

SILICON TRANSISTORS

DARLINGTON AMPLIFIERS (CASE 20)

BV_{CEO} values given are minimum.

Motorola Type	BV $_{CEO}$ V	Max. I_C mA	h_{FE} at I_C Min.	mA	Max. C_{ob} pF	Typ. f_T MHz	Net Ea., Lots 1-99	100-999
2N998	60	500	1600	10	30	200	$3.00	$2.00
2N2723	60	40	2000	10	10	150	5.65	3.25
2N2785	40	200	1200	10	30	150	6.50	5.00

*PNP, Case 34; all other types NPN.

UNIJUNCTION TRANSISTORS—UJT

Motorola Type	Case	Intrinsic Standoff Ratio	Max. I_P μA	Min. I_V mA	Max. P_D mW	Net Ea., Lots 1-99	100-999
MU10	29	0.50–0.85	5.0	1.0	300	$0.40	$0.30
MU20	22	0.56–0.85	2.0	1.0	300	.50	.35
2N2646	22	0.56–0.75	5.0	4.0	300	1.00	.67
2N2647	22	0.68–0.82	2.0	8.0	300	1.90	1.26
2N3980	22	0.68–0.82	2.0	0.01	360	3.40	2.25
2N4851	22	0.56–0.75	2.0	2.0	300	.97	.65
2N4852	22	0.70–0.85	2.0	4.0	300	.97	.65
2N4853	22	0.70–0.85	0.4	6.0	300	2.25	1.50
2N4870	29	0.56–0.75	5.0	2.0	300	.75	.50
2N4871	29	0.70–0.85	5.0	4.0	300	.68	.45
MU4891	29	0.55–0.82	5.0	2.0	300	.90	.60
MU4892	29	0.51–0.69	2.0	2.0	300	1.15	.77
MU4893	29	0.55–0.82	2.0	2.0	300	.96	.64
MU4894	29	0.74–0.86	1.0	2.0	300	1.05	.70
2N4948*	22	0.55–0.82	2.0	2.0	360	.85	.57
2N4949*	22	0.74–0.86	1.0	2.0	360	2.40	1.60
2N5431†	22	0.72–0.80	0.4	2.0	300	3.50	2.35
2N6114‡	22	0.58–0.62	5.0	1.0	300	4.85	3.25
2N6115‡	22	0.58–0.62	15.0	1.0	300	2.05	1.35

*JAN and JANTX types available. †JAN type available. ‡Complementary UJT.

PROGRAMMABLE UNIJUNCTION TRANSISTORS—PUT

I_P and I_V at $R_G = 1$ meg. $V_O = 6.0$ V min. $V_F = 1.5$ V at $I_F = 50$ mA. $t_r = 80$ nsec. $T_J = -50°$ C to $+100°$ C except as otherwise noted.

Motorola Type	Case	Maximum I_P μA	Maximum I_V μA	P_D mW	I_T (pulse) A	Net Ea., Lots 1-99	100-999
MPU131	29	2.0	50	375	2.0	$0.71	$0.47
MPU132	29	0.3	50	375	2.0	.84	.53
MPU133	29	0.15	25	375	2.0	.90	.58
2N6027	29	2.0	50	375	5.0	.79	.53
MPU6027	29	2.0	50	375	5.0	.73	.49
2N6028	29	0.15	25	375	5.0	1.00	.65
MPU6028	29	0.15	25	375	5.0	.93	.60
2N6116*	22	2.0	50	250	2.0	1.35	.90
2N6117*	22	0.3	50	250	2.0	2.16	1.44
2N6118*	22	0.15	25	250	2.0	2.78	1.85

*$T_J = -50°$ C to $+125°$ C.

MOTOROLA Semiconductors

FIELD EFFECT TRANSISTORS

RF AMPLIFIERS AND MIXERS

Listed in order of decreasing specified test frequency; increasing power gain and noise figure.

N-CHANNEL J FETs DEPLETION

Motorola Type	Case	f_T MHz	Minimum G_{ps} dB	Minimum NF dB	Max. C_{rss} pF	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4416	20	400	10	4.0	0.8	$1.05	$0.72
MFE2000	20	400	10	4.0	1.0	.90	.60
MFE2001	20	400	10	4.0	1.0	1.00	.70
2N4223	20	200	10	5.0	2.0	1.05	.75
2N4224	20	200	.....	.....	2.0	1.05	.75
2N3823*	20	100	.....	2.5	2.0	1.10	.80

PLASTIC N-CHANNEL J FETs DEPLETION

2N5486†‡	29	400	10	4.0	1.0	$0.72	$0.48
2N5485†‡	29	400	10	4.0	1.0	.72	.48
2N5484‡	29	100	16	3.0	1.0	.65	.43
2N5668	29	100	16	2.5	3.0	.90	.61
2N5669	29	100	16	2.5	3.0	.84	.56
2N5670	29	100	16	2.5	3.0	.90	.61
MPF102‡	29	100	.....	.....	3.0	.45	.30
MPF108	29	100	.....	3.0	2.5	.97	.65
MPF820	29	100	.....	4.0	3.5	.85	.55

N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT

MFE3005	20	400	10	4.5	0.2	$6.75	$4.50
MFE122†	20	244	.....	.....	0.023§	1.00	.65
MFE121†	20	200	17	5.0	0.023§	1.05	.70
3N140†	20	200	16	4.5	0.03	1.65	1.10
MFE3004	20	200	16	4.5	0.2	1.80	1.20
MFE120†	20	105	17	5.0	0.023§	1.00	.65

PLASTIC N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT

MPF122†	206	244	.....	.....	0.023§	$1.35	$1.13
MPF121†	206	200	17	5.0	0.023§	1.43	1.19
MPF120†	206	105	17	5.0	0.023§	1.28	1.06

*JAN type available. †Dual gate. ‡Also general purpose amplifier. §Typical. #Conversion gain; output frequency = 30 MHz.

CHOPPERS

Listed in order of decreasing $V_{(BR)GSS}$, increasing $r_{ds(on)}$, then in order of increasing C_{rss} and I_{DSS}.

N-CHANNEL J FETs DEPLETION (CASE 22)

Motorola Type	Min. $V_{(BR)GSS}$ V	Maximum $r_{ds(on)}$ Ohms	Maximum C_{rss} pF	Min. I_{DSS} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4856A	−40	25	4.0	50	$1.95	$1.40
2N4856	−40	25	8.0	50	1.85	1.30
2N4391	−40	30	3.5	50	1.80	1.20
2N4091	−40	30	5.0	30	1.55	1.05
2N3970	−40	30	6.0	50	4.20	2.80
2N4857A	−40	40	3.5	20	1.85	1.30
2N4857	−40	40	8.0	20	1.75	1.25
2N4092	−40	50	5.0	15	1.25	.90
2N4392	−40	60	3.5	25	1.40	1.00
2N4858A	−40	60	3.5	8	1.70	1.25
2N3971	−40	60	6.0	25	2.00	1.35
2N4858	−40	60	8.0	8	1.65	1.20
2N4093	−40	80	5.0	8	1.30	1.00
2N4393	−40	100	3.5	5	1.60	1.15
2N3972	−40	100	6.0	5	2.70	1.80
2N4859A	−30	25	4.0	50	1.80	1.30
2N4859	−30	25	8.0	50	1.75	1.25
MFE2006	−30	30	5.0	30	2.70	1.80
2N4860A	−30	40	3.5	20	1.65	1.20
2N4860	−30	40	8.0	20	1.60	1.15
MFE2005	−30	50	5.0	15	1.85	1.25
2N4861A	−30	60	3.5	8	1.45	1.05
2N4861	−30	60	8.0	8	1.40	1.00
MFE2004	−30	80	5.0	8	2.25	1.50
MFE2012	−25	10	20.0	100	6.00	4.00
MFE2011	−25	15	20.0	40	5.25	3.50
MFE2009	−25	20	15.0	50	4.80	3.20
MFE2010	−25	25	20.0	15	4.50	3.00
MFE2008	−25	30	15.0	20	4.20	2.80
MFE2007	−25	40	15.0	8	3.65	2.45
MPF4391#	−30	30	3.5	60	.80	.56
2N5638#	−30	30	4.0	50	.75	.53
2N5653#	−30	50	3.5	40	.70	.50
MPF4392#	−30	60	3.5	25	.70	.50
2N5639#	−30	60	4.0	25	.68	.48
MPF4393#	−30	100	3.5	5	.80	.56
2N5654#	−30	100	3.5	15	.68	.48
2N5640#	−30	100	4.0	5	.73	.53
2N5555*#	−25	150	1.2	15	.90	.65

N-CHANNEL MOS FETs ENHANCEMENT (CASE 20)

MFE3002	±30	100	1.0	10‡	$3.35	$2.25
3N169†§	±25	200	1.3	10‡	6.40	4.25
3N170†§	±25	200	1.3	10‡	5.50	3.65
3N171†§	±25	200	1.3	10‡	4.20	2.80

P-CHANNEL MOS FETs ENHANCEMENT (CASE 20)

3N155A§	±35	300	1.3	0.25‡	$6.30	$4.20
3N156A§	±35	300	1.3	0.25‡	6.30	4.20
3N155§	±35	600	1.3	1.0‡	3.30	2.20
3N156§	±35	600	1.3	1.0‡	3.30	2.20
MFE3003	±30	200	1.0	10‡	3.00	2.00
MFE3020•	−25	500	1.5	10‡	10.20	6.78
MFE3021•	−25	250	1.5	10‡	13.20	9.00

*High speed, $t_{(on)}$ = 10 ns max. †Low $V_{GS(th)}$, high speed. ‡nA max. §Also General Purpose Switch. #Plastic, Case 29; •Case 642.

GENERAL PURPOSE AMPLIFIERS

Listed in order of increasing gate-source breakdown voltage, decreasing zero-gate voltage drain current, and forward transfer admittance.

N-CHANNEL J FETs DEPLETION

Motorola Type	Case	Min. V#	Minimum-Maximum I_{DSS} mA	Minimum-Maximum y_{fs} μmhos	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-4999
2N4222*	20	30	5.0–15	2500–6000	$ 0.95	$0.68	.....
2N4222A*	20	30	5.0–15	2500–6000	1.05	.75	.....
2N5558*	20	30	4.0–10	1500–6500	9.50	7.50	.....
2N4221*	20	30	2.0–6.0	2000–5000	.95	.68	.....
2N4221A*	20	30	2.0–6.0	2000–5000	1.05	.75	.....
2N5557*	20	30	2.0–5.0	1500–6500	10.00	8.00	.....
2N4220*	20	30	0.5–3.0	1000–4000	.90	.65	.....
2N4220A*	20	30	0.5–3.0	1000–4000	1.05	.75	.....
2N5556*	20	30	0.5–2.5	1500–6500	12.00	9.50	.....
2N5364	20	40	9.0–18	2700–6500	3.95	2.65	.....
2N5363	20	40	7.0–14	2500–6000	3.45	2.30	.....
2N5362	20	40	4.0–8.0	2000–5500	3.00	2.00	.....
2N5361	20	40	2.5–5.0	1500–4500	2.65	1.76	.....
2N5360	20	40	1.5–3.0	1400–3200	3.00	2.00	.....
2N3365	22	40	0.8–4.0	400–2000	1.35	.90	.....
2N5359	20	40	0.8–1.6	1200–3600	3.45	2.30	.....
2N5718	20	40	0.8–4.0	500–2000	.80	.53	$0.42
2N5358	20	40	0.5–1.0	1000–3000	3.95	2.65	.....
2N3366	22	40	0.2–1.0	250–1000	1.20	.80	.....
2N5717	20	40	0.2–1.0	400–1600	.75	.50	.40
2N5716	20	40	0.05–0.25	200–1000	.80	.53	.42
2N3367	22	40	0.05–0.25	100–1000	1.80	1.20	.....
3N126†	20	50	3.0–9.0	1200–3600	3.00	2.00	.....
2N3822‡	20	50	2.0–10	3000–6500	1.50	1.15	.....
3N125†	20	50	1.5–4.5	800–2400	3.00	2.00	.....
MFE2095	20	50	1.0–3.0	400–800	2.10	1.40	.....
2N3821‡	20	50	0.5–2.5	1500–4500	1.60	1.30	.....
MFE2094	20	50	0.4–1.4	350–700	2.10	1.40	.....
3N124†	20	50	0.2–2.0	500–2000	3.00	2.00	.....
MFE2093	20	50	0.1–0.7	250–500	2.10	1.40	.....

PLASTIC N-CHANNEL J FETs DEPLETION

MPF111	29	20	0.5/20	500 min.	$0.38	$0.25	$0.23
2N5459	29	25	4.0–16	2000–6000	.55	.37	.....
2N5458	29	25	2.0–9.0	1500–5500	.50	.35	.....
MPF112	29	25	1.0–25	1000–7500	.38	.25	.23
2N5457	29	25	1.0–5.0	1000–5000	.50	.35	.....
MPF256	29	25	6.0–13	6.0 min.	.80	.53	.43
2N3797	22	±30	2.0–6.0	1500–3000	3.45	2.30	.....
MFE3001	20	±30	0.5–6.0	700–3500	2.25	1.50	.....
2N3796	22	±30	0.5–3.0	900–1800	3.45	2.30	.....

N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT

3N128	20	−50	5.0–25	5000–12000	$1.35	$0.90	.....

P-CHANNEL J FETs DEPLETION

2N3909A	20	20	1.0–15	2200–5000	$1.50	$1.00	.....
2N3909	20	20	0.3–15	1000–5000	1.00	.75	.....
2N3330‡	20	25	0.3–15	1500–3000	1.50	1.20	.....
2N3993	20	25	10 min.	6000–12000	2.90	2.05	.....
2N3994A	20	25	2.0 min.	5000–10000	2.65	1.95	.....
2N3994	20	25	2.0 min.	4000–10000	2.60	1.90	.....
MFE4012	20	40	7.0–14	2500–5000	3.20	2.15	.....
MFE4011	20	40	4.0–8.0	2200–4500	2.90	1.95	.....
2N5476	20	40	0.8–2.0	260–650	2.00	1.35	.....
MFE4008	20	40	0.8–1.6	1000–3000	3.20	2.15	.....
MFE4007	20	40	0.5–1.0	900–2700	4.05	2.70	.....
2N5475	20	40	0.4–1.0	200–500	1.80	1.20	.....
2N5474	20	40	0.2–0.5	160–400	2.00	1.35	.....
2N5473	20	40	0.1–0.25	120–300	2.15	1.45	.....
2N5472	20	40	0.05–0.12	90–225	2.33	1.55	.....
2N5471	20	40	0.02–0.06	60–180	2.55	1.70	.....
2N5270	20	60	7.0–14	2500–5000	3.75	2.50	.....
2N5269	20	60	4.0–8.0	2200–4500	3.45	2.30	.....
2N5268	20	60	2.5–5.0	2000–4000	3.30	2.20	.....
2N5267	20	60	1.5–3.0	1500–3500	3.45	2.30	.....
2N5266	20	60	0.8–1.6	1000–3000	3.75	2.50	.....
2N5265	20	60	0.5–1.0	900–2700	4.65	3.10	.....

PLASTIC P-CHANNEL J FETs DEPLETION

2N4360	29	20	3.0–30	2000–8000	$0.63	$0.42	.....
2N4342	29	25	4.0–12	2000–6000	1.12	.75	.....
2N5462	29	40	4.0–16	2000–6000	.90	.60	.....
2N5460	29	40	1.0–5	1000–4000	.90	.60	.....
2N5800	29	40	0.7–2.0	250–700	.98	.65	$0.56
MPF161	29	40	0.5–14	800–6000	.67	.45	.36
2N5799	29	40	0.25–1.0	160–500	.90	.60	.51
2N5798	29	40	0.08–0.4	100–400	.83	.55	.47
2N5797	29	40	0.02–0.1	60–225	.75	.50	.43
2N5465	29	60	4.0–16	2000–6000	1.35	.90	.72
2N5464	29	60	2.0–9.0	1500–5000	1.08	.72	.58
2N5463	29	60	1.0–5.0	1000–4000	1.35	.90	.72

P-CHANNEL MOS FETs ENHANCEMENT

3N157	20	±35	1.0 max.§	1000–4000	$3.30	$2.20	.....
3N158	20	±35	1.0 max.§	1000–4000	3.30	2.20	.....
3N157A	20	±50	0.25 max.§	1000–4000	6.30	4.20	.....
3N158A	20	±50	0.25 max.§	1000–4000	6.30	4.20	.....

PLASTIC P-CHANNEL MOS FETs ENHANCEMENT

2N4066	642	±30	1.0 max.§	1500 min.	$17.00	11.30	.....
2N4067	642	±30	1.0 max.§	2500 min.	22.00	15.00	.....
MFE5000	605	±40	10 max.§	2000–8000	22.50	15.00	.....

*Also General-Purpose Switches. †Tetrode connected; also General-Purpose Switches. ‡JAN type available. §nADB. #$V_{(BR)GSS}$.

FREQUENCY MULTIPLIER DIODES

BV_R at $I_R = 10\ \mu A$; R_S at $V_R = 6.0$ V, f = 50 MHz; C_T at $V_R = 6.0$ V, f = 1.0 MHz.

Motorola Type	Case	Max. P_D W	Min. BV_R V	Typ. R_S Ohms	Min.-Max. C_T pF	Zet Ea., Lots of 1-24	Zet Ea., Lots of 25-99
1N4387	44	20	150	0.4	35 max.	$29.10	$25.30
1N4388	51	10	100	0.25	20 max.	29.10	25.30
1N5149	47	10	80	0.25	5.0–20	23.90	18.40
1N5150	47	14	80	0.25	5.0–20	29.10	25.30
1N5150A	47	21	80	0.25	10.8–13.2	33.00	28.75
1N5153	47	5.5	75	0.5	5.0–7.5	29.10	25.30
1N5153A	47	8.4	75	0.5	5.4–6.6	33.00	28.75
1N5155	46	3.5	35	0.9	1.0–3.0	29.10	25.30
MV1809C	47	9.0	75	0.25	9.6–14.4	33.00	28.75

DUAL EPICAP TUNING DIODE

C_T diode capacitance at $V_R = 3.0$ V, f = 1.0 MHz. C_R capacitance ratio C_3/C_{30}, f = 1.0 MHz. Q at 3.0 V, 100 MHz.

Motorola Type	Case	C_T Min.	C_T Max.	C_R Min.	C_R Max.	Q Min.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MV104	29	37	42	2.5	2.8	100	$0.89	$0.59

EPICAP TUNING DIODES

C_T at $V_R = 4.0$ V, f = 1.0 MHz. Q at $V_R = 4.0$ V, f = 50 MHz.

CASE 51

Tolerance (1N5100 Series) ±10%; add suffix **A** for ±5%.

Max. V_R VDC	Motorola Type	Nom. C_T pF	Min. Q	Motorola Type	Nom. C_T pF	Min. Q	Net Ea., Lots of 1-99	Net Ea., Lots of 100 Up
60	1N5139, A	6.8	350	1N5144, A	22.0	200	Tol.	Tol.
60	1N5140, A	10.0	300	1N5145, A	27.0	200	±10%	±10%
60	1N5141, A	12.0	300	1N5146, A	33.0	200	$4.65	$3.10
60	1N5142, A	15.0	250	1N5147, A	39.0	200	±5%	±5%
60	1N5143, A	18.0	250	1N5148, A	47.0	200	$6.45	$4.30
30	MV830	15.0	30	MV836	47.0	15	1.35	.90
30	MV831	18.0	25	MV837	56.0	15	1.35	.90
30	MV832	22.0	25	MV838	68.0	15	1.35	.90
30	MV833	27.0	25	MV839	82.0	10	1.35	.90
30	MV834	33.0	20	MV840	100.0	10	1.35	.90
30	MV835	39.0	20	.....	.....	.....	1.35	.90

1N5400 Series: C_T = ±10% pF at $V_R = 4.0$ V, f = 1.0 MHz. Available ±5% C_T (suffix **B**), ±2.0% (suffix **C**). Tuning ratio C_2/C_{30}; Q at 4.0 V, 50 MHz. **MV2100 Series:** Plastic package. Tuning ratio and Q same as 1N5400 Series. **MV2300 Series:** Plastic package. Tuning ratio C_2/C_{20}; Q at 4.0 V, 20 MHz.

Case 51 Nom. C_T pF	Case 51 Motorola Type	Case 51 Tuning Ratio pF	Case 51 Min. Q	Case 182 Motorola Type	Case 182 Tuning Ratio pF	Case 182 Min. Q
6.8	1N5461A	2.7–3.1	600	MV2101	2.5–3.2	450
8.2	1N5462A	2.8–3.1	600	MV2102	2.5–3.2	450
10	1N5463A	2.8–3.1	550	MV2103	2.5–3.2	400
12	1N5464A	2.8–3.1	550	MV2104	2.5–3.2	400
15	1N5465A	2.8–3.1	550	MV2105	2.5–3.2	400
18	1N5466A	2.9–3.1	500	MV2106	2.5–3.2	350
20	1N5467A	2.9–3.1	500	.....	.....	.....
22	1N5468A	2.9–3.2	500	MV2107	2.5–3.2	350
27	1N5469A	2.9–3.2	500	MV2108	2.5–3.2	300
33	1N5470A	2.9–3.2	500	MV2109	2.5–3.2	200
39	1N5471A	2.9–3.2	450	MV2110	2.5–3.2	150
47	1N5472A	2.9–3.2	400	MV2111	2.5–3.2	150
56	1N5473A	2.9–3.3	300	MV2112	2.6–3.3	150
68	1N5474A	2.9–3.3	250	MV2113	2.6–3.3	150
82	1N5475A	2.9–3.3	225	MV2114	2.6–3.3	100
100	1N5476A	2.9–3.3	200	MV2115	2.6–3.3	100
120	.....	.....	.....	MV2301	2.3 min.	250
150	.....	.....	.....	MV2302	2.3 min.	250
180	.....	.....	.....	MV2303	2.3 min.	200
200	.....	.....	.....	MV2304	2.3 min.	200
220	.....	.....	.....	MV2305	2.3 min.	150
250	.....	.....	.....	MV2306	2.3 min.	150
270	.....	.....	.....	MV2307	2.3 min.	100
330	.....	.....	.....	MV2308	2.3 min.	100

Motorola Type	Net Each 1-99	Net Each 100-999	Motorola Type	Net Each 1-99	Net Each 100-999
1N5461A–1N5476A	$ 6.75	$4.50	MV2101–MV2115	$0.90	$0.60
1N5461B–1N5476B	8.70	5.80	MV2301–MV2308	1.50	.95
1N5461C–1N5476C	12.00	8.00			

PLASTIC HOT-CARRIER DIODES

Ideal for VHF and UHF mixer and detector applications.

Motorola Type	Case	$V_{(BR)R}$ Min.	Maximum C_T pF	Maximum V_F	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-4999
MBD101	182	4.0	1.0	0.6	$0.89	$0.59	$0.41
MBD102	226	4.0	1.0	0.6	.98	.65	.45
MBD501	182	50	1.0	1.2	.94	.65	.49
MBD502	226	50	1.0	1.2	1.06	.71	.54
MBD701	182	70	1.0	1.2	1.16	.70	.53
MBD702	226	70	1.0	1.2	1.16	.77	.58
MBI101	166	4.0	1.0	0.6	.99	.67	.....

PIN SWITCHING DIODES

L_S at f = 250 MHz. C_C at f = 1.0 MHz.

Motorola Type	Case	$V_{(BR)R}$ Volts Min.	R_S Ohms Min.	Typical L_S nH	Typical C_C pF	Net Ea., Lots 1-99	Net Ea., Lots 100-999*
MPN3401	226	35	0.7	3.0	0.1	$0.52	$0.35
MPN3402	226	35	0.6	3.0	0.1	.52	.35

*Larger quantity prices on request.

NPN-PNP MICRO-T PLASTIC TRANSISTORS (CASE 28)

Micro-T package 0.085" dia. injection-molded plastic package for applications requiring high component mounting density. More detailed information available on request.

GENERAL-PURPOSE AMPLIFIER AND SWITCHING

Motorola Type	Max. V_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C mA	Min. f_T MHz	Typ. t_s at I_C nsec	Typ. t_s at I_C mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MMT75*	20	50	10	.....	140	10	$0.58	$0.49
MMT76	20	50	10	.....	125	10	.49	.39
MMT2222	30	100	150	200	160†	150	1.19	.95
MMCM2222•	30	100	150	200	160†	150	7.50	5.80
MMT2907*	40	100	150	200	150‡	150	1.44	1.15
MMCM2907*•	40	100	150	200	150‡	150	7.65	5.85
MMT3903	40	50	10	250	125	10	1.13	.90
MMT3904	40	100	10	300	125	10	1.25	.90
MMT3905*	40	50	10	200	140	10	1.13	.90
MMT3906*	40	100	10	250	140	10	1.25	1.00

HIGH-SPEED SATURATED SWITCHING

MMT72	10	30	10	400	20#	10	$ 0.61	$ 0.49
MMT73*	3	30	10	400	30#	10	.61	.49
MMT806§	5	50	0.1	1200	1.0	1.0	16.25	13.00
MMT808*§	5	50	0.1	1200	1.0	1.0	18.25	15.00
MMT2369	15	40	10	500	12▲	10	1.38	1.10
MMCM2369•	15	40	10	500	12▲	10	7.40	5.70
MMT3014	20	50	30	350	25†	30	1.90	1.52
MMT3546*	12	30	10	700	20	50	2.25	1.80
MMT3960A§	8	30	10	1600	1.1	20	6.25	5.00
MMT3960§	3	100	10	1600	.....	.....	4.06	3.25

*PNP; all other types NPN. †t_{off}; $t_{on} = 16$ ns. ‡t_{off}; $t_{on} = 20$ nsec. §Non-saturated. #t_{on}; $t_{off} = 30$ nsec. •Case 176. ▲t_{on}; $t_{off} = 18$ nsec.

LOW NOISE AMPLIFIER

f_T at $I_C = 500\ \mu A$.

Motorola Type	Max. V_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C mA	Min. f_T MHz	Max. NF at I_C dB	Max. NF at I_C µA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MMT70	20	150	2.0	.....	1.0#	10	$0.50	$0.40
MMT71*	20	150	2.0	.....	1.5#	100	.54	.43
MMT930	45	150	1.0	60	.....	.....	.94	.75
MMCM930▲	45	150	1.0	60	.....	.....	7.38	5.70
MMT2484	60	250	1.0	60	3.0	10	1.06	.85
MMCM2484▲	60	250	1.0	60	3.0	.....	7.49	5.75
MMT3798*	60	150	0.1	40	3.5	100	1.88	1.50
MMT3799*	60	300	0.1	40	2.5	100	2.19	1.75

RF AMPLIFIER AND OSCILLATOR

MMT74	12	25	3.0	700‡	4.0#	1.5	$ 0.94	$ 0.65
MMT807	5	25	1.0	1200•	2.0#	100	16.25	13.00
MMT809*	5	25	1.0	1200•	2.6#	100	18.25	15.00
MMT918	15	20	3.0	600†	6.0	1.0§	1.25	1.00
MMCM918▲	15	20	3.0	600†	6.0	1.0§	7.18	5.50
MMT2857	15	30	3.0	1000‡	3.8#	1.5§	2.50	2.00
MMT8015	10	25	1.0	1000■	4.0	1.0§	7.50	6.00

*PNP; all other types NPN. †At $I_C = 10$ mA. ‡At $I_C = 4.0$ mA. §mA. #Typical. •At $I_C = 1.0$ mA. ▲Case 176. ■At $I_C = 6$ mA.

N-CHANNEL J FET

Motorola Type	Minimum $V_{(BR)GSS}$ V	Minimum I_{DSS} mA	Typical C_{iss} pF	Typical $Re(y_{is})$ µmhos	Typical NF at f dB	Typical NF at f MHz	Net Each 1-99	Net Each 100-999
MMT3823	−30	5.0	4.0	500	2.0	100	$1.25	$1.00

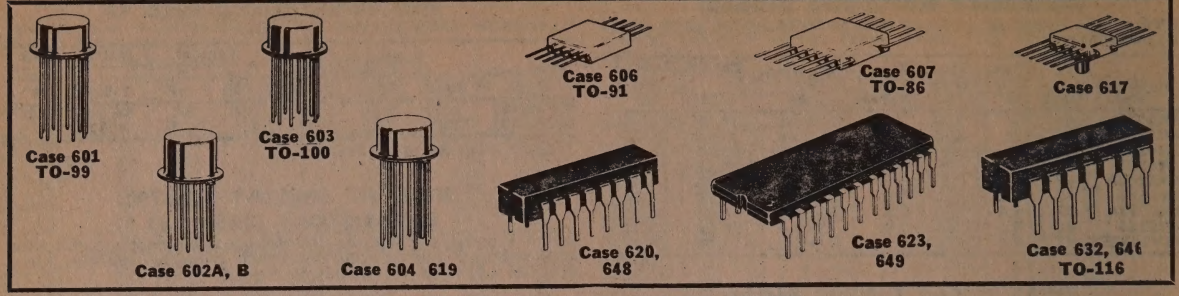
MICRO-T SWITCHING DIODES (CASE 28)

Same construction as above Micro-T transistors.

Motorola Type	Min. $V_{(BR)}$ at $I_{(BR)}$ V	Min. $V_{(BR)}$ at $I_{(BR)}$ µA	V_F at I_F V	V_F at I_F mA	Max. t_{rr} ns	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MMD70*	50	100	0.75/1.2	100	15	$0.35	$0.23
MMD6050*	70	100	0.55/0.7	1.0	5.0	.75	.60
MMD6100†	70	100	0.55/0.7	1.0	5.0	.85	.70
MMD6150‡	70	100	0.55/0.7	1.0	5.0	2.00	1.60
MMD7000§	70	100	0.55/0.7	1.0	5.0	2.13	1.70
MMD7001§	45	10	1.05 max.	300	3.2#	2.00	1.80

*Single diode; Case 166. †Dual common cathode. ‡Dual common anode. §Dual Series. #Typical.

SEE OTHER PAGES FOR CASE ILLUSTRATIONS



MECL™ MC300 AND MC350 SERIES

Compatible with the higher-speed MECL II circuits. $V_{CC} = 0$, $V_{EE} = -5.2$ volts, $T_A = 25°$ C.

MC300 SERIES (−55° TO +125° C)

Function	Typical t_{pd} nsec	Typical P_D mW	Case 602B Motorola Type	Case 602B Net Each, Lots of 1-24	Case 602B Net Each, Lots of 25-99	Case 602B Net Each, Lots of 100-999	Case 606 Motorola Type	Case 606 Net Each, Lots of 1-24	Case 606 Net Each, Lots of 25-99	Case 606 Net Each, Lots of 100-999
5-input OR-NOR gate	7.5	37	MC301G	$13.86	$11.10	$ 9.24	MC301F	$15.18	$12.18	$10.14
R-S flip-flop	11	42	MC302G	16.44	13.20	10.95	MC302F	17.82	14.28	11.88
Half-adder	7.5	63	MC303G	18.72	15.00	12.48	MC303F	20.04	16.08	13.38
Bias driver	.....	18	MC304G	8.70	6.96	5.82	MC304F	10.08	8.04	6.72
5-input gate expander	4.5	.....	MC305G	8.70	6.96	5.82	MC305F	.....	.....	.....
3-input OR-NOR gate	7.5	37	MC306G	12.24	9.78	8.16	MC306F	13.56	10.86	9.06
3-input OR-NOR gate	7.5	15	MC307G	12.24	9.78	8.16	MC307F	13.56	10.86	9.06
AC coupled J-K flip-flop	8.5	87	MC308G	21.24	16.98	14.16	MC308F	22.56	18.06	15.06
Dual 2-input NOR gate	7.0	54	MC309G	15.12	12.12	10.08	MC309F	.....	.....	.....
Dual 2-input NOR gate	7.0	54	MC310G	.....	.....	.....	MC310F	16.44	13.20	10.98
Dual 2-input NOR gate	7.0	41	MC311G	12.60	10.10	8.40	MC311F	16.44	13.20	10.98
Dual 3-input NOR gate w/internal bias	7.5	70	MC312AG	18.72	15.00	12.48	MC312AF	20.04	16.08	13.38
Dual 3-input gate	.....	.....	.....	.....	.....	.....	MC312F	20.04	16.08	13.38
AC coupled J-K flip-flop	12	118	MC314G	25.02	20.04	16.68	MC314F	26.34	21.12	17.58
Line driver	14	180†	MC315G	27.90	22.32	18.60	MC315F	29.22	23.40	19.50
Lamp driver	.....	135	MC316G	12.24	9.78	8.16	MC316F	13.56	10.86	9.06
Level translator—MECL to saturated logic	27.5	63	MC317G	12.24	9.78	8.16	MC317F	.....	.....	.....
Level translator—saturated logic to MECL	17	105	MC318G	12.24	9.78	8.16	MC318F	13.56	10.86	9.06

MC350 SERIES (0° TO +75° C)

5-input OR-NOR gate	7.5	37	MC351G	$ 5.46	$ 4.80	$4.38	MC351F	$ 7.74	$ 6.78	$ 6.18
R-S flip-flop	11	42	MC352AG	5.46	4.80	4.38	MC352AF	7.74	6.78	6.18
Half-adder	7.5	63	MC353G	7.14	6.24	5.70	MC353F	9.54	8.64	7.50
Bias driver	.....	18	MC354G	2.94	2.58	2.34	MC354F	5.34	4.98	4.14
5-input gate expander	4.5	.....	MC355G	3.36	2.94	2.70	MC355F	5.76	5.34	4.50
3-input OR-NOR gate	7.5	37	MC356G	4.26	3.78	3.42	MC356F	6.66	6.18	5.22
3-input OR-NOR gate	7.5	15	MC357G	4.26	3.78	3.42	MC357F	6.66	6.18	5.22
AC coupled J-K flip-flop	8.5	87	MC358AG	11.40	10.02	9.12	MC358AF	13.80	12.42	10.92
Dual 2-input NOR gate	7.0	54	MC359G	4.44	3.90	3.54	MC359F	6.84	6.30	5.34
Dual 2-input NOR gate	7.0	54	MC360G	4.44	3.90	3.54	MC360F	6.84	6.30	5.34
Dual 2-input NOR gate	7.0	41	MC361G	4.44	3.90	3.54	MC361F	6.84	6.30	5.34
Dual 3-input NOR gate w/internal bias	7.5	70	MC362AG	6.00	5.28	4.80	MC362AF	8.22	7.26	6.60
Quad 2-input NOR gate	7.0	125	.....	.....	.....	.....	MC363F*	8.82	7.80	7.08
AC coupled J-K flip-flop	12	118	MC364G	12.90	11.34	10.32	MC364F	14.64	12.84	11.70
Line driver	14	270‡	MC365G	11.04	9.72	8.82	MC365F	13.26	11.71	10.62
Lamp driver	.....	135	MC366G	7.50	6.60	6.00	MC366F	9.72	8.58	7.80
Level translator—MECL to saturated logic	27.5	63	MC367G	6.72	5.94	5.40	MC367F	9.00	7.92	7.20
Level translator—saturated logic to MECL	17	105	MC368G	6.72	5.94	5.40	MC368F	9.00	7.92	7.20
Dual 4-input clock driver/high-speed gate	3.0	250	.....	.....	.....	.....	MC369F*	8.70	7.68	6.96
Dual 2-input clock driver/high-speed gate	3.0	250	MC369G	6.54	5.76	5.22	.....	.....	.....	.....

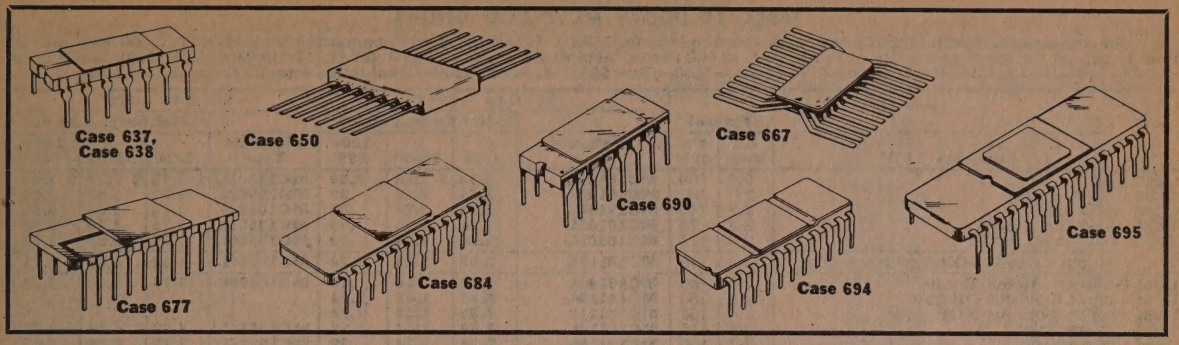
*Case 607. †With 93-ohm load for each side. ‡With 50-ohm load for each side.

MECL II™ MC1200 AND MC1000 SERIES

MC1000 Series 0° C to +75° C; MC1200 Series −55° C to +125° C. $V_{CC} = 0$, $V_{EE} = 5.2$ volts, $T_A = 25°$ C. MC1200 Series also available in ceramic dual in-line package (suffix **L**).

Function		Typical t_{pd} nsec	Typical P_D mW	Case 607 (−55° C to +125° C) Motorola Type	Case 607 Net Each, Lots of 1-24	Case 607 Net Each, Lots of 25-99	Case 607 Net Each, Lots of 100-999	Case 646 (0° to +75° C) Motorola Type	Case 646 Net Each, Lots of 1-24	Case 646 Net Each, Lots of 25-99	Case 646 Net Each, Lots of 100-999
Single 6-input gate	3 OR outputs w/pulldowns 3 NOR outputs w/pulldowns	4.0	115	MC1201F	$2.86	$2.45	$2.04	MC1001P	$1.88	$1.62	$1.37
Dual 4-input gate	2 OR outputs w/pulldowns 2 NOR outputs w/pulldowns	4.0	95	MC1204F	2.86	2.45	2.04	MC1004P	1.71	1.48	1.25
	2 OR outputs w/o pulldowns 2 NOR outputs w/o pulldowns	4.0	45	MC1206F	2.86	2.45	2.04	MC1006P	1.71	1.48	1.25
Triple 3-input gate	3 NOR outputs w/pulldowns	4.0	110	MC1207F	2.86	2.45	2.04	MC1007P	1.88	1.62	1.37
Quad 2-input gate	4 NOR outputs w/pulldowns	4.5	115	MC1210F	2.86	2.45	2.04	MC1010P	1.71	1.48	1.25
	2 NOR outputs w/pulldowns 2 NOR outputs w/o pulldowns	4.5	95	MC1211F	2.86	2.45	2.04	MC1011P	1.71	1.48	1.25
	4 NOR outputs w/o pulldowns	4.5	65	MC1212F	2.86	2.45	2.04	MC1012P	1.71	1.48	1.25
85 MHz AC coupled J-K flip-flop		6.0	125	MC1213F	5.74	4.91	4.09	MC1013P	3.47	2.97	2.47
Dual R-S flip-flop (positive clock)		6.0	140	MC1214F	5.74	4.91	4.09	MC1014P	3.47	2.97	2.47
Dual R-S flip-flop (negative clock)		6.0	140	MC1215F	5.74	4.91	4.09	MC1015P	3.47	2.97	2.47
Dual R-S flip-flop (single rail)		6.0	140	MC1216F	5.74	4.91	4.09	MC1016P	3.47	2.97	2.47
Level translator (saturated logic to MECL)		15	105	MC1217F	7.17	6.14	5.12	MC1017P	4.34	3.72	3.10
Level translator (MECL to saturated logic)		19	55	MC1218F	7.17	6.14	5.12	MC1018P	4.77	4.09	3.41
Full adder		3–8	145	MC1219F	9.31	7.98	6.65	MC1019P	6.06	5.19	4.32
Quad line receiver		4.0	115	MC1220F	2.86	2.45	2.04	MC1020P	1.88	1.62	1.37
Full subtractor		4–11	145	MC1221F	9.31	7.98	6.65	MC1021P	6.06	5.19	4.32
Type "D" flip-flop		8.0	110	MC1222F	7.17	6.14	5.12	MC1022P	4.77	4.09	3.41
Dual 4-input OR-NOR clock driver		2.0	250	MC1223L*	3.85	3.30	2.75	MC1023P	3.08	2.64	2.20
Dual 2-input expandable gate		4.0	95	MC1224L*	2.38	2.04	1.70	MC1024P	1.71	1.48	1.23

*Case 632.



MECL II™, MC1200 AND MC1000 SERIES (CONTINUED)

Function	Typical t_{pd} nsec	Typical P_D mW	Case 607 (−55° C to +125° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 646 (0° C to +75° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Dual 4- and 5-input expander	.....	.....	MC1225F	$2.86	$2.45	$2.04	MC1025P	$1.71	$1.48	$1.23
Dual 3-4-input transmission line/clock driver	2.0	140	MC1226F	4.62	3.96	3.30	MC1026P	3.08	2.64	2.20
120 MHz AC coupled J-K flip-flop	4.0	250	MC1227L*	7.16	6.13	5.11	MC1027P	5.19	4.45	3.71
Dual 4-channel data selector	5.0	170	MC1228L†	10.74	9.20	7.66	MC1028P‡	8.59	7.35	6.12
Quad exclusive-OR gate	5.0	130	MC1230F	4.31	3.69	3.08	MC1030P	2.86	2.45	2.04
Quad exclusive-NOR gate	5.0	130	MC1231L*	3.58	3.06	2.55	MC1031P	2.86	2.45	2.04
100 MHz AC coupled dual J-K flip-flop	4.5	180	MC1232L†	7.16	6.13	5.11	MC1032P‡	5.70	4.89	4.08
Dual R-S flip-flop (single rail, negative clock)	6.0	140	MC1233F	5.74	4.91	4.09	MC1033P	3.47	2.97	2.47
Type D flip-flop	4.0	185	MC1234L*	9.62	8.25	6.87	MC1034P	7.70	6.60	5.50
Triple line receiver	5.0	140	MC1235F	2.86	2.45	2.04	MC1035P	1.88	1.62	1.37
16-bit coincident memory	17	250	.....	.....	.....	.....	MC1036P	19.27	16.50	13.72
16-bit coincident memory without pulldowns	17	250	.....	.....	.....	.....	MC1037P	19.27	16.50	13.72
Quad level translator (MECL to satur. logic)	12	200	MC1239L†	8.36	7.16	5.96	MC1039P‡	6.07	5.20	4.33
Quad latch	8.0	250	MC1240L*	7.16	6.13	5.11	MC1040P	5.70	4.89	4.08
Decoder-Nixie§ driver	.....	178	MC1245L†	7.16	6.13	5.11	MC1045P‡	5.70	4.89	4.08
Quad 2-input AND gate	5.0	130	MC1247F	4.31	3.69	3.08	MC1047P	2.86	2.45	2.04
Quad 2-input NAND gate	5.0	130	MC1248F	4.31	3.69	3.08	MC1048P	2.86	2.45	2.04
Dual full adder	9.0	375	MC1259L†	10.74	9.20	7.66	MC1059P‡	8.59	7.35	6.12
Quad 2-input NOR gate	2.0	320	MC1262L†	3.85	3.30	2.75	MC1062P‡	3.08	2.64	2.20
Quad 2-input NOR gate	2.0	320	MC1263L*	3.85	3.30	2.75	MC1063P	3.08	2.64	2.20
Triple line receiver	2.0	350	MC1266F	4.62	3.96	3.30	MC1066P	3.08	2.64	2.20
Quad MTTL to MECL translator with strobe	5.0	300	MC1267L†	8.36	7.16	5.96	MC1067P‡	6.67	5.72	4.76
Quad MECL to MTTL translator with totem-pole outputs	5.0	340	MC1268L†	8.36	7.16	5.96	MC1068P‡	6.07	5.20	4.33
Quad latch	8.0	200	MC1270L*	7.16	6.13	5.11	MC1070P	5.70	4.89	4.08

*Case 632; not available in Case 607. †Case 648. ‡Case 650. §Registered Burroughs Corp. trademark.

MECL III™ MC1600 SERIES

State-of-the-art, emitter coupled logic family with sub-nsec local propagation delays. Multilayer metalization for optimum performance. Compatible with MECL II and MECL 10,000™ Series. Temperature, 0° C to +75° C. V_{CC} = 0 V; V_{EE} = −5.2 V; T_A = 25° C.

Function	Typical t_{pd} nsec	Typical P_D mW	Case 620 Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 650 Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Voltage controlled oscillator	▲	150	MC1648L■	$ 4.70	$ 3.90	$ 3.10	MC1648F	$ 5.41	$ 4.49	$ 3.57
Dual A/D Comparator	3.5	275	MC1650L	19.80	15.90	14.00	MC1650F	21.80	17.90	16.00
Dual A/D Comparator	2.5	275	MC1651L	19.80	15.90	14.00	MC1650F	21.80	17.90	16.00
Binary counter (high Z)	⁋	750‡	MC1654L	64.80	54.00	43.20	.....	.....	.....	.....
Voltage controlled multivibrator	⁋	125	MC1658L♦	5.20	4.30	3.45	MC1658F	7.20	6.30	5.45
Dual 4-input OR-NOR gate (high Z)	1.1	120	MC1660L	11.25	9.40	7.50	MC1660F	12.75	10.44	8.50
Quad 2-input NOR gate (high Z)	1.1	240	MC1662L	11.25	9.40	7.50	MC1662F	13.35	10.92	8.90
Quad 2-input OR gate (high Z)	1.1	240	MC1664L	11.25	9.40	7.50	MC1664F	13.35	10.92	8.90
Dual clocked R-S flip-flop (high Z)	1.8	220	MC1666L	22.35	18.60	14.90	MC1666F	25.41	20.76	16.94
Dual clocked latch (high Z)	1.8	220	MC1668L	22.35	18.60	14.90	MC1668F	28.41	23.16	18.94
Master-slave type D flip-flop (high Z)	*	220	MC1670L	20.35	16.87	13.50	MC1670F	22.95	18.76	15.30
Triple 2-input exclusive-OR gate (high Z)	1.3	220	MC1672L	14.10	11.75	9.40	MC1672F	15.96	13.05	10.64
Triple 2-input exclusive-NOR gate (high Z)	1.3	220	MC1674L	14.10	11.75	9.40	MC1674F	15.96	13.05	10.64
Bi-quinary counter (high Z)	†	750‡	MC1678L	64.80	54.00	43.20	.....	.....	.....	.....
UHF prescaler type D flip-flop	*	200	MC1690L	26.53	23.34	19.95	MC1690F	30.51	26.84	22.95
Quad line receiver	1.1	220	MC1692L	11.25	9.40	7.50	MC1692F	13.25	11.40	9.50
4-bit shift register (high Z)	⁋	750‡	MC1694L	64.80	54.00	43.20	.....	.....	.....	.....

*Toggle frequency = 350 MHz typ. †Max. operating frequency = 350 MHz typ. ‡Requires heat sink IERC LIC-14A2CB or equivalent. ▲Max. operating frequency = 225 MHz typ. ■Case 632; also available in Case 646. ♦Also available in Case 648. ⁋Max. operating frequency = 325 MHz typ. ⁋Max. operating frequency = 150 MHz typ.

Our Stocks are Complete and up-to-date.

Write for information on new or unlisted items.

SEE PREVIOUS MOTOROLA PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

MECL 10,000™ MC10,000 SERIES

Provides non-saturated switching for very high speed operation. MECL III™ is directly compatible with MECL 10,000 and can be used to extend the speed capability of the MECL 10,000 Series. Temperature −30° C to +85° C (MC10,000/MC10,200); −55° C to +125° C (MC10,500/MC10,600). V_{CC} = 0 V; V_{EE} = −5.2 V; T_A = 25° C. **L** suffix denotes dual inline ceramic package (Case 620).

Function	Typical t_{pd} nsec	Typical P_D mW	−30° C to +85° C Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999	−55° C to +125° C Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
Quad gate	2.0	100	MC10101L	$ 1.34	$ 1.14	$ 0.99	MC10501L	$ 3.75	$ 3.30	$ 3.00
Quad 2-input gate	2.0	100	MC10102L	1.34	1.14	.99	MC10502L	3.75	3.30	3.00
Quad AND gate	2.7	140	MC10104L	1.34	1.14	.99	MC10504L	3.75	3.30	3.00
Triple 2-3-2-input gate	2.0	75	MC10105L	1.34	1.14	.99	MC10505L	3.75	3.30	3.00
Triple 4-3-3-input gate	2.0	75	MC10106L	1.34	1.14	.99	MC10506L	3.75	3.30	3.00
Triple 2-input exclusive-OR/exclusive-NOR	2.5	110	MC10107L	1.69	1.43	1.24	MC10507L	4.69	4.13	3.75
Dual 4-5-input OR-NOR gate	2.0	50	MC10109L	1.34	1.14	.99	MC10509L	3.75	3.30	3.00
Dual 3-input 3-output OR gate	2.4	150	MC10110L	1.69	1.43	1.24	.....	.....	.....	.....
Dual 3-input 3-output NOR gate	2.4	150	MC10111L	1.69	1.43	1.24	.....	.....	.....	.....
Triple line receiver	2.4	145	MC10114L	1.69	1.43	1.24	MC10514L	4.69	4.13	3.75
Quad line receiver	2.0	100	MC10115L	1.34	1.14	.99	MC10515L	3.75	3.30	3.00
Triple line receiver	2.0	75	MC10116L	1.34	1.14	.99	MC10516L	3.75	3.30	3.00
Dual 2-wide 2-3-input OR-AND/OR-AND-INVERT gate	2.3	100	MC10117L	1.69	1.43	1.24	MC10517L	4.69	4.13	3.75
Dual 2-wide 3-input OR-AND gate	2.3	100	MC10118L	1.69	1.43	1.24	MC10518L	4.69	4.13	3.75
4-wide 4-3-3-3-input OR-AND gate	2.3	100	MC10119L	1.69	1.43	1.24	MC10519L	4.69	4.13	3.75
4-wide OR-AND/OR-AND-INVERT gate	2.3	100	MC10121L	1.69	1.43	1.24	MC10521L	4.69	4.13	3.75
MTTL to MECL translator	5.0	340	MC10124L	3.59	3.06	2.66	MC10524L	10.13	8.91	8.10
MECL to MTTL translator	5.0	360	MC10125L	3.59	3.06	2.66	MC10525L	10.13	8.91	8.10
Bus driver	12.0	700	MC10128L	7.02	6.13	5.33	.....	.....	.....	.....
Bus receiver	10.0	725	MC10129L	7.02	6.13	5.33	.....	.....	.....	.....
Dual latch	2.5	160	MC10130L	3.55	3.02	2.63	MC10530L	10.13	8.91	8.10
Dual type D master-slave flip-flop	*	225	MC10131L	4.50	3.83	3.33	MC10531L	12.75	11.22	10.20
Dual multiplexer with latch and common reset	3.0	225	MC10132L	5.20	4.43	3.85	.....	.....	.....	.....
Quad latch	4.0	300	MC10133L	6.40	5.45	4.74	MC10533L	13.88	12.21	11.10
Multiplexer with latch	3.0	225	MC10134L	5.20	4.43	3.85	.....	.....	.....	.....
Dual J-K master-slave flip-flop	†	250	MC10135L	7.20	6.13	5.33	MC10535L	15.63	13.75	12.50
Universal hexadecimal counter	‡	585	MC10136L	15.88	13.52	11.76	MC10536L	34.38	30.25	27.50
Universal decade counter	‡	585	MC10137L	15.88	13.52	11.76	MC10537L	34.38	30.25	27.50
Four-bit universal shift register	§	400	MC10141L	14.32	12.20	10.61	MC10541L	34.38	30.25	27.50
64-bit register file	#	585	MC10145L	36.00	30.00	24.00	.....	.....	.....	.....
12-bit parity generator checker	4.0	320	MC10160L	7.07	6.03	5.34	MC10560L	15.38	13.53	12.30
Binary to 1-of-8 decoder (low)	4.0	315	MC10161L	4.33	3.69	3.21	MC10561L	12.19	10.73	9.75
Binary to 1-of-8 decoder (high)	4.0	315	MC10162L	4.33	3.69	3.21	MC10562L	12.19	10.73	9.75
8-line multiplexer	3.0	300	MC10164L	4.33	3.69	3.21	MC10564L	12.19	10.73	9.75
8-input priority encoder	7.0	580	MC10165L	9.69	8.26	7.18	.....	.....	.....	.....
Binary to 1-of-4 decoder	4.0	340	MC10171L	4.33	3.69	3.21	MC10571L	12.19	10.73	9.75
Quad 2-input multiplexer/latch	2.5	260	MC10173L	6.40	5.45	4.74	.....	.....	.....	.....
Dual 4-to-1 multiplexer	3.5	325	MC10174L	4.33	3.69	3.21	MC10574L	12.19	10.73	9.75
Quint latch	2.5	385	MC10175L	8.15	6.95	6.04	MC10575L	12.19	10.73	9.75
Look-ahead carry block	.....	285	MC10179L	7.07	6.02	5.24	.....	.....	.....	.....
Dual high speed adder/subtractor	4.5	340	MC10180L	18.59	15.84	13.77	MC10580L	40.50	35.64	32.40
4-bit ALU/function generator	.....	575	MC10181L	22.53	20.27	18.02	MC10581L	52.88	46.53	42.30
Dual 3-input 3-output OR gate	1.5	150	MC10210L	3.05	2.60	2.26	.....	.....	.....	.....
Dual 3-input 3-output NOR gate	1.5	150	MC10211L	3.05	2.60	2.26	.....	.....	.....	.....
Triple line receiver	1.8	100	MC10216L	2.59	2.21	1.92	MC10616L	5.63	4.95	4.50
Dual type D master-slave flip-flop	^	285	MC10231L	9.15	7.80	6.78	MC10631L	19.13	16.83	15.30

*f = 160 MHz; †f = 140 MHz. ‡f = 150 MHz. §f = 200 MHz. #Access time = 10. •In dual inline ceramic package (Case 623); also available in dual inline plastic package (Case 649). ^f = 225 MHz. ■In dual inline ceramic package (Case 690).

MHTL™ MC660 SERIES

Feature outstanding noise immunity; provide error-free operation in high noise environments far beyond the tolerance of other IC families. Temperature −30° C to +75° C. V_{CC} = 15 V ± 1.0 VDC; T_A = 25° C. MHTL ceramic dual inline devices are available with specification over the −55° C to +125° C temperature range and/or with hi-rel processing on special order. **L** suffix denotes dual inline ceramic package (Case 620, 632), **P** suffix denotes dual inline plastic package (Case 646, 648).

Function	Typical t_{pd} nsec	Typical P_D mW	Motorola Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Motorola Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999
Expandable dual 4-input gate — Active pullup	110	88/26*	MC660L	$1.68	$1.40	MC660P	$1.21	$1.01
Expandable dual 4-input gate — Passive pullup	125	88/26*	MC661L	1.60	1.33	MC661P	1.15	.96
Expandable dual 4-input line driver	140	180/26*	MC662L	1.89	1.57	MC662P	1.33	1.11
Dual J-K flip-flop	3.0†	200	MC663L	3.36	2.80	MC663P	2.43	2.02
Master-slave R-S flip-flop	3.0†	160	MC664L	2.34	1.95	MC664P	1.87	1.56
Triple level translator	40	83‡	MC665L	2.37	1.97	MC665P	1.60	1.33
Triple level translator	75	105	MC666L	2.37	1.97	MC666P	1.80	1.50
Dual monostable multivibrator	140	240	MC667L	3.16	2.63	MC667P	2.76	2.30
Quad 2-input gate (passive pullup)	125	176/52*	MC668L	1.60	1.33	MC668P	1.15	.96
Dual 4-input expander	.....	.....	MC669L	1.20	1.00	MC669P	1.02	.85
Triple 3-input gate (passive pullup)	125	132/39*	MC670L	1.60	1.33	MC670P	1.15	.96
Triple 3-input gate (active pullup)	110	132/39*	MC671L	1.68	1.40	MC671P	1.21	1.01
Quad 2-input gate (active pullup)	110	176/52*	MC672L	1.68	1.40	MC672P	1.21	1.01
Dual 2-input AND-OR-INVERT gate	110	160/50*	MC673L	1.80	1.50	MC673P	1.32	1.10
Dual 2-input AND-OR-INVERT gate	125	160/50*	MC674L	1.74	1.45	MC674P	1.29	1.07
Dual pulse stretcher	150§	180	MC675L	3.24	2.70	MC675P	2.79	2.32
BCD-to-decimal decoder/driver	.....	380	MC676L	6.30	5.25	MC676P	4.85	4.05
Hex inverter with strobe — (active pullup)	110	246/96*	MC677L	2.23	1.86	MC677P	1.53	1.27
Hex inverter with strobe — w/o output resistors	125	192/96*	MC678L	2.15	1.78	MC678P	1.45	1.21
Dual lamp driver	0.5#	250/30*	MC679L	2.37	1.97	MC679P	2.01	1.67
Hex inverter	110	246/96*	MC680L	1.68	1.40	MC680P	1.21	1.01
Hex inverter with open collector	125	192/96*	MC681L	1.68	1.40	MC681P	1.21	1.01
Quad latch	250	375	MC682L	3.30	2.75	MC682P	2.65	2.20
Quad 2-input exclusive OR	.....	380	MC683L	3.05	2.55	MC683P	2.45	2.05
Decade counter	0.5†	480	MC684L	6.30	5.25	MC684P	4.85	4.05
Binary counter	0.5†	480	MC685L	6.30	5.25	MC685P	4.85	4.05
4-bit shift register	0.5†	480	MC686L	6.30	5.25	MC686P	4.85	4.05
Dual J-K flip-flop	2.5†	375	MC688L	3.40	2.80	MC688P	2.55	2.10
Hex inverter (high voltage)	150	173/55*	MC689L	1.75	1.50	MC689P	1.35	1.15
Hex inverter (active pullup)	150	173/55*	MC690L	1.75	1.50	MC690P	1.35	1.15

*Inputs high/input low. †f_{TOG}, MHz. ‡MDTL (104 MRTL). §Pins 1, 6; 110 ns, pins 5, 6. #μsec.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ MC7400 SERIES

Medium operating speed (15–30 MHz clock rate); good external noise immunity and high fan out. V_{CC} = 5.0 V; T_A = 25° C. Temperature, 0° C to +70° C. **F** suffix denotes flat ceramic package (Case 607, 650, 667), **L** suffix denotes dual inline ceramic package (Case 620, 623, 632), **P** suffix denotes dual inline plastic package (Case 646, 648, 649).

Description	t_{pd} nsec	P_D mW	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Quad 2-input gate	10	40					MC7400F, L	$ 1.80	$ 1.50	$ 1.20
Quad 2-input gate with OC	35	40					MC7401F, L	1.80	1.50	1.20
Quad 2-input NOR gate	10	40					MC7402F, L	1.80	1.50	1.20
Quad 2-input NAND gate with OC	35	40					MC7403L	2.25	1.88	1.50
Hex inverter	13	60					MC7404F, L	2.15	1.80	1.44
Hex inverter	35	60					MC7405L	2.15	1.80	1.44
Hex inverter buffer/driver with OC	15	105					MC7406L	5.33	4.44	3.55
Hex buffer/driver with OC	14	145					MC7407L	5.33	4.44	3.55
Quad 2-input AND gate	15	70					MC7408L	2.10	1.75	1.40
Quad 2-input AND gate with OC	15	70					MC7409L	2.10	1.75	1.40
Triple 3-input NAND gate	10	30					MC7410F, L	1.80	1.50	1.20
Hex inverter buffer/driver with OC	15	105					MC7416L	4.43	3.79	2.95
Hex buffer driver	14	145					MC7417L	4.43	3.79	2.95
Dual 4-input NAND gate	10	20					MC7420F, L	1.80	1.50	1.20
Quad 2-input interface NAND gate	17	40					MC7426L	2.15	1.80	1.44
8-input NAND gate	10	10					MC7430F, L	1.80	1.50	1.20
Quad 2-input positive-NAND buffer	.....	50					MC7437F, L	3.23	2.69	2.15
MC7437 with OC	.....	50					MC7438F, L	3.23	2.69	2.15
Dual 4-input NAND buffer	13	50					MC7440F, L	1.80	1.50	1.20
BCD-to-decimal decoder and high-level driver	.....	105					MC7441AL	9.90	8.25	6.60
BCD-to-decimal decoder	22/23*	140					MC7442L	7.75	6.45	5.15
Excess three-to-decimal decoder	22/23*	140					MC7443L	10.95	9.15	7.30
Excess three gray-to-decimal decoder	22/23*	140					MC7444L	10.95	9.15	7.30
BCD-to-one-of-ten decoder/driver	50 max.	215					MC7445L	14.05	11.70	9.35
BCD-to-seven segment decoder/driver	BI/RBO	265					MC7446L	11.50	9.60	7.70
	5	265					MC7447L	10.60	8.85	7.10
		265					MC74478L	9.00	7.50	6.00
	6	165					MC7449F	8.65	7.20	5.75
Expandable dual 2-wide 2-input AND-OR-INVERT gate	13	28					MC7450F, L	1.80	1.50	1.20
Dual 2-wide 2-input A-O-I gate	13	28					MC7451F, L	1.80	1.50	1.20
Expandable 4-wide 2-input AND-OR-INVERT gate	13	22					MC7453F, L	1.80	1.50	1.20
4-wide 2-input AND-OR-INVERT gate	13	22					MC7454F, L	1.80	1.50	1.20
Dual 4-input expander for AND-OR-INVERT gates	5	8					MC7460F, L	1.80	1.50	1.20
J-K flip-flop	30	65					MC7470L	2.70	2.25	1.80
J-K flip-flop	30	40					MC7472F, L	2.55	2.15	1.70
Dual J-K flip-flop	30	80					MC7473F, L	3.60	3.00	2.40
Quad latch	30	160					MC7475L	6.30	5.25	4.20
Dual type D flip-flop	16	84					MC7479F, L	3.60	3.00	2.40
Gated full adder	10/55†	105					MC7480L	4.85	4.05	3.25
2-bit full adder	15/12†	165					MC17482F, L	7.20	6.00	4.80
2-bit full adder	25/12†	165					MC27482F, L	7.20	6.00	4.80
4-bit binary full adder	35	390					MC7483L	11.35	9.45	7.55
Decade counter	20/bit	160					MC7490F, L	7.00	5.85	4.70
8-bit shift register	25	175					MC7491AL	9.90	8.25	6.60
Divide-by-twelve counter	60	160					MC7492F, L	7.00	5.85	4.70
4-bit binary counter	20/bit	160					MC7493F, L	7.00	5.85	4.70
4-bit shift register	25	175					MC7494L	7.80	6.50	5.20
4-bit shift register	25	250					MC7495F, L	7.90	6.60	5.30
5-bit shift register	25	240					MC7496F, L	9.55	7.95	6.35
Dual 4-bit latch	30	320					MC74100F, L	9.90	8.25	6.60
Dual J-K flip-flop	30	80					MC74107F, L	3.60	3.00	2.40
Monostable multivibrator	.....	90					MC74121F, L	3.60	3.00	2.40
BCD-to-one-of-ten decoder/driver	50 max.	215					MC74145L	8.10	6.75	5.40
16-channel data selector	8.5–35	200					MC74150L	9.65	8.05	6.45
8-channel data selector	8.5–35	145					MC74151L	9.00	7.50	6.00
8-channel data selector/multiplexer	8.5–35	130					MC74152F, L	9.00	7.50	6.00
Dual 4-channel data selector/multiplexer	12–22	180					MC74153F, L	9.00	7.50	6.00
Dual 2-to-4 line decoder/ 1-to-4 line demultiplexer	16/21*	125					MC74155F, L	6.75	5.63	4.50
	16/21*	125					MC74156F	15.08	12.56	10.05
	16/21*	125					MC74156L	6.75	5.63	4.50
Quad 2-input data selector/multiplexer	40	150					MC74157F, L	3.68	3.06	2.45
8-bit parallel out serial shift register	36 MHz§	185					MC74164AF, L	9.75	8.13	6.50
Parallel-load 8-bit shift register	.....	.....					MC74165F, L	11.46	9.55	7.64
35 MHz preset decade counter/latch	.....	.....					MC74176F, L	6.00	5.00	4.00
35 MHz preset decade counter/latch	.....	.....					MC74177F, L	6.00	5.00	4.00
8-bit odd/even generator/checker	15–30	170					MC74180L	14.25	11.88	9.50
4-bit ALU/function generator	12–35	470					MC74181F, L	28.50	23.75	19.00
Look-ahead carry generator	.....	180					MC74182F, L	7.65	6.38	5.10
Presettable up/down counter — decade	14–31	325					MC74192F, L	17.10	14.25	11.40
Presettable up/down counter — 4-bit binary	14–31	325					MC74193F, L	17.10	14.25	11.40
4-bit par-access shift register	.....	.....					MC74195F, L	5.61	4.69	3.75
Binary to 1-of-8 line decoder	14	100					MC74406F, L‡	**	**	**
8-bit parity tree	15–30	150					MC74408F, L‡	4.50	3.75	3.00
Dual decade counter	40 MHz▲	350	MC74452P	10.46	9.55	7.64	MC74452F, L	13.73	11.44	9.15
Dual hexadecimal counter	40 MHz▲	350	MC74453P	10.46	9.55	7.64	MC74453F, L	13.73	11.44	9.15
Dual decade up/down counter	40	600	MC74454P	15.08	12.56	10.05	MC74454L	21.54	17.95	14.36
Dual binary up/down counter	40	600	MC74455P	15.08	12.56	10.05	MC74455F, L	21.54	17.95	14.36
NBCD adder	30	300	MC74456P	9.23	7.69	6.15	MC74456F, L	12.38	10.31	8.25
Bus transfer switch	8/25■	250	MC74460P	4.70	3.95	3.15	MC74460F, L	6.15	5.10	4.10

*2 logic levels/3 logic levels. †Add delay/carry delay. ‡Write mode/sense mode. §$f_{tog.}$ #MC744XX is exact replacement for MC40XX. ▲Frequency. ■D to B/B to Q.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ MC5400 SERIES

Same as MC7400 Series (on preceding page) except: Temperature −55° C to +125° C; available in **F** and **L** suffix packages.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC5400–2F, L	$ 3.10	$ 2.55	$ 2.05
MC5403L	3.10	2.55	2.05
MC5404F, L	3.70	3.10	2.45
MC5405L	3.70	3.10	2.45
MC5406L	9.90	8.25	6.60
MC5407L	9.90	8.25	6.60
MC5408, 9L	3.15	2.60	2.10
MC5410F, L	3.10	2.55	2.05
MC5416, 7L	8.35	6.95	5.55
MC5420F, L	3.10	2.55	2.05
MC5426L	3.70	3.05	2.45
MC5430F, L	3.10	2.55	2.05
MC5437F, 8F, L	7.50	6.25	5.00
MC5440F, L	3.10	2.55	2.05
MC5442L	13.20	11.00	8.80
MC5443, 4L	18.45	15.35	12.30
MC5444L	18.45	15.35	12.30
MC5445L	23.95	19.95	15.95
MC5446L	19.65	16.40	13.10
MC5447L	18.45	15.35	12.30
MC5448L	15.35	12.80	10.25
MC5449F	14.75	12.30	9.85
MC5450–4F, L	$ 3.10	$ 2.55	$ 2.05
MC5460F, L	3.10	2.55	2.05
MC5470L	4.60	3.85	3.05
MC5472F	4.30	3.60	2.85
MC5473F, L	6.15	5.10	4.10
MC5475L	10.75	8.95	7.15
MC5476L	6.75	5.65	4.50
MC5479F	6.15	5.10	4.10
MC5480L	8.30	6.90	5.50
MC15482F, L	12.30	10.25	8.20
MC25482F, L	12.30	10.25	8.20
MC5483L	19.35	16.15	12.90
MC5486F, L	9.53	7.94	6.35
MC5490F, L	12.00	10.00	8.00
MC5491AL	16.90	14.10	11.25
MC5492, 3F, L	12.00	10.00	8.00
MC5494L	11.70	9.75	7.80
MC5495F, L	13.50	11.25	9.00
MC5496F, L	16.30	13.60	10.85
MC54100F	26.85	20.38	17.90
MC54107F, L	6.15	5.10	4.10
MC54121F, L	6.15	5.10	4.10
MC54145L	$13.80	$11.50	$ 9.20
MC54150L	14.50	12.10	9.70
MC54151L	13.50	11.25	9.00
MC54152, 3F, L	13.50	11.25	9.00
MC54155, 6F, L	15.08	12.56	10.05
MC54157F, L	7.35	6.13	4.90
MC54164AF, L	19.95	16.63	13.30
MC54180L	19.15	15.95	12.75
MC54181F, L	42.75	35.63	28.50
MC54182F, L	17.85	14.88	11.90
MC54192F, L	25.65	21.38	17.10
MC54193F, L	25.65	21.38	17.10
MC54195F, L	10.26	8.55	6.84
MC54408F, L	10.75	8.95	7.15
MC54417F	27.00	22.50	18.00
MC54419F	27.00	22.50	18.00
MC54452F, L	23.40	19.50	15.60
MC54453F, L	23.40	19.50	15.60
MC54454, 5F, L	38.78	32.31	25.85
MC54456F, L	22.13	18.44	14.75
MC54460F, L	12.10	10.10	8.05
MC54468F, L	11.16	9.30	7.44

*MC544XX is exact replacement for MC43XX. **Prices on request.

MTTL I™ MC400 SERIES

Transistor-transistor logic designed for general purpose digital applications. V_{CC} = 5.0 V; T_A = 25° C. Temperature 0° C to +75° C. **F** suffix (MC400**F**) denotes flat ceramic package (Case 607, TO-86), **L** suffix (MC400**L**) denotes dual inline ceramic package (Case 632, TO-116), **P** suffix (MC400**P**) denotes dual inline plastic package (Case 646, TO-116). Loading factor, 12 each output, MC400–MC429; 6 each output MC450–MC479 except as otherwise noted.

Function	Typical t_{pd} nsec	Typical P_D mW	Motorola Type	SUFFIX F Net Each, Lots of 1-24	F 25-99	F 100-999	SUFFIX L Net Each, Lots of 1-24	L 25-99	L 100-999	SUFFIX P Net Each, Lots of 1-24	P 25-99	P 100-999
Dual 4-input NAND gate	10	30	MC400	$4.25	$3.40	$2.85	$4.05	$3.25	$2.70	$2.25	$1.90	$1.75
			MC450	3.50	2.80	2.35	3.20	2.60	2.15	1.80	1.55	1.40
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	12	30	MC401	4.25	3.40	2.85	4.40	3.55	2.95	2.25	1.90	1.75
			MC451	3.50	2.80	2.35	3.60	2.90	2.40	2.00	1.70	1.55
8-input NAND gate	12	15	MC402	4.25	3.40	2.85	4.05	3.25	2.70	2.25	1.90	1.75
			MC452	3.50	2.80	2.35	3.20	2.60	2.15	1.80	1.55	1.40
2-wide 3-input AND-OR-INVERT gate with gated complement	11	35	MC403	4.25	3.40	2.85	4.05	3.25	2.70	2.25	1.90	1.75
			MC453	3.50	2.80	2.35	3.20	2.60	2.15	1.80	1.55	1.40
Expandable 3-wide 3-input AND-OR-INVERT gate	12	25	MC404	4.25	3.40	2.85	4.40	3.55	2.95	2.25	1.90	1.75
			MC454	3.50	2.80	2.35	3.60	2.90	2.40	1.80	1.55	1.40
Expandable 2-wide 4-input AND-OR-INVERT gate	12	20	MC405	4.25	3.40	2.85	4.40	3.55	2.95	2.25	1.90	1.75
			MC455	3.50	2.80	2.35	3.60	2.90	2.40	1.80	1.55	1.40
Expandable 8-input NAND gate	18	15	MC406	4.25	3.40	2.85	4.40	3.55	2.95	2.25	1.90	1.75
			MC456	3.50	2.80	2.35	3.60	2.90	2.40	1.80	1.55	1.40
Line driver	25*	60	MC407	4.85	3.90	3.25	4.40	3.55	2.95	2.45	2.10	1.90
			MC457	4.10	3.30	2.75	3.60	2.90	2.40	1.80	1.55	1.40
Quad 2-input NAND gate	10	60	MC408	4.25	3.40	2.85	4.05	3.25	2.70	2.25	1.90	1.70
			MC458	3.50	2.80	2.35	3.20	2.60	2.15	1.80	1.55	1.40
4-wide 3-2-2-3-input expander for AND-OR-INVERT gate	.....	.....	MC409	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
			MC459	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
Dual 4-input expander for AND-OR-INVERT gate	.....	.....	MC410	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
			MC460	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
Dual 4-input expander for NAND gate	.....	.....	MC411	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
			MC461	3.05	2.45	2.05	2.75	2.20	1.85	1.60	1.37	1.25
Triple 3-input NAND gate	10	45	MC412	4.25	3.40	2.85	4.05	3.25	2.70	2.25	1.90	1.75
			MC462	3.50	2.80	2.35	3.20	2.60	2.15	1.80	1.55	1.40
R-S flip-flop	20/15†	30	MC413	4.85	3.90	3.25	4.40	3.55	2.95	2.45	2.10	1.90
			MC463	4.10	3.30	2.75	3.60	2.90	2.40	2.00	1.70	1.55
Gated R-S flip-flop	20/7.5†	30	MC414	4.85	3.90	3.25	4.40	3.55	2.95	2.45	2.10	1.90
			MC464	4.10	3.30	2.75	3.60	2.90	2.40	2.00	1.70	1.55
AND J-K flip-flop	13/25†	40	MC415	5.70	4.55	3.80	6.45	5.15	4.30	3.20	2.70	2.45
			MC465	4.80	3.85	3.20	5.15	4.15	3.45	2.60	2.20	2.00
OR J-K flip-flop	13/25†	50	MC416	5.70	4.55	3.80	6.45	5.15	4.30	3.20	2.70	2.45
			MC466	4.80	3.85	3.20	5.15	4.15	3.45	2.60	2.20	2.00
Triple 2-input buss driver	50/15†	54	MC419	4.85	3.90	3.25	4.85	3.90	3.25	2.45	2.10	1.90
			MC469	4.10	3.30	2.75	4.10	3.30	2.75	2.00	1.70	1.55
Expandable dual 2-wide 2-input	12	40	MC420	4.25	3.40	2.85	4.95	3.95	3.30	2.45	2.10	1.90
			MC470	3.50	2.80	2.35	3.90	3.10	2.60	2.00	1.70	1.55
AC coupled R-S flip-flop	18	30	MC421	5.90	4.75	3.95	5.30	4.25	3.55	2.90	2.45	2.25
			MC471	4.85	3.90	3.25	4.25	3.40	2.85	2.40	2.05	1.85
Dual type D flip-flop	16	84	MC422	8.75	7.00	5.85	8.75	7.00	5.85	4.40	3.75	3.40
			MC472	7.35	5.90	4.90	7.35	5.90	4.90	3.65	3.10	2.80
Dual J-K flip-flop—separate clock	10/12†	110	MC423‡	8.75	7.00	5.85	8.75	7.00	5.85	4.40	3.75	3.40
			MC473§	7.35	5.90	4.90	7.35	5.90	4.90	3.65	3.10	2.80
Dual J-K flip-flop—common clock	10/12†	110	MC424‡	8.75	7.00	5.85	8.75	7.00	5.85	4.40	3.75	3.40
			MC474§	7.35	5.90	4.90	7.35	5.90	4.90	3.65	3.10	2.80
Dual 3-input pulse shaper/ delay AND gate	15	60	MC426‡	4.85	3.90	3.25	4.85	3.90	3.25	2.75	2.30	2.10
			MC476§	4.10	3.30	2.75	4.10	3.30	2.75	2.20	1.85	1.70
OR expandable dual 4-input AND gate	10	38	MC427	4.25	3.40	2.85	4.25	3.40	2.85	2.25	1.90	1.75
			MC477	3.50	2.80	2.35	3.50	2.80	2.35	1.80	1.55	1.40
Dual 2-wide 2-3-input OR expander	.....	15	MC428	.....	.....	.....	.....	.....	.....	1.70	1.44	1.30
			MC478	3.50	2.80	2.35	3.90	3.25	2.60	1.70	1.44	1.30
Hex inverter	10	90	MC429	3.85	3.20	2.55	3.60	3.00	2.40	3.15	2.65	2.10
			MC479	3.10	2.55	2.05	2.85	2.40	1.90	2.40	2.00	1.60

*At 1000 pF load. †$t_{pd}+/t_{pd}-$. ‡Loading factor = 13 each output. §Loading factor = 7 each output.

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MTTL I™ MC500 SERIES

Same as MC400 Series on preceding page, except: Temperature −55° C to +125° C; loading factor, 15 each output MC500–MC529; 7 each output MC550–MC579 except as otherwise noted. Available in **F** suffix (Case 607, TO-86) and **L** suffix (Case 632, TO-116) only.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC500F, L				MC520F, L				MC559F, L			
MC501F, L				MC521F, L				MC560F, L			
MC502F, L				MC522F, L				MC561F, L			
MC503F, L				MC523F, L*				MC562F, L			
MC504F, L				MC524F, L*				MC563F, L			
MC505F, L				MC526F, L*				MC564F, L			
MC506F, L	Consult factory for preferred prices.			MC527F, L	Consult factory for preferred prices.			MC565F, L	Consult factory for preferred prices.		
MC507F, L				MC528F, L				MC566F, L			
MC508F, L				MC529F, L				MC569F, L			
MC509F, L				MC550F, L				MC570F, L			
MC510F, L				MC551F, L				MC571F, L			
MC511F, L				MC552F, L				MC572F, L			
MC512F, L				MC553F, L				MC573F, L†			
MC513F, L				MC554F, L				MC574F, L†			
MC514F, L				MC555F, L				MC576F, L†			
MC515F, L				MC556F, L				MC577F, L			
MC516F, L				MC557F, L				MC578F, L			
MC519F, L				MC558F, L				MC579F, L			

MTTL II™ MC2000 AND MC2100 SERIES

MC2100 Series −55° C to +125° C; fan out = 11 for MC2100–MC2128, 6 for MC2150–MC2178. MC2000 Series 0° C to +75° C; fan out = 9, MC2000–MC2028; 5, MC2050–MC2078. V_{CC} = 5.0 volts, T_A = 25° C. **L** suffix ceramic dual inline pkg. (Case 632, TO-116) available at same price for MC2100 Series (specify MC2100**L**); also available for MC2000 Series; prices on request.

Function	Typical t_{pd} nsec	Typical P_D mW	Case 607 (−55° C to +125° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 607 (0° C to +75° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Expandable 2-wide 4-input AND-OR-INVERT gate	7.0	27	MC2100F, MC2150F	Consult factory for preferred prices.			MC2000F, MC2050F	Consult factory for preferred prices.		
Quad 2-input NAND gate	6.0	88	MC2101F, MC2511F				MC2001F, MC2051F			
4-wide 3-2-2-3-input expander for AND-OR-INVERT gates	.....	28	MC2102F, MC2152F				MC2002F, MC2052F			
Dual 4-input NAND gate	6.0	44	MC2103F, MC2153F				MC2003F, MC2053F			
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	36	MC2104F, MC2154F				MC2004F, MC2054F			
Single 8-input NAND gate	8.0	22	MC2105F, MC2155F				MC2005F, MC2055F			
Dual 4-input expander for AND-OR-INVERT gate	.....	14	MC2106F, MC2156F				MC2006F, MC2056F			
Triple 3-input NAND gate	6.0	66	MC2107F, MC2157F				MC2007F, MC2057F			
Expandable 8-input NAND gate	11	22	MC2111F, MC2161F				MC2011F, MC2061F			
Expandable 3-wide 3-input AND-OR-INVERT gate	6.0	39	MC2112F, MC2162F				MC2012F, MC2062F			
Expandable dual 2-wide 2-input AND-OR-INVERT gate	7.0	58	MC2113F, MC2163F				MC2013F, MC2063F			
Quad 2-input lamp/line driver	20	105	MC2165F				MC2065F			
Hex inverter	6.0	132	MC2116F, MC2166F				MC2016F, MC2066F			
Dual J-K flip-flop—separate clock	f = 70 MHz	110	MC2123F, MC2173F				MC2023F, MC2073F			
Dual J-K flip-flop—common clock	f = 70 MHz	110	MC2124F, MC2174F				MC2024F, MC2074F			
AND J-K flip-flop	f = 50 MHz	50	MC2125F, MC2175F				MC2025F, MC2075F			
OR J-K flip-flop	f = 50 MHz	60	MC2126F, MC2176F				MC2026F, MC2076F			
OR J-K flip-flop	f = 35 MHz	60	MC2128F, MC2178F				MC2028F, MC2078F			

MC2000P Series same as Series MC2000F except plastic dual inline pkg. (Case 646, TO-116).

Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999	Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999	Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999	Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999
MC2000P				MC2013P				MC2052P				MC2066P			
MC2001P				MC2016P				MC2053P				MC2073P			
MC2002P	Consult factory for preferred prices.			MC2023P	Consult factory for preferred prices.			MC2054P	Consult factory for preferred prices.			MC2074P	Consult factory for preferred prices.		
MC2003P				MC2024P				MC2055P				MC2075P			
MC2004P				MC2025P				MC2056P				MC2076P			
MC2005P				MC2026P				MC2057P				MC2078P			
MC2006P				MC2028P				MC2061P							
MC2007P				MC2050P				MC2063P							
MC2011P				MC2051P				MC2065P							

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL III™ MC3000 AND MC3100 SERIES

Designed for general purpose digital applications. High operating speed (30–50 MHz clock rate), good external noise immunity, high fan-out and capability of driving lines up to 600 pF capacitance. Temperature range 0° C to +75° C (MC3000 Series), −55° C to +125° C (MC3100 Series). V_{CC} = 5.0 V; T_A = 25° C. **L** suffix denotes dual inline ceramic pkg. (Case 632, TO-116). **F** flat ceramic pkg. (Case 607, TO-86) and **P** dual inline plastic pkg. (Case 646, TO-116) also available.

Function	Typical t_{pd} ns	Typical P_D mW	Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999	Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100 Up
Quad 2-input NAND gate	6.0	88	MC3000L	$2.00	$1.65	$1.32	MC3100L	$3.40	$2.80	$2.25
Quad 2-input AND gate	9.0	112	MC3001L	2.15	1.80	1.44	MC3101L	3.70	3.05	2.45
Quad 2-input NOR gate	6.0	122	MC3002L	2.00	1.65	1.32	MC3102L	3.40	2.80	2.25
Quad 2-input OR gate	9.0	150	MC3003L	2.15	1.80	1.44	MC3103L	3.70	3.05	2.45
Quad 2-input NAND gate (open collector)	8.0	88	MC3004L	2.00	1.65	1.32	MC3104L	3.40	2.80	2.25
Triple 3-input NAND gate	6.0	66	MC3005L	2.00	1.65	1.32	MC3105L	3.40	2.80	2.25
Triple 3-input AND gate	9.0	84	MC3006L	2.15	1.80	1.44	MC3106L	3.70	3.05	2.45
Triple 3-input NAND gate (open collector)	8.0	66	MC3007L	2.00	1.65	1.32	MC3107L	3.40	2.80	2.25
Hex inverter	6.0	140	MC3008L	2.35	1.95	1.55	MC3108L	4.00	3.30	2.65
Hex inverter	8.0	90	MC3009L	2.35	1.95	1.55	MC3109L	4.00	3.30	2.65
Dual 4-input NAND gate	6.0	44	MC3010L	2.00	1.65	1.32	MC3110L	3.40	2.80	2.25
Dual 4-input AND gate	9.0	56	MC3011L	2.15	1.80	1.44	MC3111L	3.70	3.05	2.45
Dual 4-input NAND gate (open collector)	8.0	44	MC3012L	2.00	1.65	1.32	MC3112L	3.40	2.80	2.25
8-input NAND gate	8.0	22	MC3015L	2.00	1.65	1.32	MC3115L	3.40	2.80	2.25
8-input NAND gate	8.0	22	MC3016L	1.95	1.65	1.32	MC3116L	3.40	2.80	2.25
4-wide 3-2-2-3-input expander for AND-OR-INVERT gates	*	40	MC3018L	2.15	1.80	1.44	MC3118L	3.70	3.05	2.45
Triple 3-input expander for AND-OR gates	*	25	MC3019L	2.15	1.80	1.44	MC3119L	3.70	3.05	2.45
Expandable dual 2-wide 2-input AND-OR-INVERT gate	6.0	62.5	MC3020L	2.00	1.65	1.32	MC3120L	3.40	2.80	2.25
Quad 2-input exclusive-OR gate	14.0	100	MC3021L	3.25	2.70	2.15	MC3121L	5.55	4.60	3.70
Quad 2-input exclusive-NOR gate	14.0	85	MC3022L	3.25	2.70	2.15	MC3122L	5.55	4.60	3.70
Dual 2-wide 2-input AND-OR-INVERT gate	6.0	62.5	MC3023L	2.00	1.65	1.32	MC3123L	3.40	2.80	2.25
Dual 4-input NAND buffer gate	6.0	90	MC3024L	2.15	1.80	1.44	MC3124L	3.70	3.05	2.45
Dual 4-input NAND power gate	6.0	70	MC3025L	2.00	1.65	1.32	MC3125L	3.40	2.80	2.25
Dual 4-input AND power gate	9.0	90	MC3026L	2.15	1.80	1.44	MC3126L	3.70	3.05	2.45
Dual 3-input 3-output AND series terminated line driver	9.0	56	MC3028L	2.15	1.80	1.44	MC3128L	3.70	3.05	2.45
Dual 3-input 3-output NAND series terminated line driver	6.0	44	MC3029L	2.15	1.80	1.44	MC3129L	3.70	3.05	2.45
Dual 4-input expander for AND-OR-INVERT gates	†	15	MC3030L	2.00	1.65	1.32	MC3130L	3.40	2.80	2.25
Expandable 4-wide 2-2-2-3-input AND-OR gate	10.0	87.5	MC3031L	2.00	1.65	1.32	MC3131L	3.40	2.80	2.25
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	40	MC3032L	2.00	1.65	1.32	MC3132L	3.40	2.80	2.25
4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	40	MC3033L	2.00	1.65	1.32	MC3133L	3.40	2.80	2.25
Expandable 2-wide 4-input AND-OR-INVERT gate	7.0	30	MC3034L	2.00	1.65	1.32	MC3134L	3.40	2.80	2.25
AND J-K flip-flop	‡	80	MC3050L	2.85	2.40	1.90	MC3150L	4.90	4.10	3.30
AND input J-K flip-flop	§	50	MC3051L	2.70	2.25	1.80	MC3151L	4.90	4.10	3.30
AND input JJ-KK flip-flop	‡	75	MC3052L	2.85	2.40	1.90	MC3152L	4.90	4.10	3.30
Double edge-triggered master-slave type D flip-flop	.....	100	MC3053L	3.05	2.55	2.05	MC3153L	5.55	4.60	3.70
OR input J-K flip-flop	#	95	MC3054L	2.90	2.40	1.90	MC3154L	5.25	4.35	3.50
AND input J-K flip-flop	#	80	MC3055L	2.70	2.25	1.80	MC3155L	4.60	3.85	3.05
Dual type D flip-flop	#	120	MC3060L	3.95	3.30	2.65	MC3160L	6.75	5.65	4.50
Dual J-K flip-flop	§	100	MC3061L	4.30	3.60	2.90	MC3161L	7.35	6.15	4.90
Dual J-K flip-flop	§	100	MC3062L	4.50	3.75	3.00	MC3162L	7.65	6.40	5.10
Dual J-K flip-flop	#	176	MC3063L	4.50	3.75	3.00	MC6163L	7.65	6.40	5.10
Edge-triggered dual type D flip-flop	16	84	MC74H74AL	5.85	4.88	3.90	MC54H74AL	10.65	8.88	7.10

*Δt_{pd1} = 0.4 ns; Δt_{pd0} = 0.05 ns. †Δt_{pd} = 1.0 ns. ‡f = 40 MHz. §f = 50 MHz. #f = 30 MHz.

MTTL™ COMPLEX FUNCTIONS

Designed for digital applications in the medium to high-speed range. Provide significant reduction in package count and increased logic per function over devices in the basic MTTL and MDTL™ families. Temperature, 0° C to +75° C. V_{CC} = 5.0 V; T_A = 25° C. **F** suffix denotes flat ceramic package, **L** suffix denotes dual inline ceramic package and **P** suffix denotes dual inline plastic package.

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999	Case 646 Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
Dual 4-channel data selector	18*	150	MC4000F, L	$5.40	$4.50	$3.60	MC4000P	$4.05	$3.38	$2.70
BCD-to-binary/binary-to-BCD number converter	<45‡	300	.....	.....	.....	.....	MC4001P■	6.08	5.06	4.05
Dual data distributor	10.5	175	MC4002F, L	7.05	5.85	4.70	MC4002P	3.75	3.13	2.50
16-bit scratch pad memory cell	25†	250	MC4004F, L	7.00	5.80	4.65	.....	.....	.....	.....
16-bit scratch pad memory cell	25†	250	MC4005F, L	6.30	5.25	4.20	.....	.....	.....	.....
Binary to one-of-eight line decoder	14	100	MC4006F, L♦	7.05	5.85	4.70	MC4006P♦	3.75	3.13	2.50
Dual binary to one-of-four line decoder	14	125	MC4007L▲	7.00	5.90	4.70	MC4007P■	4.28	3.56	2.85
8-bit parity tree	15–30	150	MC4008F, L♦	6.30	5.25	4.20	MC4008P♦	5.63	4.69	3.75
Dual 4-bit parity tree	9.5–22	125	MC4010F, L	6.30	5.25	4.20	MC4010P	5.63	4.69	3.75
4-bit shift register	22/bit	180	MC4012F, L	7.95	6.60	5.30	MC4012P	4.50	3.75	3.00
Quad type D flip-flop	16	190	MC4015L▲	7.00	5.85	4.70	MC4015P■	4.05	3.38	2.70
Programmable Modulo-N decade counter	50‡	250	MC4016L▲♦	9.90	8.25	6.60	MC4016P■	6.50	6.00	5.50
MC4016 except hexadecimal counter	50‡	250	MC4017L▲♦	9.90	8.25	6.60	MC4018P■♦	6.50	6.00	5.50
Dual 4-bit comparator—open collector	20	250	.....	.....	.....	.....	MC4021P■	4.90	3.20	2.45
Dual 4-bit comparator	20	250	.....	.....	.....	.....	MC4022P■	4.90	3.20	2.45
4-bit universal counter	16/bit	200	MC4023F, L	7.75	6.45	5.15	MC4023P	5.25	4.38	3.50
Dual voltage controlled multivibrator	§	150	MC4024F	4.80	4.00	3.20	MC4024P	2.60	2.40	2.20
Full adder (12 fan out)	25/13#	90	MC4026F, L	5.40	4.50	3.60	.....	.....	.....	.....
Full adder (6 fan out)	25/13#	90	MC4027F, L	4.35	3.60	2.90	.....	.....	.....	.....
Adder (dependent carry) 12 fan out	25/13#	125	MC4028F, L	6.30	5.25	4.20	.....	.....	.....	.....
Adder (dependent carry) 6 fan out	25/13#	125	MC4029F, L	4.90	4.05	3.25	.....	.....	.....	.....
Adder (independent carry) 12 fan out	25/13#	125	MC4030F, L	6.30	5.25	4.20	.....	.....	.....	.....
Adder (independent carry) 6 fan out	25/13#	125	MC4031F, L	4.90	4.05	3.25	.....	.....	.....	.....
Carry decoder	•	20	MC4032F, L	4.35	3.60	2.90	.....	.....	.....	.....
Quad latch (open collector)	25	140	MC4035F, L	5.95	4.95	3.95	.....	.....	.....	.....
Quad latch	25	150	MC4037F, L	5.95	4.95	3.95	.....	.....	.....	.....
Inverting/non-inverting one-of-eight decoder	<45‡	240	.....	.....	.....	.....	MC4038P■	6.08	5.06	4.05

*Control line; data line = 11 ns. †Write mode; sense mode = 15 ns. ‡Clock to Q3; clock to bus = 35 ns. §f_{max} = 30 MHz. #Add delay/carry delay. •Δt_{pd} = 4.0/decoder. ▲Case 620. ■Case 648. ♦MC74XX is an exact replacement for MC40XX. ‡Address time. **MTTL COMPLEX FUNCTIONS CONTINUED ON FOLLOWING PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ COMPLEX FUNCTIONS (CONTINUED)

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 646 Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Seven segment character generator	Address	240	.....	.....	.....	.....	MC4039P*	$ 6.08	$ 5.06	$ 4.05
Binary to two-of-eight decoder	time	200	.....	.....	.....	.....	MC4040P*	6.08	5.06	4.05
Single-error hamming code detector and generator	<45 ns	240	.....	.....	.....	.....	MC4041P*	6.08	5.06	4.05
Quad predriver	15	120	MC4042F, L	$5.60	$4.00	$3.20	MC4042P	2.10	1.75	1.40
Dual line selector	20	70	MC4043F, L	5.85	4.88	3.90	MC4043P	2.78	2.31	1.85
Phase frequency detector	9.0	85	MC4044F	4.80	4.00	3.20	MC4044P	2.60	2.40	2.20
			MC4044L	3.95	3.30	2.65				
Non-inverting one-of-eight decoder	50†	240	.....	.....	.....	.....	MC4048P*	6.08	5.06	4.05
Counter-latch decoder	40 MHz‡	450	MC4050F, L§#	17.55	14.60	11.70	MC4050P*#	10.60	9.80	9.00
Counter-latch decoder	35 MHz‡	450	MC4051F, L§	17.55	14.60	11.70	MC4051P	13.50	11.25	9.00
Counter-latch decoder	35 MHz‡	450	MC4051P*	13.50	11.25	9.00	.....	.....	.....	.....
Dual majority logic gate	Z=20	75	MC4062F, L	3.38	2.81	2.25	MC4062P	2.25	1.88	1.50
	Z=11									

*Case 648. †Address time. ‡t_{tog}. §Suffix F, Case 650; Suffix L, Case 620. #MC744XX is an exact replacement for MC40XX.

Same as above except temperature range −55° C to +125° C. In flat ceramic package (suffix F) Case 607 or dual inline ceramic (suffix L) Case 632.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC4300F, L	$ 9.20	$7.70	$6.15	MC4316L*†	$18.00	$15.00	$12.00	MC4330F, L	$10.75	$8.95	$7.15
MC4304F, L	11.65	9.70	7.75	MC4318L*†	18.00	15.00	12.00	MC4331F, L	8.25	6.90	5.50
MC4305F, L	9.25	7.70	6.15	MC4324F, L	7.10	5.90	4.75	MC4332F, L	7.35	6.15	4.90
MC4306F, L*	11.95	9.95	8.00	MC4326F, L	9.20	7.70	6.15	MC4335F, L	10.15	8.45	6.75
MC4307L†	10.50	8.75	7.00	MC4327F, L	7.35	6.15	4.90	MC4337F, L	10.15	8.45	6.75
MC4308F, L*	10.75	8.95	7.15	MC4328F, L	10.75	8.95	7.15	MC4344F, L	7.10	5.90	4.75
MC4310F, L	10.75	8.95	7.15	MC4329F, L	8.25	6.90	5.50				

*MC544XX is an exact replacement for MC43XX. †Case 620.

MC8200 Series temperature −55° C to +125° C; MC7200 Series temperature 0° C to +75° C. **F** suffix denotes flat ceramic pkg. (Case 607, 650, 667), **L** suffix denotes dual inline ceramic pkg. (Case 620, 623, 632). Dual inline plastic pkg. available MC7200 Series only.

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Quad exclusive-OR gate	10	225	MC8241F, L	$ 9.30	$ 7.75	$ 6.20	MC7241F, L	$ 6.15	$ 5.13	$ 4.10
Quad exclusive-NOR gate with OC	18	170	MC8242F, L	9.30	7.75	6.20	MC7242F, L	6.15	5.13	4.10
Binary to one-of-eight decoder	30	75	MC8250F	18.00	15.00	12.00	MC7250F	9.75	8.13	6.50
			MC8250L	8.75	7.30	5.85	MC7250L	9.75	8.13	6.50
Binary to one-of-ten decoder	30	80	MC8251F*	18.00	15.00	12.00	MC7251F*	9.75	8.13	6.50
			MC8251L*	8.75	7.30	5.85	MC7251L*	9.75	8.13	6.50
Arithmetic logic element (ALU)	14–24	400	MC8260F, L†	34.28	28.56	22.85	MC7260F, L†	22.85	19.04	15.23
Fast carry extender	8.0–16	95	MC8261F, L	4.26	3.55	2.84	MC7261F, L	2.84	2.36	1.89
2-input 4-bit data selector	13–27	200	MC8266F, L*	9.10	7.60	6.08	MC7266F, L*	6.10	5.05	4.05
2-input 4-bit data selector with OC	13–27	200	MC8267F, L*	9.10	7.60	6.08	MC7267F, L*	6.10	5.05	4.05
4-bit shift register	25	180	MC8270F, L	9.63	8.03	6.42	MC7270F, L	6.42	5.35	4.28
4-bit shift register	25	180	MC8271F, L*	9.63	8.03	6.42	MC7271F, L*	6.42	5.35	4.28
Presettable decade counter	f_{tog} =	130	MC8280F, L	8.10	6.75	5.40	MC7280F, L	5.40	4.50	3.60
Presettable binary counter	25 MHz	130	MC8281F, L	8.10	6.75	5.40	MC7281F, L	5.40	4.50	3.60

*Suffix F, Case 650; suffix L, Case 620. †Suffix F, Case 667; suffix L, Case 623.

MC9300 Series temperature range −55° C to +125° C; MC8300 Series temperature range 0° C to +75° C. **F** suffix denotes flat ceramic package, **L** suffix denotes dual inline ceramic package.

Function	Typical t_{pd} ns	Typical P_D mW	Case 650 (F), Case 620 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Universal 4-bit shift register	25	300	MC9300L	$7.35	$ 6.15	$ 4.90	MC8300L	$ 4.90	$ 4.05	$ 3.25
BCD-to-decimal decoder	22	125	MC9301L	7.35	6.15	4.90	MC8301L	4.90	4.05	3.25
Dual full adder	8.0–28	110	MC9304L	7.35	6.15	4.90	MC8304L	4.90	4.05	3.25
Presettable decade up/down counter	20•	350	MC9306L▲	17.30	14.45	11.55	MC8306L▲	11.50	9.60	7.70
BCD-to-seven-segment decoder	250	165	MC9307F, L	11.82	9.85	7.88	MC8307F, L	7.88	6.56	5.25
Dual 4-bit latch	25*	325	MC9308L▲	15.35	12.80	10.25	MC3808L▲	9.00	7.50	6.00
Dual 4-channel data selector	9.0–24	150	MC9309L	5.85	4.90	3.90	MC8309L	3.70	3.05	2.45
Presettable decade counter	14–35	300	MC9310L	10.95	9.15	7.30	MC8310L	9.00	7.50	6.00
One-of-16 decoder	26†	175	MC9311L▲	15.35	12.80	10.25	MC8311L▲	9.00	7.50	6.00
8-channel data selector	9.0–24	135	MC9312L	5.85	4.90	3.90	MC8312L	3.70	3.05	2.45
Quad latch	12–25	200	MC9314F, L	5.52	4.60	3.68	MC8314F, L	3.68	3.06	2.45
Presettable 4-bit binary counter	14–35	300	MC9316L	20.00	16.65	13.30	MC8316L	7.30	6.05	4.85
8-input priority encoder	10–30	225	MC9318F, L	18.00	15.00	12.00	MC8318F, L	9.00	7.50	6.00
Quad 2-input data selector/multiplexer	40	150	MC9322F, L	7.35	6.13	4.90	MC8322F, L	3.68	3.06	2.45
5-bit comparator	40	220	MC9324F, L	17.70	14.75	11.80	MC8324F, L	8.70	7.25	5.80
Dual 8-bit shift register	‡	250	MC9328L	15.60	13.00	10.40	MC8328L	10.45	8.70	6.95
8-channel data selector/multiplexer	8.5–35	130	MC93152F, L§	13.50	11.25	9.00	MC83152F, L§	9.00	7.50	6.00
Dual 4-chan. data selector/comparator	12–22	180	MC93153F, L	13.50	11.25	9.00	MC83153F, L	9.00	7.50	6.00
Retriggerable monostable multivibrator	25	75	MC9601F, L§	4.20	3.50	2.80	MC8601F, L	2.80	2.30	1.85
Dual retriggerable resettable monostable multivibrator	25	160	MC9602L	8.10	6.75	5.40	MC8602L	5.40	4.50	3.60
64-bit random access memory	<60■	6/bit	.....	.....	.....	.....	MCM4064L#	6.95	5.95	4.95
Binary-to-BCD number converter	<50ɪ	615	.....	.....	.....	.....	MCM4067AL♦			
Binary-to-BCD number converter	<50ɪ	615	.....	.....	.....	.....	MCM4068AL♦		Consult	
Hollerith-to-ASII converter	<40ɪ	615	.....	.....	.....	.....	MCM4069AL♦		factory.	
Hollerith-to-ASII converter	<40ɪ	615	.....	.....	.....	.....	MCM4070AL♦			

*E to Q. †Max. E to Q. ‡C to Q=22 ns (t_{PHL}), 13 ns (t_{PLH}); $\overline{MR}$ to Q=35 ns. §Suffix F, Case 607; suffix L, Case 632. #0°C to +85° C. •Clock to Q. ▲Case 623. ■Access time. ♦Case 690; 0° C to +70° C. ɪAddress time.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ BEAM LEAD INTEGRATED CIRCUITS

Particularly useful in highly reliable systems using hybrid beam lead assembly techniques or standard flat package assembly. MCB Series in flat ceramic package (F suffix, Case 607); MCBC Series in beam lead chip. Temperature −55° C to +125° C. Fan out = 10 each output; V_{CC} = 5.0 V; T_A = 25° C.

Function	Typical t_{pd} ns	Typical P_D mW	Motorola Type	Net Ea., Multiples of 5: 5-24	25-99	100-999	Motorola Type	Net Ea., Multiples of 5: 5-24	25-99	100-999
Quad 2-input NAND gate	10	40	MCBC5400	$3.30	$2.75	$2.20	MCB5400F	$ 5.40	$ 4.50	$ 3.60
Quad 2-input NAND gate (open collector)	35	40	MCBC5401	3.30	2.75	2.20	MCB5401F	5.40	4.50	3.60
Quad 2-input NOR gate	10	48	MCBC5402	3.90	3.25	2.60	MCB5402F	6.00	5.00	4.00
Hex inverter	13	60	MCBC5404	3.90	3.25	2.60	MCB5404F	6.75	5.65	4.50
Hex inverter (open collector)	35	60	MCBC5405	3.90	3.25	2.60	MCB5405F	6.75	5.65	4.50
Triple 3-input NAND gate	10	30	MCBC5410	3.30	2.75	2.20	MCB5410F	5.40	4.50	3.60
Dual 4-input NAND gate	10	20	MCBC5420	2.70	2.25	1.80	MCB5420F	4.60	3.80	3.05
8-input NAND gate	10	10	MCBC5430	2.70	2.25	1.80	MCB5430F	4.60	3.80	3.05
Dual 4-input NAND buffer	13*	50	MCBC5440	3.30	2.75	2.20	MCB5440F	6.25	5.20	4.15
Expandable dual 2-wide 2-input A-O-I gate	13	28	MCBC5450	3.30	2.75	2.20	MCB5450F	5.40	4.50	3.60
Dual 2-wide 2-input AND-OR-INVERT gate	13	28	MCBC5451	3.30	2.75	2.20	MCB5451F	5.40	4.50	3.60
Expandable 4-wide 2-input A-O-I gate	13	22	MCBC5453	3.30	2.75	2.20	MCB5453F	5.40	4.50	3.60
4-wide 2-input AND-OR-INVERT gate	13	22	MCBC5454	3.30	2.75	2.20	MCB5454F	5.40	4.50	3.60
Dual 4-input expander for A-O-I gate	5	8	MCBC5460	3.30	2.75	2.20	MCBC5460F	4.05	3.40	2.70
J-K flip-flop	30	40	MCBC5472	3.90	3.25	2.60	MCB5472F	7.60	6.30	5.05
Dual J-K flip-flop	30	80	MCBC5473	8.10	6.75	5.40	MCB5473F	12.45	10.40	8.30
Dual type D flip-flop	16	84	MCBC5479	8.10	6.75	5.40	MCB5479F	12.45	10.40	8.30
4-input AND driver with NOR strobe	70	20	.....	.....	.....	.....	MCB54140F	22.20	18.50	14.80

*Fan out = 30 each output.

MTTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUITS (CASE 607)

Utilize nichrome resistors, post metallization, monometallic interconnections and very small HF transistor structures to enhance the radiation resistant qualities. Temperature range −55° C to +125° C. V_{CC} = 5.0 V; T_A = 25° C.

Function	Typical t_{pd} nsec	Typical P_D mW	Fan Out	Motorola Type	Net Each, Lots of: 1-24	25-99	100-999
Quad 2-input NAND gate	6.0	80	10	MCE54H00F	$32.25	$26.90	$21.50
Quad 2-input NAND gate (open collector output)	8.0	80	10	MCE54H01F	32.25	26.90	21.50
Hex inverter	6.0	120	10	MCE54H04F	38.70	32.25	25.80
Triple 3-input NAND gate	6.0	60	10	MCE54H10F	32.25	26.90	21.50
Dual 4-input NAND gate	6.0	40	10	MCE54H20F	29.25	24.40	19.50
11-input NAND gate	9.0	20	10	MCE54H31F	30.40	25.30	20.25
Dual 4-input NAND power gate	6.0	80	30	MCE54H40F	30.10	25.05	20.05
Dual 2-wide 2-input AND-OR-INVERT gate	6.0	58	10	MCE54H51F	29.25	24.40	19.50
4-wide 2-input AND-OR-INVERT gate	6.0	40	10	MCE54H54F	28.65	23.90	19.10
Dual 2-wide 2-3-input AND-OR-INVERT gate	6.0	58	10	MCE54H56F	32.25	26.90	21.50
4-wide 3-3-2-3-input AND-OR-INVERT gate	6.0	40	10	MCE54H57F	32.25	26.90	21.50
Dual type D flip-flop	16	140	10	MCE54H79F	43.85	36.55	29.25
Binary to one-of-eight line decoder	.....	130	10	MCE54H146F	46.90	39.05	31.25
Dual J-K flip-flop	8	100	10	MCE54103F	44.25	36.90	29.50

MTTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUIT NETWORKS

Each component isolated by a high resistance (10^{10} ohms) layer or SiO_2. Temperature 0° C to +100° C. F suffix denotes flat ceramic package, Case 607 (TO-86) and Case 606 (TO-91).

Seven-diode array (Case 607)	.....	.....	.....	MCE7003F	$21.00	$17.50	$14.00
Diode-resistor network (Case 606)	.....	20*	.....	MCE7005F	16.50	13.75	11.00
Sixteen-diode array (Case 606)	.....	.....	.....	MCE7006F	24.00	20.00	16.00
Twelve-resistor network (Case 607)	.....	97	.....	MCE7007F	12.00	10.00	8.00

*100-ohm resistor.

MDTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUITS (CASE 607)

Dielectrically isolated MDTL has the same electrical specifications as the MC930 family and may be used interchangeably with it. Temperature −55° C to +125° C. V_{CC} = 5.0 VDC; T_A = 25° C. F suffix denotes flat ceramic pkg. Case 607 (TO-86).

Expandable dual 4-input NAND gate	.....	22	8	MCE930F	$15.00	$12.50	$10.00
Expandable dual 4-input buffer	.....	85	25	MCE932F	16.40	13.65	10.95
Dual 4-input expander	.....	.....	.....	MCE933F	10.95	9.15	7.30
Hex inverter	.....	66	8	MCE936F	16.40	13.65	10.95
Expandable dual 4-input NAND power gate	.....	65	27	MCE944F	16.40	13.65	10.95
Clocked flip-flop	.....	60	10	MCE945F	27.00	22.50	18.00
Quad 2-input NAND gate	.....	44	8	MCE946F	15.00	12.50	10.00
Clocked flip-flop	.....	70	9	MCE948F	27.00	22.50	18.00
Triple 3-input NAND gate	.....	33	8	MCE962F	15.00	12.50	10.00

MDTL™ MC930 AND MC830 SERIES

MC930 Series −55° C to +125° C; MC830 Series 0° C to +75° C. V_{CC} = 5.0 VDC, T_A = 25° C.
NOTE: Most circuits also available in flat pack (0° to +75° C), TO-100 and ceramic dual inline packages.

Function	Typical t_{pd} nsec	Typical P_D mW	Fan Out	Case 607 (−55° to +125° C) Motorola Type	Net Each, Lots of: 1-24	25-99	100-999	Case 646 (0° to +75° C) Motorola Type	Net Each, Lots of: 1-24	25-99	100-999
Expandable dual 4-input NAND gate	30	22	8	MC930F	$ 3.10	$ 2.55	$2.05	MC830P	$0.98	$0.98	$0.48
Expandable dual 4-input buffer	35	85	25	MC932F	3.10	2.55	2.05	MC832P	.98	.98	.48
Dual 4-input expander	.....	.....	.....	MC933F	3.10	2.55	2.05	MC833P	.98	.98	.48
Hex inverter	30	66	8	MC934F	3.40	2.80	2.25	MC834P	1.10	1.10	.53
Hex inverter (w/o output resistors)	30	42	8	MC935F	3.40	2.80	2.25	MC835P	1.10	1.10	.53
Hex inverter	30	66	8	MC936F	3.40	2.80	2.25	MC836P	1.10	1.10	.53
Hex inverter	25	90	7	MC937F	3.40	2.80	2.25	MC837P	1.10	1.10	.53
Decade counter	*	150	8	MC938F	12.40	10.20	8.20	MC838P	3.95	3.95	1.95
Divide-by-sixteen counter	*	150	8	MC939F	12.40	10.20	8.20	MC839P	3.95	3.95	1.95
Hex inverter (w/o input diodes)	30	66	8	MC940F	3.40	2.80	2.25	MC840P	1.10	1.10	.53
Hex inverter w/o output resistors and input diodes	30	42	8	MC941F	3.40	2.80	2.25	MC841P	1.10	1.10	.53
Expandable dual 4-input power gate	30	65	27	MC944F	3.10	2.55	2.05	MC844P	.98	.98	.48
Clocked flip-flop	40	60	12/10†	MC945F	4.05	3.30	2.65	MC845P	1.25	1.25	.62
Quad 2-input NAND gate	30	44	8	MC946F	3.10	2.55	2.05	MC846P	.98	.98	.48
Quad 2-input gate expander	.....	.....	.....	MC947F	3.10	2.55	2.05	MC847P	.98	.98	.48
Clocked flip-flop	40	70	11/9†	MC948F	4.05	3.30	2.65	MC848P	1.25	1.25	.62
Quad 2-input NAND gate (2K pull-up resistor)	25	66	7	MC949F	3.10	2.55	2.05	MC849P	.98	.98	.48

*Counting frequency = 30 MHz (typical). †Fan out for MC830/MC930 Series. **CONTINUED ON FOLLOWING PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MDTL™ MC930 AND MC830 SERIES (CONTINUED)

Function	Typical t_{pd} nsec	Typical P_D mW	Fan Out	Case 607 (−55° to +125° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 646 (0° to +75° C) Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Pulsed triggered binary	15	50	10/8*	MC950F	$12.10	$9.95	$8.00	MC850P	$3.85	$3.85	$1.90
Monostable multivibrator	40	30	10	MC951F	12.10	9.95	8.00	MC851P	3.85	3.85	1.90
Dual J-K flip-flop: Common clock, C_D; separate S_D	40	120	12/10*	MC952F	5.65	4.65	3.75	MC852P	1.80	1.80	.88
Dual J-K flip-flop: Separate clock and S_D; no C_D	40	120	12/10*	MC953F	5.65	4.65	3.75	MC853P	1.80	1.80	.88
Dual J-K flip-flop: Common clock, C_D; separate S_D†	40	140	11/9*	MC955F	5.65	4.65	3.75	MC855P	1.80	1.80	.88
Dual J-K flip-flop: Separate clock and S_D, no C_D†	40	140	11/9*	MC956F	5.65	4.65	3.75	MC856P	1.80	1.80	.88
Quad 2-input buffer	35	170	25	MC957F	3.40	2.80	2.25	MC857P	1.10	1.10	.53
Quad 2-input NAND power gate	30	130	27	MC958F	3.40	2.80	2.25	MC858P	1.10	1.10	.53
Expandable dual 4-input NAND gate (2K pull-up resistor)	25	33	7	MC961F	3.10	2.55	2.05	MC861P	.98	.98	.48
Triple 3-input NAND gate	30	33	8	MC962F	3.10	2.55	2.05	MC862P	.98	.98	.48
Triple 3-input NAND gate (2K pull-up resistor)	25	50	7	MC963F	3.10	2.55	2.05	MC863P	.98	.98	.48
Dual 6-input NAND gate	30	22	8	MC1900F	3.10	2.55	2.05	MC1800P	.98	.98	.48
Dual 5-input NAND gate (2K pull-up res.)	25	33	7	MC1901F	3.10	2.55	2.05	MC1801P	.98	.98	.48
Expandable 8-input NAND gate	30	11	8	MC1902F	3.10	2.55	2.05	MC1802P	.98	.98	.48
Exp. 8-input NAND gate (2K pull-up res.)	25	16.5	7	MC1903F	3.10	2.55	2.05	MC1803P	.98	.98	.48
10-input NAND gate	30	11	8	MC1904F	3.10	2.55	2.05	MC1804P	.98	.98	.48
10-input NAND gate (2K pull-up res.)	25	16.5	7	MC1905F	3.10	2.55	2.05	MC1805P	.98	.98	.48
Quad 2-input AND gate	35	72	8	MC1906F	3.10	2.55	2.05	MC1806P	.98	.98	.48
Quad 2-input AND gate (2K pull-up res.)	30	85	7	MC1907F	3.10	2.55	2.05	MC1807P	.98	.98	.48
Quad 2-input OR gate	35	97	8	MC1908F	3.10	2.55	2.05	MC1808P	.98	.98	.48
Quad 2-input OR gate (2K pull-up res.)	30	115	7	MC1909F	3.10	2.55	2.05	MC1809P	.98	.98	.48
Quad 2-input NOR gate	30	60	8	MC1910F	3.10	2.55	2.05	MC1810P	.98	.98	.48
Quad 2-input NOR gate (2K pull-up res.)	25	72	7	MC1911F	3.10	2.55	2.05	MC1811P	.98	.98	.48
Quad 2-input-exclusive OR gate	40	120	8	MC1912F	5.60	4.60	3.70	MC1812P	1.25	1.25	.62
Quad latch	35	220	7	MC1913L§	11.50	9.45	7.60	MC1813P‡	3.65	3.65	1.80
Quad latch	35	220	7	MC1914F	11.15	9.20	7.40	MC1814P	3.65	3.65	1.80
Quad 2-input NAND gate without output resistor	30	32	8	MC1918F	3.10	2.55	2.05	MC1818P	.98	.98	.48
High voltage hex inverter	40	42	7	.....	.....	.....	.....	MC1820P	1.75	1.75	.85

*Fan out for MC830/MC930 Series. †2K pull-up resistor. ‡Case 648. §Case 620.

MEDIUM POWER MRTL™ MC900, MC800 AND MC700 SERIES

MC900 Series −55° C to +125° C; MC800 Series 0° C to +100° C (MC800P Series 0° C to +75° C); MC700 Series +15° C to +55° C. V_{CC} = 3.0 V ±10% for MC900 Series and MC800G Series; 3.6 V ±10% for MC800P Series and MC700 Series. T_A = 25° C. Fan out given is with MRTL (MC800/MC900 Series); with mW MRTL (MC700 Series). **G** suffix denotes metal can (Case 601, TO-99); **P** suffix denotes dual inline plastic pkg. (Case 646, TO-116). Other package types available on request.

Function	t_{pd} ns	MC900 and MC800 Series Fan Out	MC900 and MC800 Series Typ. P_D mW	Type MC900 Series (−55° C to +125° C) Motorola Type	Net Ea., Lots 1-999	1000-4999	Type MC800 Series (0° C to +100° C) Motorola Type	Net Ea., Lots 1-999	1000-4999	Type MC700 Series (+15° C to +55° C) Fan Out	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	1000-4999
Buffer	20	25	16/45#	MC900G	$1.78	$1.31	MC800G	$1.42	$1.05	80	25/50#	MC700G	$1.24	$0.92
Counter adapter	22	5	55	MC901G	2.09	1.55	MC801G	1.67	1.24	16	80	MC701G	1.50	1.11
R-S flip-flop	14	4	22	MC902G	1.78	1.31	MC802G	1.42	1.05	13	32	MC702G	1.24	.92
3-input NOR gate	12	5	19/5.0#	MC903G	1.78	1.31	MC803G	1.42	1.05	16	28/7.5#	MC703G	1.24	.92
Half adder	14	5	45	MC904G	1.91	1.41	MC804G	1.53	1.13	16	65	MC704G	1.38	1.02
Half-shift register	22	4	53	MC905G	2.09	1.55	MC805G	1.67	1.24	13	75	MC705G	1.50	1.11
Same w/o inverter	22	4	36	MC906G	2.09	1.55	MC806G	1.67	1.24	13	52	MC706G	1.50	1.11
4-input NOR gate	12	5	19/5.0#	MC907G	1.78	1.31	MC807G	1.42	1.05	16	30/7.5#	MC707G	1.24	.92
Dual 2-in. NOR gate	12	5	38/10#	MC914G	1.78	1.31	MC814G	1.42	1.05	16	50/15#	MC714G	1.24	.92
Dual 3-in. NOR gate	12	5	38/10#	MC915G†	1.91	1.41	MC815G†	1.53	1.13	16	55/15#	MC715G†	1.38	1.02
J-K flip-flop	30	3	62/54§	MC916G	2.65	1.96	MC816G	2.12	1.57	10	91/79§	MC723G	1.89	1.40
Quad 2-in. NOR gate	12	5	100/30#	.....	.....	.....	MC824P*	1.08	.81	16	100/30#	MC724P*	1.08	.81
Dual 4-in. NOR gate	12	5	60/15#	.....	.....	.....	MC825P	1.08	.81	16	60/15#	MC725P	1.08	.81
J-K flip-flop	35	5	130/65§	MC926G†	3.10	2.30	MC826G†	2.48	1.84	16	100/86§	MC726G†	2.21	1.64
Quad inverter	12	5	76/20#	MC927G†	1.78	1.31	MC827G†	1.42	1.05	16	87/30#	MC727G†	1.24	.92
5-input NOR gate	12	5	19/5.0#	MC929G	1.78	1.31	MC829G†	1.42	1.05	16	33/7.5#	MC729G	1.24	.92
Quad exclus. OR gate	12	5	28	.....	.....	.....	MC871P	1.80	1.35	16	28	MC771P	1.80	1.35
J-K flip-flop	35	5	130/65§	MC974G	3.10	2.30	MC874G	2.48	1.84	16	100/86§	MC774G	2.21	1.64
Dual half-adder	20	5	120	.....	.....	.....	MC875P	1.35	1.00	16	120	MC775P	1.35	1.00
Binary up counter	....	3	180	.....	.....	.....	MC877P	3.40	2.50	10	180	MC777P	3.40	2.50
1 J-K flip-flop, 1 expander, 2 buffers	.....	.....	141/124‡	.....	.....	.....	MC879P	1.90	1.40	.....	141/124‡	MC779P	1.90	1.40
Decade up counter	....	3	250	.....	.....	.....	MC880P	3.40	2.50	10	250	MC780P	3.40	2.50
Dual half-shift reg.	22	4	140	.....	.....	.....	MC883P	1.55	1.14	13	140	MC783P	1.55	1.14
Same w/o inverter	22	14	100	.....	.....	.....	MC884P	1.46	1.08	13	100	MC784P	1.46	1.08
Quad 2-in. expander	12	.....	20/#	.....	.....	.....	MC885P*	1.09	.81	.....	20/#	MC785P*	1.09	.81
Dual 4-in. expander	12	.....	20/#	.....	.....	.....	MC886P	1.09	.81	.....	20/#	MC786P	1.09	.81
1 J-K flip-flop, 1 inverter, 2 buffers	.....	.....	138/132‡	.....	.....	.....	MC887P	1.90	1.40	.....	138/132‡	MC787P	1.90	1.40
Dual 3-input buffer, non-inverting	24	25	145/56#	.....	.....	.....	MC888P	1.35	1.00	80	145/56#	MC788P	1.35	1.00
Hex inverter	12	5	130/15#	.....	.....	.....	MC889P*	1.08	.81	16	130/15#	MC789P*	1.08	.81
Dual J-K flip-flop	35	3	**	.....	.....	.....	MC890P	2.00	1.50	10	182/158§	MC790P	2.00	1.50
Dual J-K flip-flop	40	5	††	.....	.....	.....	MC891P	2.25	1.65	16	190/160§	MC791P	2.25	1.65
Triple 3-in. NOR gate	12	5	82/24#	.....	.....	.....	MC892P	1.09	.81	16	82/24#	MC792P	1.09	.81
Ser-Par shift reg.	55	5	225	.....	.....	.....	MC894P	3.40	2.50	16	225	MC794P	3.40	2.50
Dual full adder	60	5	225	.....	.....	.....	MC896P	3.40	2.50	16	225	MC796P	3.40	2.50
Dual full subtractor	60	5	225	.....	.....	.....	MC897P	3.40	2.50	16	225	MC797P	3.40	2.50
Dual buffer	15	25	32/90#	MC999G†	2.16	1.60	MC899G†	1.73	1.28	80	50/90#	MC799P	1.08	.81

*A suffix types available; have insured capability to drive at least one MTTL load or two MDTL loads. †Case 603. ‡Only clock input high on flip-flop; other element inputs high/inputs low. §Only clock input high/input low. #Input high/input low. **182/159; ††190/160 only clock inputs high/inputs low. **MEDIUM POWER MRTL™ MC800 AND MC700 SERIES CONTINUED ON FOLLOWING PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MEDIUM POWER MRTL™ MC800 AND MC700 SERIES (CONTINUED)

Function	t_{pd} ns	Type MC800 Series—Case 646 (0° C to +75° C) Fan Out	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	Net Ea., Lots 1000-4999	Type MC700 Series—Case 646 (+15° C to +55° C) Fan Out	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	Net Ea., Lots 1000-4999
Dual 4-channel selector	25	5	100	MC9801P*	$2.45	$1.80	16	100	MC9701P*	$2.45	$1.80
Dual J-K flip-flop	35	3	182/158†	MC9802P	2.15	1.60	10	182/158†	MC9702P	2.00	1.50
4-bit parallel full adder	125	2	265	MC9804P	3.40	2.50	6	265	MC9704P*	3.40	2.50
Dual 4-channel distributor	25	5	150	MC9807P	2.45	1.80	16	150	MC9707P	2.45	1.80
Quad Schmitt trigger	30	5	95	MC9809P	2.45	1.80	5	95	MC9709P	2.45	1.80
Quad 2-input AND gate	28	5	100	MC9813P	1.40	1.05	5	100	MC9713P	1.40	1.05
Quad 2-input NAND gate	14‡	5	155	MC9814P	1.55	1.15	5	145	MC9714P	1.55	1.15
Quad 2-input OR gate	14‡	5	28/100§	MC9815P	1.28	.95	5	28/100§	MC9715P	1.28	.95
Hex expander	12	.....	13/—§	MC9819P#	1.09	.81	.....	13/—§	MC9719P#	1.09	.81

*Case 648. †Only clock inputs high/inputs low. ‡Operating frequency, MHz. §Inputs high/inputs low. #A suffix types available; have insured capability to drive at least one MTTL™ load or two MDTL™ loads.

LOW POWER mW MRTL™ MC908, MC808 AND MC708 SERIES (CASE 601)

MC908 Series −55° C to +125° C; MC808 Series 0° C to +75° C; MC708 Series +15° C to +55° C. P_D ratings at inputs high/inputs low except as otherwise noted. MC708 Series can be mixed with devices from the medium-power MC700 Series which has loading factors normalized for compatibility. V_{CC}=3.0 volts ±10% for MC908 Series; 3.6 volts ±10% for MC808 and MC708 Series. T_A=25° C. Plastic packaged devices are available in the MC708/MC808 Series only. Ceramic flat packages also available on request.

Function	Typ. t_{pd} ns	Fan Out	Type MC908 Series (−55° C to +125° C) Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	Net Ea., Lots 1000-4999	MC808, MC708 Typ. P_D mW	Type MC808 Series (0° C to +75° C) Motorola Type	Net Ea., Lots 1-999	Net Ea., Lots 1000-4999	Type MC708 Series (+15° C to +55° C) Motorola Type	Net Ea., Lots 1-999	Net Ea., Lots 1000-4999
Half adder	60	4	14/8.5	MC908G	$2.09	$1.55	19/12.5	MC808G	$1.67	$1.24	MC708G	$1.50	$1.11
2-input buffer	57	30	5.5/16	MC909G	1.78	1.31	7.0/23	MC809G	1.42	1.05	MC709G	1.24	.92
Dual 2-input NOR gate	27	4	8.0/1.0	MC910G	1.78	1.31	10/2.5	MC810G	1.42	1.05	MC710G	1.24	.92
4-input OR-NOR gate	60	4	6.0/3.5	MC911G	1.78	1.31	8.0/5.5	MC811G	1.42	1.05	MC711G	1.24	.92
Half adder	66	4	11.5/5.5	MC912G	2.09	1.55	15.5/10.5	MC812G	1.67	1.24	MC712G	1.50	1.11
Type D flip-flop	75	3	17.5/13*	MC913G	2.65	1.96	24/17.5*	MC813G	2.12	1.57	MC713G	1.89	1.40
Quad 2-input NOR gate	27	4	.....	.....	.....	.....	20/5.0	MC817P†	1.08	.81	MC717P†	1.08	.81
Dual 3-input NOR gate	27	4	9.5/1.0	MC918G§	1.91	1.41	12/2.5	MC818G§	1.53	1.13	MC718G§	1.38	1.02
								MC818P†	1.00	.75	MC718P†	1.00	.75
Dual 4-input NOR gate	27	4	.....	.....	.....	.....	13/2.5	MC819P†	1.08	.81	MC719P†	1.08	.81
J-K flip-flop	50	2	15.5/10‡	MC920G	2.65	1.96	20.5/14.5‡	MC820G	2.12	1.57	MC720G	1.89	1.40
Dual 2-input gate expander	27	....	3.0/–	MC921G	1.78	1.31	3.0/–	MC821G	1.42	1.05	MC721G	1.24	.92
J-K flip-flop	70	4	17.5/13‡	MC922G§	3.10	2.30	24/20‡	MC822G§	2.48	1.84	MC722G§	2.21	1.64
								MC822P†	1.30	.95	MC722P†	1.30	.95
5-input NOR gate	27	4	6.5/0.5	MC928G	1.78	1.31	7.5/1.0	MC828G	1.42	1.05	MC728G	1.24	.92
Dual exclusive-OR-NOR gate	....	4	.....	.....	.....	.....	25	MC864P†	1.80	1.34	MC764P†	1.70	1.25
Quad latch	50	9	.....	.....	.....	.....	110	MC867AP*	3.26	2.42	MC767AP#	3.26	2.42
Dual J-K flip-flop	50	2	.....	.....	.....	.....	41/29‡	MC876P†	2.00	1.50	MC776P†	2.00	1.50
Dual type D flip-flop	60	3	.....	.....	.....	.....	48/35*	MC878P†	1.90	1.40	MC778P†	1.90	1.40
Dual buffer	57	30	11/32	MC981G	2.16	1.60	14/46	MC881G	1.73	1.28	MC781G	1.54	1.14
J-K flip-flop	80	2	15/13‡	MC982G	3.10	2.30	23/21‡	MC882G	2.48	1.84	MC782G	2.21	1.64
Triple 3-input NOR gate	27	4	.....	.....	.....	.....	18/3.5	MC893P†	1.09	.81	MC793P†	1.09	.81
Dual 2-input buffer	57	30	.....	.....	.....	.....	14/46	MC898P†	1.21	.90	MC798P†	1.21	.90
Hex inverter	27	4	.....	.....	.....	.....	7.0/3.0	MC9818P†	1.09	.81	MC9718P†	1.09	.81
Hex expander	12	....	.....	.....	.....	.....	30/–	MC9820P†	1.09	.81	MC9720P†	1.09	.81
Quad 2-input expander	27	....	.....	.....	.....	.....	20/–	MC9821P†	1.09	.81	MC9721P†	1.09	.81
Dual J-K flip-flop	75	4	.....	.....	.....	.....	24/–‡	MC9822P†	2.25	1.65	MC9722P†	2.25	1.65
Quad 2-input AND gate	50	4	.....	.....	.....	.....	12•	MC9823P†	1.40	1.05	MC9723P†	1.40	1.05
Quad 2-input NAND gate	50	4	.....	.....	.....	.....	20/5.0	MC9824P†	1.55	1.15	MC9724P†	1.55	1.15
Quad 2-input OR gate	50	4	.....	.....	.....	.....	–/7.0	MC9825P†	1.28	.95	MC9725P†	1.28	.95

*Direct set and direct clear low. All other inputs high/all inputs low. †Case 646. ‡Only clock input high/all inputs low. §Case 603. #Case 648. A suffix devices have insured capability to drive at least one MTTL load or two MDTL loads. •One input high/one input low

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SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MC2200 SERIES METAL GATE LOW-THRESHOLD P-CHANNEL MOS

Function	Temperature	Case	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Terminal transmitter	0° C to +75° C	684	MC2257L	13.50	11.25	9.00
Terminal receiver	0° C to +75° C	695	MC2259L	20.20	13.45	10.75

*Mask Charge: 10 piece min. for all devices requiring mask charges; charges on request. †Or Case 695. ‡Reg. IBM trademark.

McMOS™ MC1400 SERIES COMPLEMENTARY MOS

Output logic excursion is independent of fan out; diode protection on all inputs. Temperature −40° C to +85° C. V_{DD} = 16 VDC. **L** suffix denotes dual inline ceramic pkg. (Case 620); **P** suffix denotes dual inline plastic pkg. (Case 648). Power dissipation value given is quiescent, typ./pkg. The following devices also available in chip form.

Function	t_{pd} ns	P_D nW	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Dual 3-input NOR gate inverter	25	50	MC14000CL*	$ 0.66	$0.55	$0.46	MC14000CP†	$0.51	$0.42	$0.35
Quad 2-input NOR gate	25	50	MC14001CL*	.66	.55	.46	MC14001CP†	.51	.42	.35
Dual 4-input NOR gate	25	50	MC14002CL*	.66	.55	.46	MC14002CP†	.51	.42	.35
18-bit static shift register	80	200	MC14006CL*	3.77	3.12	2.60	MC14006CP†	2.90	2.40	2.00
Dual pair and inverter	15	50	MC14007CL*	.66	.55	.46	MC14007CP†	.51	.42	.35
4-bit full adder	170	1000	MC14008CL	3.94	3.26	2.72	MC14008CP	3.03	2.51	2.09
Quad 2-input NAND gate	25	50	MC14011CL*	.66	.55	.46	MC14011CP†	.51	.42	.35
Dual 4-input NAND gate	25	50	MC14012CL*	.66	.55	.46	MC14012CP†	.51	.42	.35
Dual type D flip-flop	80	200	MC14013CL*	1.38	1.14	.95	MC14013CP†	1.06	.88	.73
Dual 4-bit static shift register	125	10 μW	MC14015CL	4.11	3.40	2.83	MC14015CP	3.16	2.62	2.18
Quad analog switch/multiplexer	7	200	MC14016CL*	1.38	1.14	.95	MC14016CP†	1.06	.88	.73
Decade counter/divider	200	10 mW	MC14017CL	4.11	3.40	2.83	MC14017CP	3.16	2.62	2.18
8-bit static shift register	100	3000	MC14021CL	4.11	3.40	2.83	MC14021CP	3.16	2.62	2.18
Triple 3-input NAND gate	25	50	MC14023CL*	.66	.55	.46	MC14023CP†	.51	.42	.35
Triple 3-input NOR gate	25	50	MC14025CL*	.66	.55	.46	MC14025CP†	.51	.42	.35
Dual J-K flip-flop	75	200	MC14027CL	2.07	1.72	1.43	MC14027CP	1.60	1.32	1.10
BCD-to-decimal decoder/binary-to-octal decoder	57	75	MC14028CL	3.39	2.81	2.34	MC14028CP	2.61	2.16	1.80
Triple serial adder (positive)	90	1000	MC14032CL	4.11	3.40	2.83	MC14032CP	3.16	2.26	2.18
8-bit static bus register	175	5000	MC14034CL‡	10.88	9.00	7.50	.....	.....	.....	.....
Triple serial adder (negative)	90	1000	MC14038CL	4.11	3.40	2.83	MC14038CP	3.16	2.62	2.18
12-bit binary counter	85	7500	MC14040CL	4.34	3.59	2.99	MC14040CP	3.23	2.76	2.30
Triple gate—dual 4-input NAND gate 2-input NOR-OR gate or 8-input AND-NAND gate	25	50	MC14501CL	.66	.55	.46	MC14501CP	.51	.42	.35
Strobed hex inverter/buffer	20	50	MC14502CL	2.54	2.11	1.76	MC14502CP	1.96	1.62	1.35
Dual expandable A-O-I gate	80	100	MC14506CL	1.17	.97	.81	MC14506CP	.90	.74	.62
Quad exclusive-OR gate	35	50	MC14507CL	1.53	1.26	1.05	MC14507CP	1.17	.97	.81
Dual 4-bit latch	75	1000	MC14508CL‡	8.48	7.02	5.85	.....	.....	.....	.....
BCD up-down counter	100	1000	MC14510CL	4.84	4.01	3.34	MC14510CP	3.73	3.08	2.57

*Case 632. †Case 646. ‡Case 684.

Case 620, **L** suffix; Case 648, **P** suffix.

Function	t_{pd} ns	P_D nW	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
BCD-to-seven segment latch/decoder/driver	250	100	MC14511CL	$ 5.09	$ 4.21	$ 3.51	MC14511CP	$3.91	$3.24	$2.70
8-channel data selector	75	500	MC14512CL	3.39	2.81	2.34	MC14512CP	2.61	2.16	1.80
4-bit latch/4-to-16 line decoder (high)	300	200	MC14514CL*	8.48	7.02	5.85	.....	.....	.....	.....
4-bit latch/4-to-16 line decoder (low)	300	200	MC14515CL*	8.48	7.02	5.85	.....	.....	.....	.....
Binary up-down counter	40	1000	MC14516CL	4.20	3.48	2.90	MC14516CP	3.23	2.68	2.23
Dual 64-bit static shift register	180	1000	MC14517CL	15.31	12.67	10.56	.....	.....	.....	.....
Dual BCD up counter	100	4000	MC14518CL	4.84	4.01	3.34	MC14518CP	3.73	3.08	2.57
4-bit AND-OR selector (quad 2-channel data selector or quad exclusive-NOR gate	85	100	MC14519CL	1.79	1.48	1.23	MC14519CP	1.38	1.14	.95
Dual binary up counter	100	4000	MC14520CL	4.84	4.01	3.34	MC14520CP	3.73	3.08	2.57
Programmable divide-by-N 4-bit counter (BCD)	100	1000	MC14522CL	4.56	3.78	3.15	.....	.....	.....	.....
Programmable divide-by-N 4-bit counter (binary)	100	1000	MC14526CL	4.56	3.78	3.15	.....	.....	.....	.....
BCD rate multiplier	70	1000	MC14527CL	4.56	3.78	3.15	MC14527CP	3.51	2.90	2.42
Dual retriggerable/resettable monostable multivibrator	80	50	MC14528CL	2.96	2.45	2.04	MC14528CP	2.28	1.88	1.57
Dual 4-channel analog data selector	.....	250	MC14529CL	3.94	3.26	2.72	MC14529CP	3.03	2.51	2.09
Dual 5-input majority logic gate	180	100	MC14530CL	2.05	1.70	1.42	MC14530CP	1.58	1.31	1.09
12-bit parity tree	140	100	MC14531CL	4.11	3.40	2.83	MC14531CP	3.16	2.62	2.18
4-bit arithmetic logic unit	225	100	MC14581CL*	9.42	7.80	6.50	.....	.....	.....	.....
Look-ahead carry block	115	100	MC14582CL	3.58	2.96	2.47	MC14582CP	2.75	2.28	1.90
64-bit read/write RAM	150‡	300	MCM14505CL†	13.10	10.84	9.04	.....	.....	.....	.....
1024-bit read only memory	180	31	MCM14524CL	**	**	**	.....	.....	.....	.....

*Case 684. †Case 632. ‡Read cycle/200 write cycle. **Consult factory.

MC1400 SERIES COMPLEMENTARY MOS CONT'D ON NEXT PAGE.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

McMOS™ MC1400 SERIES

COMPLEMENTARY MOS (CONTINUED)

Same as above, and MC14000 Series on preceding page, except: V_{DD} = 18 VDC; temperature −55° C to +125° C. Quiescent power dissipation, typ./pkg. and Case 620 except as otherwise noted.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC14000AL*	$0.76	$0.63	$0.53	MC14028AL	$ 3.91	$ 3.24	$2.70	MC14517AL♦	$17.66	$14.62	$12.18
MC14001AL*	.76	.63	.53	MC14032AL	4.74	3.92	3.27	MC14518AL	5.59	4.63	3.85
MC14002AL*	.76	.63	.53	MC14034AL▲	12.55	10.39	8.66	MC14519AL	2.07	1.71	1.42
MC14006AL†	4.35	3.60	3.00	MC14038AL	4.74	3.92	3.27	MC14520AL	5.59	4.63	3.85
MC14007AL*	.76	.63	.53	MC14040AL	5.00	4.14	3.45	MC14522AL	5.26	4.36	3.63
MC14008AL	4.55	3.76	3.14	MC14501AL■	.76	.63	.53	MC14526AL	5.26	4.36	3.63
MC14011AL*	.76	.63	.53	MC14502AL■	2.94	2.43	2.03	MC14527AL	5.26	4.36	3.63
MC14012AL*	.76	.63	.53	MC14506AL	1.35	1.12	.93	MC14528AL	3.41	2.83	2.35
MC14013AL†	1.59	1.31	1.09	MC14507AL*	1.76	1.46	1.21	MC14529AL	4.55	3.76	3.14
MC14015AL	4.74	3.92	3.27	MC14508AL▲	9.79	8.10	6.75	MC14530AL	2.37	1.96	1.64
MC14016AL§	1.59	1.31	1.09	MC14510AL	5.59	4.63	3.85	MC14531AL	4.74	3.92	3.27
MC14017AL‡	4.74	3.92	3.27	MC14511AL	5.87	4.86	4.05	MC14581AL▲	10.87	9.00	7.50
MC14021AL	4.74	3.92	3.27	MC14512AL	3.91	3.24	2.70	MC14582AL	4.13	3.42	2.85
MC14023AL*	.76	.63	.53	MC14514AL▲	9.79	8.10	6.75	MCM14505AL§	15.12	12.51	10.42
MC14025AL*	.76	.63	.53	MC14515AL▲	9.79	8.10	6.75	MCM14524AL	**	**	**
MC14027AL•	2.39	1.98	1.65	MC14516AL	4.85	4.01	3.34				

*Case 632; P_D = 10 nW. †Case 632; P_D = 50 nW. ‡P_D = 100 nW. §Case 632. ‡P_D = 5.0 mW. •P_D = 50 nW. ▲Case 684. ■P_D = 10 nW. ♦P_D = 500 nW. **Consult factory.

BIPOLAR LOGIC PRODUCTS

Function	Temperature	Case	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
128-bit ROM—16 eight-bit words; compatible with MDTL/MTTL lines. Open collectors or 2.0K pull up resistors at buffered output bit lines. Truth table and output option specified by user	0° C to +75° C	620	MCM4000L*	**	**	**
	0° C to +75° C	648	MCM4000P*	**	**	**
	−55° C to +125° C	620	MCM4300L*	**	**	**
Same as above except 256-bit ROM—32 eight-bit words	0° C to +75° C	620	MCM4002L*	**	**	**
	0° C to +75° C	648	MCM4002P*	**	**	**
1024-bit ROM—256 four-bit words; input loading of −0.25 mA max.; typ. address time of 50 ns; typ. chip select time of 25 ns; open collectors or 2.0K pull up resistors at output bit lines. Truth table and output option specified by user	0° C to +75° C	690	MCM4004AL*	**	**	**
512-bit PROM—64 eight-bit words; field programmable by "blowing" appropriate nichrome resistors to break metalization links; ninth bit available for circuit testing. Open collector outputs	0° C to +75° C	684	MCM5003AL	$32.00	24.50	18.00
	−55° C to +125° C	684	MCM5303AL	40.50	31.90	23.50
Same as above except 2.0K pull up resistors on the collector outputs	0° C to +75° C	684	MCM5004AL	32.00	24.50	18.00
	−55° C to +75° C	684	MCM5304AL	40.50	31.90	23.50

*Plus additional one time mask charge; available on request.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

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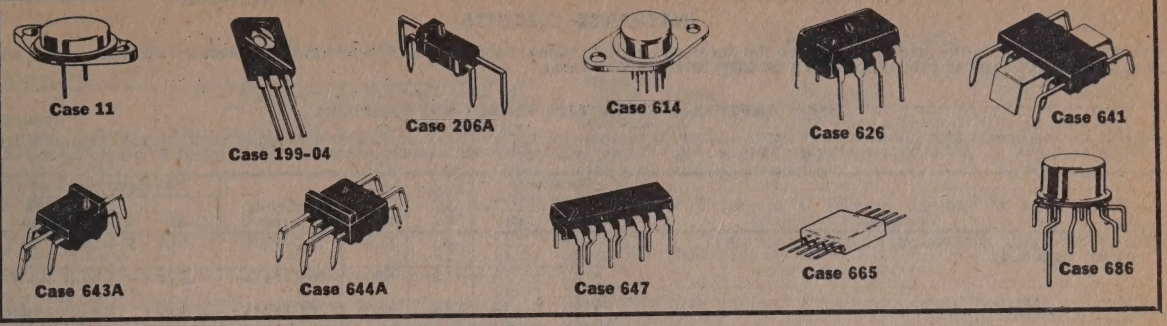


OPERATIONAL AMPLIFIERS

Nonencapsulated chip, flip-chip and beam-lead devices; flat ceramic beam-lead devices are also available. Types, data and pricing on request. Listed in order of increasing input bias current (I_{IB}) within temperature range.

INTERNALLY COMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1556G	601	0.015	100,000	±15	$18.00	$15.00	$12.00
MC1536G	601	0.02	100,000	±28	27.00	22.50	18.00
MLM107G	601	0.075	50,000	±15	11.92	9.93	7.95
MC1741G	601	0.5	50,000	±15	5.85	4.90	3.90

Temperature −25° C to +85° C.

MLM210G	601	0.003	Unity	±15	$9.00	$7.50	$6.00
MLM207G	601	0.075	50,000	±15	7.42	6.18	4.95

Temperature 0° C to +70° C.

MLM310G	601	0.007	Unity	±15	$4.90	$4.05	$3.25
MC1456G	601	0.03	70,000	±15	3.37	2.80	2.25
MC1436G	601	0.04	70,000	±28	6.75	5.60	4.50
MC1456CG	601	0.09	25,000	±15	2.85	2.37	1.90
MC1436CG	601	0.09	50,000	±28	3.75	3.10	2.50
MLM307G	601	0.25	25,000	±15	.97	.81	.65

NONCOMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM101AG	601	0.075	50,000	±15	$11.92	$ 9.93	$7.95
MC1531G	602B	0.15	2,500	±6.0	12.75	10.60	8.50
MC1539G	601	0.5	50,000	±15	3.75	3.10	2.50
MC1748G	601	0.5	50,000	±15	3.75	3.10	2.50
MC1709G	601	0.5	25,000	±15	2.62	2.10	1.75
MC1533G	602B	1.0	40,000	±15	5.25	4.40	3.50
MC1520G	602A	2.0	1,000	±6.0	9.75	8.10	6.50
MC1712G	601	5.0	2,500	*	8.93	7.44	5.95
MC1530G	602B	10	4,500	±6.0	12.75	10.60	8.50

Temperature −25° C to +75° C.

MLM201AG	601	2.0	50,000	±15	$7.42	$6.18	$4.95

Temperature 0° C to +75° C.

MLM301AG	601	0.25	25,000	±15	$0.97	$0.81	$0.65
MC1431G	602B	0.3	1,500	±6.0	5.25	4.35	3.50
MC1748CG	601	0.5	20,000	±15	1.02	.85	.68
MC1439G	601	1.0	15,000	±15	2.20	1.80	1.45
MC1709CG	601	1.5	15,000	±15	.99	.83	.66
MC1433G	602B	2.0	30,000	±15	3.90	2.65	1.95
MC1420G	602A	4.0	750	±6.0	2.70	2.25	1.80
MC1712CG	601	7.5	2,000	*	3.00	2.50	2.00
MC1430G	602B	15	3,000	±6.0	5.25	4.35	3.50

*+12, −6.0.

Same as above, except additional case types that are available.

Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999
MC1430F	606	$6.75	$5.60	$4.50	MC1520F	606	$12.00	$10.00	$ 8.00	MC1709CP2	646	$0.95	$0.79	$0.63
MC1430P	646	5.25	4.35	3.50	MC1530F	606	15.00	12.50	10.00	MC1709F	606	4.20	3.50	2.80
MC1431F	606	6.75	5.60	4.50	MC1531F	606	15.00	12.50	10.00	MC1709L	632	2.62	2.10	1.75
MC1431P	646	5.25	4.35	3.50	MC1533F	606	12.00	10.00	8.00	MC1712CF	606	3.75	3.13	2.50
MC1433F	606	8.85	7.35	5.90	MC1533L	632	5.25	4.40	3.50	MC1712CL	632	3.53	2.94	2.35
MC1433L	632	2.90	2.45	1.95	MC1709CF	606	2.25	1.80	1.50	MC1712F	606	9.75	8.13	6.50
MC1439L	632	2.40	2.00	1.60	MC1709CL	632	.99	.83	.66	MC1712L	632	8.93	7.44	5.95
MC1439P2	646	2.25	1.90	1.50	MC1709CP1	626	.83	.69	.55	MLM301AP1	626	.90	.75	.60

DUAL OPERATIONAL AMPLIFIERS

Listed in increasing order of input bias current (I_{IB}) within temperature range.

INTERNALLY COMPENSATED AND NONCOMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1558G*	601	0.5	50,000	±15	$ 7.50	$ 6.25	$ 5.00
MC1747L	632	0.5	50,000	±15	10.35	8.63	6.90
MC1537L†	632	0.5	25,000	±15	4.90	4.05	3.25
MC1535G†	602B	3.0	4,000	±6.0	12.75	10.60	8.50

Temperature 0° C to +75° C.

MC1458G*	601	0.5	20,000	±15	$1.73	$1.73	$1.35
MC1747CL	632	0.5	25,000	±15	5.85	4.88	3.90
MC1458CG	601	0.7	20,000	±15	1.58	1.58	1.23
MC1437L†	632	1.5	15,000	±15	2.65	2.20	1.75
MC1435G†	602B	5.0	3,500	±6.0	2.25	1.90	1.50

*Also available as nonencapsulated chip or flip-chip. †Noncompensated; all other types are internally compensated.

Same as above, except additional case types that are available.

Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999
MC1435F	607	$8.25	$6.85	$5.50	MC1458CL	632	$1.58	$1.58	$1.23	MC1458P2	646	$ 1.58	$ 1.58	$ 1.23
MC1435L	632	2.25	1.90	1.50	MC1458CP1	626	1.35	1.35	1.05	MC1535F	607	15.00	12.50	10.00
MC1437P	646	2.25	1.87	1.50	MC1458CP2	646	1.43	1.43	1.11	MC1535L	632	12.75	10.60	8.50
					MC1458L	632	1.73	1.73	1.35	MC1558L	632	7.50	6.25	5.00

QUAD OPERATIONAL AMPLIFIERS

Internally compensated; MC3301P2 for automotive applications; MC3401P for industrial applications.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC3301P	646	0.3	1,000	±15	$1.05	$1.05	$0.80
MC3401P	646	0.3	1,000	±15	1.10	.94	.75

POWER DRIVERS

High current gain (70 dB); I_O = 300 mA max. Internally compensated; temperature −55° C to +125° C (MC1538R); −55° C to +125° C (MC1438R).

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1538R	614	200	900	±15	$21.00	$17.50	$14.00
MC1438R	614	300	850	±15	9.75	8.10	6.50

SEE FIRST TWO MOTOROLA IC PAGES FOR ADDITIONAL CASE ILLUSTRATIONS

INTERFACE CIRCUITS

Interface circuits fit in the gray area between the linear and digital realms. Usually these ICs perform the necessary translation between an analog signal input and the required digital logic levels or vice versa.

SENSE AMPLIFIERS—CORE AND PLATED-WIRE MEMORY

Provide the necessary translation from outputs of core or plated-wire to MTTL (unless otherwise noted) logic levels. Temperature −55° C to +125° C, MC5500/1500 Series; 0° C to +70° C, MC7500/1400 Series. Power supply, ±5.0 V except as otherwise noted.

Function	Threshold Voltage at V_{ref} mV	mV	Max. t_p ns	Case	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Dual channel with open collector outputs, high sink current capability	11–19	15	45	620	MC7522L	$ 4.25	$ 3.55	$ 2.85
	36–44	40						
	8–22	15	45	620	MC7523L	3.75	3.10	2.50
	33–47	40						
Dual with independent strobing	11–19	15	40	620	MC7524L	3.00	2.50	2.00
	36–44	40						
	8–22	15	40	620	MC7525L	2.36	1.96	1.57
	33–47	40						
Same as MC7524, MC7525 except amplifier test points included	11–19	15	40	620	MC7528L	5.30	4.41	3.53
	10–20	15	40	620	MC5528L	7.50	6.25	5.00
	35–45	40						
	8–22	15	40	620	MC5529L	4.85	4.05	3.25
	33–47	40		620	MC7529L†	2.15	1.79	1.43
Same as MC7524, MC7525 except NAND outputs	11–19	15	40	620	MC7534L	4.88	4.06	3.25
	10–20	15	40	620	MC5534L	7.50	6.25	5.00
	35–45	40						
	8–22	15	40	620	MC5535L	4.85	4.05	3.25
	33–47	40		620	MC7535L†	2.93	2.44	1.95
Same as MC7528, MC7529 except NAND outputs	11–19	15	40	620	MC7538L	4.88	5.06	3.25
	10–20	15	40	620	MC5538L	7.50	6.25	5.00
	35–45	40						
	8–22	15	40	620	MC5539L	4.85	4.05	3.25
	33–47	40		620	MC7539L	2.93	2.44	1.95
0.5 μs cycle time, 20 ns typ. response time, −6.0 V power supply	14–20	−6	30	632	MC1540L‡	5.95	4.95	3.95
				632	MC1440L‡	1.50	1.25	.98
0.4 μs cycle time, 1.5 V common-mode inputs, 1.0 mV typ. input-offset	14–20	20	30	632	MC1541L§	12.00	10.00	8.00
				632	MC1441L#	5.25	4.40	3.50
MECL compatible, +5.0, −5.2 V power supply, threshold insensitive to supply variations, comp. outputs	17–23	540	35	632	MC1543L	12.00	10.00	8.00
AC coupled,decoded input chan. selection, wired-OR output/ output strobe capability, +5.0, −6.0 V power supply	1.0 typ.	.....	25	620	MC1544L*	13.50	11.25	9.00
				620	MC1444L*	12.00	10.00	8.00

*Plated-wire memory; all other types are core memory. †Case 648 also available. ‡Case 602B available at same price; Case 606 also available, price on request. §Case 607 also available. #Case 607 also available at same price.

DRIVERS

Temperature 0° C to +70° C. MDTL, MTTL compatible except as otherwise noted.

Motorola Type	Case	Function	Net Each, Lots 1-24	25-99	100-999
MC75109L	632	Dual line driver with	$4.71	$3.93	$3.14
MC75109P	646	inhibit inputs for party	4.05	3.38	2.70
MC75110L	632	line driver applications,	4.71	3.93	3.14
MC75110P	646	MTTL compatible	4.05	3.38	2.70
MC1488L†	632	Quad line driver	6.75	5.60	4.50
MC75325L	620	Dual memory driver with	6.99	5.83	4.66
MC75325P	648	logic inputs	6.30	5.25	4.20
MC75450L	632	Dual peripheral positive-	2.40	2.00	1.60
MC75450P	646	AND driver, 2 NPN output transistors	2.10	1.75	1.40
MC75451P	626	MC75450 w/logic gate outputs internally connected to NPN output transistors	1.20	1.00	.80
MC75452P	626	Dual pos.-NAND driver with logic gate outputs internally connected to NPN output transistors	1.20	1.00	.80
MC75453P	626	MC75452P1 except positive-OR driver	1.20	1.00	.80
MC75454P	626	MC75452P except positive-NOR driver	1.20	1.00	.80

*MDTL compatible. †0° C to +75° C. ‡MTTL compatible.

COMPARATORS

Temperature 0° C to +75° C. A_{VOL} = 1,000 V/V min. except MC1711, 700V/V min. Temperature −55° C to +125° C. avail.

MC1710CF	606	Differential comparator,	$2.63	$2.19	$1.75
MC1710CG†	601	output impedance =	1.35	1.15	.90
MC1710CP	646	200 ohms	.90	.75	.60
MC1414L	632	Dual MC1710 diff. comp.	1.50	1.50	1.17
MC1711CF	606	Dual w/outputs wired-OR,	2.55	2.13	1.70
MC1711CG†	603-2	strobe capability	1.35	1.15	.90

†Case 632 available at same price.
Temperature −40° C to +85° C. V_{IO} = 20 mVDC max.

MC3302P	646	Quad comparator	$1.90	$1.90	$1.50

HIGH FREQUENCY AMPLIFIERS

Temperature −55° C to +75° C.

Motorola Type	Case	Bandwidth at Av MHz	dB	V_{OS} p-p V	Net Each, Lots of 1-24	25-99	100-999
MC1510G	601	DC to 40*		4.5	$12.00	$10.00	$8.00
MC1410G‡	601				2.25	1.90	1.50
MC1545F	607	DC to 75*		2.5	9.75	8.10	6.50
MC1545G†	602A				8.25	6.85	5.50
MC1445F‡	607				6.95	5.80	4.65
MC1445G†‡	602A				2.25	1.90	1.50
MC1550F	606	22 min.*		6.0	7.25	6.05	4.85
MC1550G	602B				1.50	1.00	.75
MC1552G	602B	40	34	4.2	9.00	7.50	6.00
		35	40				
MC1553G	602B	35	46	4.2	9.00	7.50	6.00
		15	52				
MC1590G	601	100	4	7.0	5.60	4.70	3.75
		60	25				
MC1733G	603-02	40	52	4.0	8.60	7.20	5.75
MC1733L	632	90	40		8.25	6.88	5.50
MC1733CG‡	603-02	120	20		1.17	.98	.78
MC1733CL‡	632				1.17	.98	.78

*Bandwidth value only. †Case 632 (suffix L) available at same price. ‡Temperature, 0° C to +75° C.

DIGITAL-TO-ANALOG CONVERTERS

Temperature 0° C to +70° C. MDTL, MTTL compatible.
Temperature −55° C to +125° C. available.

Motorola Type	Case	Function	Net Each, Lots 1-24	25-99	100-999
MC1406L	632	6-bit D/A converter	$5.90	$4.95	$3.95
MC1408L6	620	8-bit D/A converter	5.95	4.95	3.95
MC1408L7	620		7.45	6.20	4.95
MC1408L8	620		8.95	7.45	5.95

RECEIVERS

Temperature 0° C to +70° C; MTTL compatible.

MC75107L*	632	Dual line receiver with	$4.50	$3.75	$3.00
MC75107P*	646	strobe inputs	3.87	3.23	2.58
MC75108L†	632		4.50	3.75	3.00
MC75108P†	646		3.87	3.23	2.58

Temperature 0° C to +75° C. MDTL, MTTL compatible.

MC1489L	632	Quad line receiver	$5.00	$4.20	$3.35
MC1489AL	632		5.00	4.20	3.35

*Active pullup. †Open collector output.

SEE FIRST TWO MOTOROLA IC PAGES AND FIRST LINEAR IC PAGE FOR CASE ILLUSTRATIONS

REGULATORS

P_D at $T_A = 25°$ C.

POSITIVE VOLTAGE REGULATORS

Temperature −10° C to +75° C.

Motorola Type	Case	V_O VDC	Maximum I_O mADC	Maximum P_D W	Net Each, Lots of 1-24	25-99	100-999
MFC4060A	206A	4.6–32	200	1.0	$1.17	$1.17	$0.90
MFC6030A	643A				1.14	1.14	.88
MFC4062A	206A				1.12	1.12	.86
MFC6032A	643A				1.09	1.09	.84
MFC4063A	206A	4.6–17	200	1.0	1.07	1.07	.82
MFC6033A	643A				1.04	1.04	.80
MFC4064A	206A				1.00	1.00	.77
MFC6034A	643A				.98	.98	.75

Temperature 0° C to +70° C.

MLM305G	601	4.5–30	20	0.68	$3.00	$2.50	$2.00
MC1469G	602A	2.5–32	200	0.68	3.00	2.50	2.00
MC1469R	614		500	3.0	3.75	3.10	2.50
MC1461G	602A	2.5–32	200	0.68	5.25	4.35	3.50
MC1461R	614		500	3.0	6.75	5.60	4.50
MC1460G	602A	2.5–17	200	0.68	3.75	3.10	2.50
MC1460R	614		500	3.0	5.25	4.35	3.50
MC1723CG	603-03	2.0–37	150	0.8	1.49	1.24	.99
MC1723CL	632				1.58	1.31	1.05

FIXED OUTPUT POSITIVE VOLTAGE REGULATORS

$T_J = -55°$ C to +125° C.

Motorola Type	Case	V_O VDC	Maximum I_O mADC	Maximum P_D W	Net Each, Lots of 1-24	25-99	100-999
MLM109K	11	4.7–5.3	1000	3.5	$28.40	$23.60	$19.00

$T_J = -25°$ C to +125° C.

MLM209K	11	4.7–5.3	1000	3.5	$11.90	$9.90	$7.95

$T_J = 0°$ C to +125° C.

Motorola Type	Case	V_O VDC	Maximum I_O mADC	Maximum P_D W	Net Each, Lots of 1-24	25-99	100-999
MLM309K	11	4.8–5.2	1000	3.5	$3.75	$3.15	$2.50
MC7805CP	199-04	4.8–5.2	1500	2.0	2.62	2.22	1.75
MC7806CP	199-04	5.75–6.25	1500	2.0	2.62	2.22	1.75
MC7808CP	199-04	7.7–8.3	1500	2.0	2.62	2.22	1.75
MC7812CP	199-04	11.5–12.5	1500	2.0	2.62	2.22	1.75
MC7815CP	199-04	14.4–15.6	1500	2.0	2.62	2.22	1.75
MC7818CP	199-04	17.3–18.7	1000	2.0	2.62	2.22	1.75
MC7824CP	199-04	23–35	1000	2.0	2.62	2.22	1.75

NEGATIVE AND DUAL VOLTAGE REGULATORS

Temperature −55° C to +125° C.

Motorola Type	Case	V_O VDC	Maximum I_O mADC	Maximum P_D W	Net Each, Lots of 1-24	25-99	100-999
MC1563G	602A	−3.6–37	200	0.68	$7.90	$6.55	$5.25
MC1563R	614		500	2.4	9.75	8.15	6.50
MC1568G*	603-03	±14.8–	100	0.8	9.37	7.80	6.25
MC1568L*	632	±15.2†		1.0	9.75	8.15	6.50
MC1568R*	614			2.4	10.50	8.75	7.00
MLM104G	603-02	−0.015–40	20	0.68	12.00	10.00	8.00

*Dual voltage regulator. †Preset voltage range (V_{OR}); range is adjustable by adding external resistors from ±8.0 to ±20 VDC.

Temperature −25° C to +85° C (MLM204); 0° C to +75° C (MC1468); 0° C to +70° C (MC1463, MLM304).

Motorola Type	Case	V_O VDC	Maximum I_O mADC	Maximum P_D W	Net Each, Lots of 1-24	25-99	100-999
MC1463G	602A	−3.8–32	200	0.68	$4.15	$3.45	$2.75
MC1463R	614		500	2.4	5.25	4.40	3.50
MC1468G*	603-02	±14.5–	100	0.8	4.20	3.50	2.80
MC1468L*	632	±15.5†		1.0	4.35	3.62	2.90
MC1468R*	614			2.4	5.62	4.68	3.75
MLM204G	603-02	−0.015–40	20	0.68	7.50	6.25	5.00
MLM304G	603-02	−0.035–30	20	0.68	3.75	3.12	2.50

SPECIAL-PURPOSE REGULATORS

Floating regulator can be used as a voltage controlled current source. Temperature −55° C to +125° C (MC1566); 0° C to +75° C (MC1466).

MC1566L	632	0–1000‡	§	0.30	$9.75	$8.15	$6.50
MC1466L	632	0–1000‡	#	0.36	7.50	6.25	5.00

*Dual voltage regulator. †Preset voltage range (V_{OR}); range is adjustable by adding external resistors from ±8.0 to ±20 VDC. ‡Limited only by the characteristics of the external series pass transistor. §Current regulation: 0.1% +1 mA; #0.02% +1 mA.

SEE FIRST TWO MOTOROLA IC PAGES AND FIRST LINEAR IC PAGE FOR CASE ILLUSTRATIONS

CONSUMER DEVICES

TELEVISION CIRCUITS

Motorola Type	Case	Function	Net Each, Lots of 1-99	100-999
MC1330P	626	3rd IF and video detector	$1.50	$1.15
MC1349P	626	1st and 2nd video IF	1.17	.90
MC1350P	626	amplifier	.98	.75
MC1351P	646	Sound IF, detector, limiter, audio preamplifier	1.43	1.10
MC1352P	646	1st and 2nd video IF, AGC keyer and amplifier	1.37	1.05
MC1357P	646	Sound IF detector	1.49	1.15
MC1358P	646	Sound IF detector, DC volume control, preamplifier	1.30	1.00
MC1364P	646	Automatic fine tuning	1.37	1.05
MC1398P	646	Chroma IF amplifier and subcarrier system	2.82	2.17

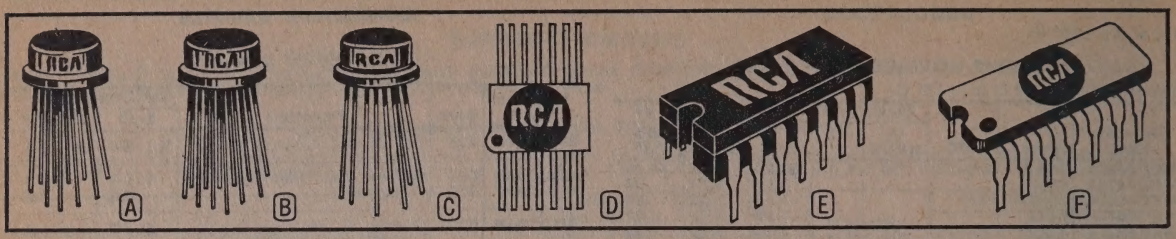
RADIO CIRCUITS

MC1310P	646	Coilless FM multiplex	$4.29	$3.30
MC1312P	646	Four-channel SQ*decoder	2.93	1.95
MC1350P	626	IF amplifier	.98	.75
MC1355P	646	Limiting FM-IF amplifier	1.43	1.10
MC1357P	646	Limiting IF amplifier/ quadrature detector	1.49	1.15

*Columbia Broadcasting Systems trademark.

DIGITAL AND LINEAR CASES

Case	Suffix	No. of Pins	Material
11	None	2	Metal
199-04	P	3	Plastic
206A	None	4	Plastic
601 (TO-99)	G	8	Metal
602A, B	G	10	Metal
603 (TO-100)	G	10	Metal
604	G	12	Metal
606 (TO-91)	F	10	Ceramic
607 (TO-86)	F	14	Ceramic
614	R	9	Metal
617	S	14	Ceramic
619-02	G	8	Metal
620	L	16	Ceramic
623	L	24	Ceramic
626	P, P1	8	Plastic
632 (TO-116)	L	14	Ceramic
637	L	14	Ceramic
638	L	16	Ceramic
641	None	10	Plastic
643A	None	6	Plastic
644A	None	8	Plastic
646 (TO-116)	P, P2	14	Plastic
647	PQ	14	Plastic
648	P	16	Plastic
649	P	24	Plastic
650	F	16	Ceramic
665	F	10	Ceramic
667	F	24	Ceramic
677	L	22	Ceramic
684	L	24	Ceramic
686	G	10	Metal
690	AL	16	Ceramic
694	L	22	Ceramic
695	L	28	Ceramic



RCA integrated circuits are available in the following packages: **TO-5** 10-lead, Fig. A; 12-lead, Fig. B; 8-lead, Fig. C; **Flat Pack** 14-lead ceramic and metal, Fig. D; **Dual Inline** 14-lead plastic, Fig. E and **TO-116** dual inline 14-lead ceramic and metal, Fig. F.

High Reliability Linear Integrated Circuits are also available from RCA. Complete data and pricing on request.

LINEAR INTEGRATED CIRCUITS

OPERATIONAL AMPLIFIERS

RCA Type	Fig.	Description	Net Each, Lots of 1-99	100-999
CA3008	D	Wideband	$3.14	$2.28
CA3008A	D		5.10	3.72
CA3010	B		.89	.65
CA3010A	B		1.07	.78
CA3015	B		2.14	1.56
CA3015A	B		3.05	2.22
CA3016	D		4.30	3.12
CA3016A	D		6.52	4.75
CA3029	E		.81	.59
CA3029A	E		.98	.71
CA3030	E		1.82	1.32
CA3030A	E		2.72	1.98
CA3033	F	High current	4.79	3.48
CA3033A	F		8.09	5.88
CA3037	F	Wideband	2.80	2.04
CA3037A	F		4.29	3.12
CA3038	F		4.29	3.12
CA3038A	F		5.78	4.20
CA3047	E	High current	2.61	1.90
CA3047A	E		4.79	3.48
CA3060AD	F*	Triple transconductance amplifier array (OTA)	5.78	4.20
CA3060BD	F*		9.80	7.15
CA3060D	F*		8.16	5.95
CA3060E	E*		3.25	2.40
CA3078AT	C	Single operational amplifier	3.50	3.00
CA3078T	C		1.75	1.50
CA3080	C†	Single transconductance amplifier (OTA)	.97	.71
CA3080A	C†		3.22	2.34
CA3458T	C†	General purpose	1.40	1.20
CA3558T	C†		4.10	3.00
CA3741CT	C†		.80	.69
CA3741T	C†		2.50	1.95
CA3747CE	E		2.10	1.50
CA3747CT	A		2.10	1.50
CA3747E	E		2.70	1.95
CA3747T	A		5.45	3.95
CA3748CT	C†		1.30	.95
CA3748T	C†		2.00	1.50
CA6078AT	C†	Low "popcorn" noise	9.90	7.20
CA6741T	C†		5.45	3.96

HIGH-GAIN WIDEBAND AMPLIFIERS

CA3011	A	−1 MHz to 20 MHz FM IF amplifiers	$1.47	$1.07
CA3012	A		1.82	1.32
CA3020	B	DC to 9 MHz Multipurpose power	2.56	1.86
CA3020A	B	DC to 8 MHz	3.26	2.37
CA3021	B	DC to 6 MHz Low power video	3.14	2.28
CA3022	B	DC to 20 MHz	2.64	1.92
CA3023	B	DC to 40 MHz	2.56	1.86
CA3040	B	DC to 200 MHz—video	4.87	3.54

DIFFERENTIAL AMPLIFIERS

CA3000	A	DC to 30 MHz	$3.80	$2.76
CA3001	B	Video and wideband—DC to 55 MHz	5.55	4.00
CA3002	A	IF—DC to 15 MHz	3.71	2.70
CA3004	B	RF—DC to 100 MHz	3.71	2.70
CA3005	B		2.48	1.80
CA3006	B		5.80	4.20
CA3007	B	BW = 0.01 MHz at 3 dB	5.35	3.90
CA3008	D	AF—DC to 3 kHz	3.14	2.28
CA3008A	D		5.10	3.72
CA3028A	C†	Cascade—DC to 500 MHz	1.47	1.07
CA3028B	C†		2.06	1.50
CA3053	C		.81	.59

MATCHED DIODE LINEAR ARRAY

CA3019	A	Individual	$1.07	$ .78
CA3039	B	Quad plus two	1.07	.78

*16-lead. †Available in formed lead (DIL-can) TO-5 pkg.

LINEAR ARRAYS

TRANSISTOR

RCA Type	Fig.	Description	Net Each, Lots of 1-99	100-999
CA3018	B	Darlington connected pair plus two individual	$1.45	$1.06
CA3018A	B		2.06	1.50
CA3036	A	Dual Darlington connected	3.35	2.45
CA3045	F	Differentially connected pair plus 3 individual	4.05	3.50
CA3046	F		1.29	.92
CA3050	F	Dual Darlington connected	3.71	2.70
CA3051	E		2.72	1.98
CA3081	E‡	NPN general purpose	1.49	1.08
CA3082	E‡	NPN general purpose	1.49	1.08
CA3083	E‡	NPN general purpose	1.57	1.14
CA3084	E	PNP general purpose	2.95	2.15
CA3086	E	NPN general purpose	.81	.59
CA3093E	E‡	2 zener diodes, 1 diode and 3 transistors	2.23	1.62
CA3095E	E	Super beta	2.15	1.56
CA3096AE	E	NPN-PNP general purpose	2.64	1.92
CA3096E	E		2.05	1.50
CA3118AT	B	Darlington-connected pair plus 2 individual	2.31	1.68
CA3118T	B		1.62	1.18
CA3146AE	E	Differential-connected pair plus 2 individual	2.31	1.68
CA3146E	E		1.62	1.18
CA3183AE	E‡	NPN general purpose	2.48	1.80
CA3183E	E‡		2.05	1.50

AMPLIFIER

CA3026	B	Dual independent	$2.06	$1.50
CA3035	A	Three amplifiers	2.48	1.80
CA3035V1	A*	Three amplifiers	2.48	1.80
CA3048	E‡	Four amplifiers	4.04	2.94
CA3049	B	Dual independent	2.40	1.75
CA3054	E	Dual independent	2.06	1.50
CA3094AT	C•	Programmable power switch/amplifier	1.63	1.19
CA3094BT	C•		2.29	1.67
CA3094T	C•		.90	.75

SPECIAL FUNCTION CIRCUITS

CA3091D	F	Four quadrant multiplier	$10.70	$7.80
CA3541D	E	Sense amplifier	9.90	7.20

LINEAR POWER CONTROL CIRCUITS

VOLTAGE REGULATOR

CA3085	C•	V_{REF} = 1.6 V typ.;	$0.98	$0.71
CA3085A	C•	V_O = 1.6 V min.;	2.39	1.74
CA3085B	C•	V_I = 7.5 V min.	6.52	4.74

AC THYRISTOR

CA3058	E	Zero voltage switches	$5.80	$4.20
CA3059	E		3.20	2.35
CA3079	E		1.63	1.19

OPTOELECTRONIC

CA3062	B	Photo detector and power amplifier	$4.86	$3.54

LINEAR TELEVISION CIRCUITS

CA3035	A	Remote control	$2.48	$1.80
CA3035V1	A*		2.48	1.80
CA3044	A	Automatic fine tuning/detector/output amp	2.31	1.68
CA3044V1	A*		2.31	1.68
CA3064	A	Automatic fine tuning/detector/zener diode voltage regulator/DC amplifier	2.31	1.68
CA3066†	D‡	Chroma signal processor/chroma amplifier	4.29	3.12
CA3067†	D‡	Chroma demodulator	4.46	3.24
CA3068	D§	Video IF system	4.95	3.60
CA3070#	E‡	Chroma signal processor	3.47	2.52
CA3071#	E	Chroma amplifier	3.30	2.40
CA3072#	E	Chroma demodulator	3.38	2.46
CA3120E	E	Signal processor "jungle" circuit	2.23	1.49

*Formed lead. †CA3066 and CA3067 together constitute a complete chroma system. ‡16-lead. §20-lead. #CA3070, CA3071 and CA3072 together constitute a complete TV chroma system. •Available in formed lead (DIL-can) TO-5 pkg.

LINEAR FM, AM AND AUDIO CIRCUITS

Fig. E types are 16-lead.

RCA Type	Fig.	Description	Net Each, Lots of 1-99	Net Each, Lots of 100-999
CA3011	A	FM IF amplifier	$1.47	$1.07
CA3012	A		1.82	1.32
CA3013	A	Wideband amplifier/ limiter/FM detector	2.15	1.56
CA3014	A		2.48	1.80
CA3041	D	Wideband amplifier/ limiter/FM detector/ driver	2.06	1.50
CA3042	D		2.06	1.50
CA3043	B	FM IF amplifier/limiter/ FM detector/AF preamp/driver	2.81	2.04
CA3048	E	Stereo preamplifier	$4.04	$2.94
CA3052	E		3.14	2.28
CA3065	D	FM IF amplifier/limiter/ FM detector/driver/ electronic attenuator	2.31	1.68
CA3065E	E		2.31	1.68
CA3075	D	FM IF amplifier/limiter/ FM detector/AF preamp	2.31	1.68
CA3076	C	FM IF amplifier/limiter	2.64	1.90
CA3088E	E	AM IF amplifier/AM	2.31	1.68
CA3089E	E	detector/AF preamplifier	3.63	2.64

COS/MOS INTEGRATED CIRCUITS

CD4000A Series digital IC's operating temperature range −55° C to +125° C except types in plastic package, −40° C to +85° C. Noise immunity=4.5 V typ. Threshold voltage=1.5 V typ. N-channel; −1.5 V typ. P-channel. Recommended operating voltage range of 3 V to 15 V. DC supply voltage −0.5 V to +15 V. Available in four types of packages: Suffix **D**, ceramic dual inline; suffix **E**, plastic dual inline; suffix **K**, flat pack; suffix **T**, TO-5 style, 12 lead; all others are 14- or 16-lead.

High Reliability COS/MOS Integrated Circuits are also available from RCA. Complete data and pricing on request.

GATES

RCA Type	Description	Net Each, Lots of 1-99	Net Each, Lots of 100-999
CD4000AD	Dual 3-input NOR	$3.77	$3.10
CD4000AE	gate plus inverter	.58	.48
CD4000AK	—positive logic	3.77	3.10
CD4001AD	Quad 2-input NOR	3.99	3.30
CD4001AE	gate—positive	.58	.48
CD4001AK	logic	3.99	3.30
CD4002AD	Dual 4-input NOR	4.13	3.40
CD4002AE	gate—positive	.58	.48
CD4002AK	logic	4.13	3.40
CD4007AD	Dual complementary	3.19	2.65
CD4007AE	pair plus inverter	.58	.48
CD4007AK		3.19	2.65
CD4011AD	Quad 2-input NAND	3.99	3.30
CD4011AE	gate—positive	.58	.48
CD4011AK	logic	3.99	3.30
CD4012AD	Dual 4-input NAND	4.18	3.45
CD4012AE	gate—positive	.58	.48
CD4012AK	logic	4.18	3.45
CD4019AD	Quad AND-OR	6.09	5.05
CD4019AE	select gate	1.45	1.21
CD4019AK		6.09	5.05
CD4023AD	Triple 3-input	4.18	3.44
CD4023AE	NAND gate—	.58	.48
CD4023AK	positive logic	4.18	3.44
CD4025AD	Triple 3-input NOR	4.18	3.44
CD4025AE	gate—positive	.58	.48
CD4025AK	logic	4.18	3.44
CD4030AD	Quad exclusive	4.58	3.79
CD4030AE	OR gate	1.24	1.04
CD4030AK		4.58	3.79
CD4041AD*	Quad true/	7.14	5.90
CD4041AE	complement buffer	3.22	2.68

HEX BUFFERS

CD4009AD*	Inverting logic-level	$6.38	$5.25
CD4009AE	converters	1.48	1.22
CD4010AD	Non-inverting logic-	6.38	5.25
CD4010AE	level converters	1.48	1.22
CD4049AD*	Hex buffer/	5.73	4.47
CD4049AE	converter	1.22	1.01
CD4050AD*		5.73	4.74
CD4050AE		1.22	1.01

DECODERS

CD4028AD*	BCD-to-decimal	$9.56	$7.92
CD4028AE		2.79	2.32

MULTIPLEXERS

CD4016AD*	Quad bilateral	$6.24	$5.15
CD4016AE	switch	1.23	1.02

LATCHES

CD4042AD*	Quad clocked D	$7.14	$5.90
CD4042AE	latch	2.57	2.14
CD4043AD*	Quad NOR R/S	7.14	5.90
CD4043AE	latch	3.22	2.68
CD4044AD*	Quad NAND R/S	7.14	5.90
CD4044AE	latch	3.22	2.68

MULTIVIBRATORS

CD4047AD*	Monostable/astable	$7.25	$6.00
CD4047AE		2.56	2.14

*Package **K** (CD4047A**K**) available at same price.

ARITHMETIC DEVICES

RCA Type	Description	Net Each, Lots of 1-99	Net Each, Lots of 100-999
CD4008AD*	Four-bit full adder	$12.25	$10.15
CD4008AE		3.06	2.55
CD4032AD*	Positive logic triple	8.35	6.91
CD4032AE	serial adder	3.27	2.72
CD4038AD*	Negative logic triple	8.35	6.91
CD4038AE	serial adder	3.27	2.72
CD4057AD	LSI four-bit array	37.70	31.20
CD4057AK		40.00	33.00

DUAL FLIP-FLOPS

CD4013AD*	D type with set-reset	$5.73	$4.75
CD4013AE		1.23	1.02
CD4027AD*	J-K master-slave	6.38	5.28
CD4027AE		1.91	1.59

STATIC SHIFT REGISTERS

CD4006AD*	18-stage	$11.02	$ 9.10
CD4006AE		2.96	2.46
CD4014AD*	8-stage	12.25	10.15
CD4014AE	synchronous	3.22	2.68
CD4015AD*	Dual 4-stage	12.25	10.15
CD4015AE		3.22	2.68
CD4021AD*	8-stage	11.82	9.75
CD4021AE	asynchronous	3.22	2.68
CD4031AD*	64-stage	15.08	12.48
CD4031AE		6.64	5.53
CD4034AD	8-stage	14.50	12.00
CD4034AK	bidirectional	14.50	12.00
CD4035AD*	4-stage w/J-K input	8.72	6.33
CD4035AE	and T/C output	3.20	2.66

COUNTERS/DIVIDERS

CD4017AD	10-decoded	$12.76	$10.60
CD4017AE	decimal outputs	3.22	2.68
CD4017AK	decade	12.76	10.60
CD4018AD	Divide-by-N	11.17	9.25
CD4018AE	fixed or program-	3.63	3.02
CD4018AK	mable counter	11.17	9.25
CD4020AD*	14-stage binary	14.50	12.00
CD4020AE	ripple carry	3.58	2.98
CD4022AD*	Octal—8-decoded	11.60	9.60
CD4022AE	outputs	3.11	2.59
CD4024AD*	7-stage binary	8.70	7.20
CD4024AE	ripple carry	2.31	1.92
CD4024AT		10.88	9.00
CD4026AD*	7-segment display	14.54	12.00
CD4026AE	outputs decade	3.10	2.51
CD4029AD*	Presettable up/	13.84	11.47
CD4029AE	down	2.99	2.39
CD4033AD*	7-segment display	14.50	12.00
CD4033AE	outputs decade	3.10	2.51
CD4045AD*	21-stage counter	8.70	7.20
CD4045AE		4.00	3.33

MEMORIES (RAMS)

CD4036AD	4 word x 8 bit binary	$13.85	$11.46
CD4036AK	addressing	13.85	11.46
CD4039AD	4 word x 8 bit direct	13.85	11.46
CD4039AK	word-line addressing	13.85	11.46

PHASE-LOCKED LOOP

CD4046AD*	Phase-locked loop	$9.43	$7.80
CD4046AE		2.43	2.01

*Package **K** (CD4046A**K**) available at same price.

DIGITAL TTL INTEGRATED CIRCUITS

ECCSL (Emitter-Coupled Current Steered Logic) and BCD-to-7 segment decoder drivers also available. Specifications and prices available on request.

TO-1

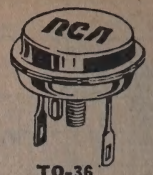
TO-3

TO-5

TO-5 w/ Radiator

TO-8

TO-18


TO-36

SILICON MOS FETs (TO-72)

N-CHANNEL SINGLE GATE

RCA Type	Maximum V_{DS} V	Maximum P_T W	Typical G_{PS} dB	Typical NF at f dB	Typical NF at f MHz	Typical C_{rss} pF
3N142	20	0.1	24	4	100	0.22
3N138	35	0.15	*	.....	.....	0.4
3N139	35	0.15	14	4	200	0.2
40468A	20	0.375	24	3.5	100	0.25
40559A	20	0.375	24	.....	100	0.25
3N128	20	0.4	16	3.5	200	0.25
3N143	20	0.4	13.5	.....	100	0.25
3N152	20	0.4	17	2.5	200	0.25
3N153	20	0.4	†	.....	.....	0.25
3N154	20	0.4	20	3.5	200	0.25
40467A	20	0.4	20	3.5	200	0.25
40601	20	0.4	14	.....	.....	.....
40602	20	0.4	35	.....	.....	0.03
40603	20	0.4	26	2.5	100	0.03
40604	20	0.4	21	.....	.....	0.03

*g_{fs} = 6000 μmho typ. †g_{fs} = 10,000 μmho typ.

N-CHANNEL DUAL GATE

RCA Type	Maximum V_{DS} V	Maximum P_T W	Typical G_{PS} dB	Typical NF at f dB	Typical NF at f MHz	Typical C_{rss} pF
3N140	20	0.4	18	3.5	200	0.03
3N141	20	0.4	17	.....	200	0.03
3N159	20	0.4	18	2.5	200	0.03
40600	20	0.4	20	5	200	0.03

N-CHANNEL DUAL GATE PROTECTED

RCA Type	Maximum V_{DS} V	Maximum P_T W	Typical G_{PS} dB	Typical NF at f dB	Typical NF at f MHz	Typical C_{rss} pF
3N187	20	0.33	18	3.5	200	0.02
3N200	20	0.33	12.5	4.5	400	0.02
40673	20	0.33	18	3.5	200	0.02
40819	25	0.33	18	3.5	200	0.02
40820	20	0.33	17	4.5	200	0.02
40821	20	0.33	11	.....	200	0.02
40822	20	0.33	24	2.0	100	0.02
40823	20	0.33	18	.....	100	0.025
40841	.....	.....	32	0.46	.....	0.2

GERMANIUM PNP POWER TRANSISTORS (TO-3)

RCA Type	Maximum V_{CEO} −V	Maximum P_T W	Maximum I_C −A	h_{FE} at I_C Min.-Max.	h_{FE} at I_C −A
2N3732	100*	3	3	35 min.	0.7
2N3731	320*	5	10	15 min.	6
2N4346	320*	5	10	25 min.	6
40439	320*	5	10	15 min.	6
40440	200*	5	10	15 min.	6
2N1183†	20	7.5	3	20–60	0.4
2N1183A†	30	7.5	3	20–60	0.4
2N1183B†	40	7.5	3	20–60	0.4
2N1184†	20	7.5	3	40–120	0.4
2N1184A†	30	7.5	3	40–120	0.4
2N1184B‡	40	7.5	3	40–120	0.4
2N3730	200*	10	3	35 min.	0.7
2N2148	40	12.5	5	60–100	1
40022	32*	12.5	5	38 min.	1
40050	40	12.5	5	50 min.	1
40051	50	12.5	5	50 min.	1
40254	32*	12.5	5	30 min.	1
40462	40	12.5	5	50 min.	1
40612	25*	12.5	5	30–150	1
40623	45*	12.5	5	50–170	1
40626	55*	12.5	5	50–170	1
40421	50	12.5	5	62–175	1
2N1905	50	30	6	50–150	1
2N2869	50	30	10	50–165	1
2N2870	50	30	10	50–165	1

*V_{CER}. †In TO-8 package; JAN type also available. ‡TO-8 pkg.

SEE LAST PAGES OF LISTING FOR SEMICONDUCTOR PRICING

SILICON POWER TRANSISTORS

Listed according to P_T and f_T range.

NPN—0.3 MHz TO 3 MHz (f_T)

RCA Type	Pkg.	Maximum V_{CEO} V	Maximum P_T W	Maximum I_C A	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A
2N1479*	TO-5	40	5	1.5	20–60	0.2
2N1480*	TO-5	55	5	1.5	20–60	0.2
2N1481*	TO-5	40	5	1.5	35–100	0.2
2N1482*	TO-5	55	5	1.5	35–100	0.2
2N1700	TO-5	40	5	1	20–80	0.1
40367	TO-5	55	5	1.5	35–100	0.2
40372	TO-66†	55	5.8	4	25–100	0.5
40373	TO-66†	140	5.8	3	20–80	0.5
40347	TO-5	40	8.75	1.5	25–100	0.45
40348	TO-5	65	8.75	1.5	30–125	0.3
40340	TO-5	140	8.75	1.5	30–125	0.15
2N5784	TO-5	65	10	3.5	20–100	1
2N5785	TO-5	50	10	3.5	20–100	1.2
2N5786	TO-5	40	10	3.5	20–100	1.6
40610	TO-5	25	10	3	20–100	1.2
40615	TO-5	30	10	3	20–100	1.2
40620	TO-5	32	10	3	20–100	1.5
2N6263	TO-66	120	20	3	20–100	0.5
2N1483‡	TO-8	40	25	3	20–60	0.75
2N1484‡	TO-8	55	25	3	20–60	0.75
2N1485‡	TO-8	40	25	3	35–100	0.75
2N1486‡	TO-8	55	25	3	35–100	0.75
2N1701	TO-8	40	25	2.5	20–80	0.3
2N3054	TO-66	55	25	4	20–100	0.5
2N3441*	TO-66	140	25	3	25–100	0.5
40368	TO-8	55	25	3	35–100	0.75
2N6260	TO-66	40	29	3	20–100	1.5
40250	TO-66	40	29	4	25–100	1.5
40310	TO-66	35	29	4	20–120	1
40312	TO-66	60§	29	4	20–120	1
40316	TO-66	60§	29	4	20–120	1
40324	TO-66	35	29	4	20–120	1
2N5293	TO-220	40	36	4	30–120	1
2N5294	TO-220	70	36	4	30–120	0.5
2N5295	TO-220	70	36	4	30–120	0.5
2N5296	TO-220	40	36	4	30–120	1
2N5297	TO-220	60	36	4	20–80	1.5
2N5298	TO-220	60	36	4	20–80	1.5
40613	TO-220	25	36	4	30–120	1
40618	TO-220	30	36	4	30–120	1
40621	TO-220	32	36	4	25–100	1.5
40622	TO-220	40	36	4	25–100	1.5
40629	TO-220	35§	36	4	20–70	1
40630	TO-220	40§	36	4	20–70	1.5
40631	TO-220	45§	36	4	20–70	2
2N6077	TO-66	300	45	7	12–70	1.2
2N6078	TO-66	275	45	7	12–70	1.2
2N6079	TO-66	375	45	7	12–70	1.2
40851	TO-66	375	45	7	12 min.	1.2
2N5490	TO-220	40	50	7	20–100	2
2N5491	TO-220	40	50	7	20–100	2
2N5492	TO-220	55	50	7	20–100	2.5
2N5493	TO-220	55	50	7	20–100	2.5
2N5494	TO-220	40	50	7	20–100	3
2N5495	TO-220	40	50	7	20–100	3
2N5496	TO-220	70	50	7	20–100	3.5
2N5497	TO-220	70	50	7	20–100	3.5
2N6261	TO-66	80	50	4	25–100	1.5
2N6264	TO-66	150	50	3	20–60	1
40624	TO-220	45	50	6	20–100	2.5
40627	TO-220	55	50	6	20–100	2.5
40632	TO-220	60§	50	6	20–70	3
40816	TO-220	45§	50	4	35–150	2
2N1487*	TO-3	40	75	6	15–45	1.5
2N1488*	TO-3	55	75	6	15–45	1.5
2N1489*	TO-3	40	75	6	25–75	1.5
2N1490*	TO-3	55	75	6	25–75	1.5
2N1702	TO-3	40	75	5	15–60	0.8
2N6098	TO-220	60	75	10	20–80	4
2N6099	TO-220	60	75	10	20–80	4
2N6100	TO-220	70	75	10	20–80	5
2N6101	TO-220	70	75	10	20–80	5
2N6102	TO-220	40	75	16	15–80	8
2N6103	TO-220	40	75	16	15–60	8
40369	TO-3	55	75	6	25–75	1.5
40884	TO-220	65	75	10	20–120	4
2N4347	TO-3	120	100	5	20–70	2
40854	TO-3	300	110	15	10 min.	10
2N3055‡	TO-3	60	115	15	20–70	4
2N6253	TO-3	45	115	15	20–70	3
40363	TO-3	70§	115	15	20–70	4
40636	TO-3	95§	115	15	20–70	4

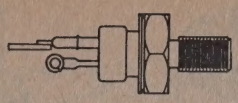
*JAN type available. †With factory attached heat radiator. ‡JAN and JANTX types available. §V_{CER}.

NPN—0.3 MHz to 3 MHz (f_T) continued on following page.

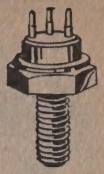
RCA Silicon Power Transistors

TO-39

TO-46


TO-48

TO-52


TO-60

SILICON POWER TRANSISTORS (CONTINUED)

NPN—0.3 MHz TO 3 MHz (fT) (CONT'D)

RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
RCA41/SDH	TO-220	40	75	16		
RCA41A/SDH	TO-220	60	75	10		
RCA41B/SDH	TO-220	80	75	10		
RCA3055	TO-220	60	75	15		
RCA5034	TO-219	40	83	6		
2N5035	TO-219	40	83	6		
2N5036	TO-219	50	83	8		
2N5037	TO-219	50	83	8		
40513	TO-219		83	6		
40514	TO-219		83	6		
40542	TO-3†	50	83	6		
40543	TO-3†	60	83	8		
2N4347	TO-3	120	100	5	20–70	2
41506	TO-3	200	100	3		
40854	TO-3	300	110	15	10 min.	10
2N3055‡	TO-3	60	115	15	20–70	4
2N6253	TO-3	45	115	15	20–70	3
40363	TO-3	70§	115	15	20–70	4
RCA1B01	TO-3	95	115	15		
RCS-242	TO-3	40	115	15		
2N3442*	TO-3	140	117	10	20–70	3
2N6371	TO-3	40	117	16		
40251	TO-3	40	117	15	15–60	8
40325	TO-3	35	117	15	50–60	8
2N4348	TO-3	120	120	10	15–60	5
RCA411	TO-3	300	125	7	30–90	1
2N2015*	TO-36	50	150	10	15–60	5
2N2016*	TO-36	65	150	10	15–60	5
2N2338	TO-36	40	150	7.5	15–60	3
2N3771‡	TO-3	40	150	30	15–60	15
2N3772‡	TO-3	60	150	20	15–60	10
2N3773	TO-3	140	150	16	15–60	8
2N6254	TO-3	80	150	15	20–70	5
2N6257	TO-3	40	150	20	15–75	8
2N6262	TO-3	150	150	10	20–70	3
40411	TO-3	90§	150	30	35–100	4
43104	TO-3	140	150	16		
2N6259	TO-3	150	250	16	15–60	8
40383	TO-3	100	250	16	30–150	6
RCS258	TO-3	60	250	20		
2N5575	TO-3	50	300	80	10–40	80
2N5578	TO-3	70	300	60	10–40	40

PNP—3 MHz TO 30 MHz (fT)

RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
41503	TO-39	−30	7	−1		
RCS880	TO-39	−150	7.5	−1		
RCS881	TO-39	−250	7.5	−1		
RCS882	TO-39	−300	7.5	−1		
2N5415	TO-5	−200	10	−1	30–150	−0.05
2N5416	TO-5	−300	10	−1	30–120	−0.05
2N5781	TO-5	−65	10	−3.5	20–100	−1
2N5782	TO-5	−50	10	−3.5	20–100	−1.2
2N5783	TO-5	−40	10	−3.5	20–100	−1.6
RCA1A10	TO-39	−175	10	−1		
RCA1A16	TO-39	−100	10	−1		
2N6211	TO-66	−225	20	−2	10–100	−1
2N6212	TO-66	−300	20	−2	10–100	−1
2N6213	TO-66	−350	20	−2	10–100	−1
2N6214	TO-66	−400	20	−2		
RCA30	TO-220	−40	30	−3		
RCA30A	TO-220	−60	30	−3		
RCA30B	TO-220	−80	30	−3		
RCA30C	TO-220	−100	30	−3		
RCS30	TO-66	−40	30	−3		
RCS30A	TO-66	−60	30	−3		
RCS30B	TO-66	−80	30	−3		
RCS30C	TO-66	−100	30	−3		
RCA1E03	TO-66	−175	35	−2		
RCS559	TO-66	−225	35	−2		
RCS560	TO-66	−200	35	−2		
2N6467	TO-66	−100	40	−4		
2N6468	TO-66	−120	40	−4		
2N6475	TO-220	−100	40	−4		
2N6476	TO-220	−120	40	−4		
2N6106	TO-220	−70	40	−7	30–150	−2
2N6107	TO-220	−70	40	−7	30–150	−2
2N6108	TO-220	−50	40	−7	30–150	−2.5

*JAN type available. †With factory attached heat skink. ‡JAN and JANTX types available. §VCER. #Similar to indicated package. ▲Plastic case. •With flange. ■VCES.

PNP—3MHz to 30MHz (fT) (CONT'D)

RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
2N6109	TO-220	−50	40	−7	30–150	−2.5
2N6110	TO-220	−30	40	−7	30–150	−3
2N6111	TO-220	−30	40	−7	30–150	−3
2N5954	TO-66	−75	40	−6	20–100	−2
2N5955	TO-66	−60	40	−6	20–100	−2.5
2N5956	TO-66	−40	40	−6	20–100	−3
40831	TO-66	−40	40	−6		
40830	TO-66	−60	40	−6		
40829	TO-66	−80	40	−6		
41501	TO-220	−25	40	−7		
RCA1C04	TO-220	−100	40	−4		
RCA1C06	TO-220	−50	40	−7		
RCA1C11	TO-220	−40	40	−7		
RCA1C13	TO-220	−120	40	−4		
RCA32	TO-220	−40	40	−5		
RCA32A	TO-220	−60	40	−5		
RCA32B	TO-220	−80	40	−5		
RCA32C	TO-220	−100	40	−5		
RCA370	TO-220	−30	40	−5	25 min.	−1
RCA371	TO-220	−40	40	−5	40 min.	−1
RCS32	TO-66	−40	40	−5		
RCS32A	TO-66	−60	40	−5		
RCS32B	TO-66	−80	40	−5		
RCS32C	TO-66	−100	40	−5		
RCA42	TO-220	−40	65	−7		
RCA42A	TO-220	−60	65	−7		
RCA42B	TO-220	−80	65	−7		
RCA42C	TO-220	−100	65	−7		
RCA105	TO-220	−50	65	−7	25–100	−2
2N6489	TO-220	−40	75	−15		
2N6490	TO-220	−60	75	−15		
2N6491	TO-220	−80	75	−15		
RCA1C08	TO-220	−65	75	−10		
RCA101	TO-220	−40	75	−7	25–150	−2
RCA102	TO-220	−60	75	−7	25–150	−2
RCA103	TO-220	−60	75	−7	30–150	−1
RCA104	TO-220	−80	75	−7	30–150	−1
2N6246	TO-3	−60	125	−15	20–100	−7
2N6247	TO-3	−80	125	−15	20–100	−6
2N6248	TO-3	−100	125	−15	20–100	−5

PNP—30 MHz TO 300 MHz (fT)

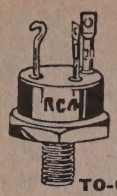
RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
40406	TO-5	−50	1	−0.7	30–200	−0.1
40410	TO-5†	−90§	3	−0.7	50–250	−0.15
40391	TO-5†	−40	3.5	−1	50–250	−0.15
40319	TO-5	−40	5	−0.7	35–200	−0.05
40362	TO-5	−70§	5	−0.7	35–200	−0.05
40537	TO-5	−55§	5	−0.7	15–90	−0.5
RCA1A05	TO-39	−75	5	−1		
2N4036	TO-5	−65	7	−1	40–140	−0.15
2N4037	TO-5	−40	7	−1	50–250	−0.15
2N4313	TO-5	−65	7	−1	50–250	−0.15
40394	TO-5	−40	7	−1	50–250	−0.15
RCA1A02	TO-39	−50	7	−1		
RCA1A08	TO-39	−40	7	−1		
RCA1A19	TO-39	−10	7	−1		
2N5322	TO-5	−75	10	−2	30–130	−0.5
2N5323	TO-5	−50	10	−2	40–250	−0.5
RCA1A04	TO-39	−95	10	−2		
RCP700A	A	−55	10	−2		
RCP700B	A	−85	10	−2		
RCP700C	A	−105	10	−2		
RCP700D	A	−125	10	−2		
RCP702A	A	−40	10	−2		
RCP702B	A	−60	10	−2		
RCP702C	A	−80	10	−2		
RCP702D	A	−100	10	−2		
RCP704	A	−30	10	−2		
RCP704B	A	−60	10	−2		
RCP706	A	−30	10	−2		
RCP706B	A	−60	10	−2		
2N6180	TO-5▲	−75	25	−2	30–130	−0.5
2N6181	TO-5▲	−50	25	−2	40–250	−0.5

*JAN type available. †With factory attached heat sink. ‡JAN and JANTX types available. §VCER. #Similar to indicated package. ▲Plastic case. •With flange. ■VCES.

Silicon Power Transistors continued on following pages.

SEE LAST PAGES OF LISTING FOR SEMICONDUCTOR PRICING

RCA Silicon Power Transistors



TO-63

TO-66

TO-72

TO-104

TO-201

SILICON POWER TRANSISTORS (CONTINUED)

NPN—30 MHz TO 300 MHz (fT)

RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
NPN—3 MHz TO 30 MHz (fT)						
40885	Plas.†	300	1.4	1	30–190	0.02
40886	Plas.†	350	1.4	1	30–150	0.02
40390	TO-5†	250	3.5	1	40–160	0.02
40321	TO-5	300§	5	0.5	25–200	0.02
40327	TO-5	300§	5	0.5	40–250	0.02
40374	TO-66†	175	5.8	2	40 min.	0.1
2N3439‡	TO-5	350	10	1	40–160	0.02
2N3440‡	TO-5	250	10	1	40–160	0.02
2N4063	TO-5†	350	10	1	40–160	0.02
2N4064	TO-5†	250	10	1	40–160	0.02
40346	TO-5	175§	10	1	25 min.	0.01
40385	TO-5	350	10	1	40–160	0.02
40412	TO-5	250	10	1	40 min.	0.03
RCA1A09	TO-39	175	10	1	.....	.....
RCA1A11	TO-39	175	10	1	.....	.....
RCA1A15	TO-39	100	10	1	.....	.....
2N6175	Plastic	300	20	1	30–190	0.02
2N6176	Plastic	350	20	1	30–150	0.02
2N6177	Plastic	400	20	1	40–160	0.02
40887	TO-5#	350	20	1	.....	.....
41505	TO-5#	200	20	1	.....	.....
RCA29	TO-220	40	30	3	.....	.....
RCA29A	TO-220	60	30	3	.....	.....
RCA29B	TO-220	80	30	3	.....	.....
RCA29C	TO-220	100	30	3	.....	.....
RCS29	TO-66	40	30	3	.....	.....
RCS29A	TO-66	60	30	3	.....	.....
RCS29B	TO-66	80	30	3	.....	.....
RCS29C	TO-66	100	30	3	.....	.....
2N3583	TO-66	175	35	2	10 min.	1
2N3584‡	TO-66†	250	35	2	25–100	1
2N3585‡	TO-66†	300	35	2	25–100	1
2N4240	TO-66	300	35	2	30–150	0.75
40313	TO-66	300	35	2	40–250	0.1
40318	TO-66	300	35	2	40 min.	0.02
40322	TO-66	300	35	2	40 min.	0.02
40850	TO-66	300	35	2	25 min.	0.75
RCA1E02	TO-66	175	35	2	.....	.....
2N6288	TO-220	30	40	7	30–150	2
2N6289	TO-220	30	40	7	30–150	2
2N6290	TO-220	50	40	7	30–150	2.5
2N6291	TO-220	50	40	7	30–150	2.5
2N6292	TO-220	70	40	7	30–150	3
2N6293	TO-220	70	40	7	30–150	3
2N6465	TO-66	100	40	4	.....	.....
2N6466	TO-66	120	40	4	.....	.....
2N6473	TO-220	100	40	4	.....	.....
2N6474	TO-220	120	40	4	.....	.....
41500	TO-220	25	40	7	.....	.....
RCA1C03	TO-220	100	40	4	.....	.....
RCA1C05	TO-220	50	40	7	.....	.....
RCA1C10	TO-220	40	40	7	.....	.....
RCA1C12	TO-220	120	40	4	.....	.....
RCA31	TO-220	40	40	5	.....	.....
RCA31A	TO-220	60	40	5	.....	.....
RCA31B	TO-220	80	40	5	.....	.....
RCA31C	TO-220	100	40	5	.....	.....
RCA520	TO-220	30	40	5	25 min.	1
RCA521	TO-220	40	40	5	40 min.	1
RCS31	TO-66	40	40	5	.....	.....
RCS31A	TO-66	60	40	5	.....	.....
RCS31B	TO-66	80	40	5	.....	.....
RCS31C	TO-66	100	40	5	.....	.....
RCA41	TO-220	40	65	7	.....	.....
RCA41A	TO-220	60	65	7	.....	.....
RCA41B	TO-220	80	65	7	.....	.....
RCA41C	TO-220	100	65	7	.....	.....
RCA205	TO-220	50	65	7	25–100	2
2N6486	TO-220	40	75	15	.....	.....
2N6487	TO-220	60	75	15	.....	.....
2N6488	TO-220	80	75	15	.....	.....
RCA201	TO-220	40	75	7	25–150	2
RCA202	TO-220	60	75	7	25–150	2
RCA203	TO-220	60	75	7	30–150	1
RCA204	TO-220	80	75	7	30–150	1
2N3263	Radial	90	84	25	25–75	15
2N3264	Radial	60	84	25	20–80	15

*JAN type available. †With factory attached heat skink. ‡JAN and JANTX types available. §VCER. #Similar to indicated package. ▲Plastic case. •With flange. ■VCES.

RCA Type	Pkg.	Maximum VCEO V	Maximum PT W	Maximum IC A	hFE at IC Min.-Max.	hFE at IC A
NPN—3 MHz to 30 MHz (fT) (CONT'D)						
2N5239	TO-3	225	100	5	20–80	2
2N5240	TO-3	300	100	5	20–80	2
2N5838	TO-3	250	100	5	10–50	3
2N5839	TO-3	275	100	5	10–50	2
2N5840	TO-3	350	100	5	10–50	2
40852	TO-3	350	100	7	12 min.	1.2
2N6510	TO-3	200	120	7	.....	.....
2N6511	TO-3	250	120	7	.....	.....
2N6512	TO-3	300	120	7	.....	.....
2N6513	TO-3	350	120	7	.....	.....
2N6514	TO-3	300	120	7	.....	.....
2N3265	TO-63	90	125	25	25–75	15
2N3266	TO-63	60	125	25	20–80	15
2N6306	TO-3	250	125	8	.....	.....
2N6307	TO-3	300	125	8	.....	.....
2N6308	TO-3	350	125	8	.....	.....
2N6470	TO-3	40	125	15	.....	.....
2N6471	TO-3	60	125	15	.....	.....
2N6472	TO-3	80	125	15	.....	.....
RCA410	TO-3	200	125	7	30–90	1
RCA413	TO-3	325	125	7	20–80	0.5
RCA423	TO-3	325	125	7	30–90	1
RCA431	TO-3	325	125	7	15–35	2.5
RCS579	TO-3	250	125	8	.....	.....
RCA1B04	TO-3	200	150	7	.....	.....
RCA1B05	TO-3	250	150	7	.....	.....
RCA1B06	TO-3	100	150	7	.....	.....
2N6249	TO-3	200	175	10	20–100	3
2N6250	TO-3	275	175	10	20–100	3
2N6251	TO-3	350	175	10	20–100	3
RCS564	TO-3	200	175	10	.....	.....
NPN 30 MHz TO 300 MHz (fT)						
40407	TO-5	50	1	0.7	40–200	0.001
40408	TO-5	90	1	0.7	40–200	0.001
2N697	TO-5	40§	2	0.5	40–120	0.15
2N699	TO-5	80§	2	0.5	40–120	0.15
2N1613	TO-5	50§	3	1	40–120	0.15
2N1711	TO-5	50§	3	1	100–300	0.15
2N1893	TO-5	80■	3	0.5	40–120	0.15
40409	TO-5†	90§	3	0.7	50–250	0.15
40389	TO-5†	40	3.5	0.7	50–200	0.15
2N2102	TO-5	65	5	1	40–200	0.15
2N2270	TO-5	45	5	1	50–200	0.15
2N2405	TO-5	90	5	1	60–200	0.15
2N3053	TO-5	40	5	0.7	50–200	0.15
40311	TO-5	30	5	0.7	70–350	0.05
40314	TO-5	40	5	0.7	70–350	0.05
40317	TO-5	40	5	0.7	40–200	0.01
40361	TO-5	70§	5	0.7	70–350	0.05
40366	TO-5	65	5	1	40–120	0.15
40539	TO-5	65§	5	0.7	15–90	0.5
RCA1A01	TO-39	70	5	1	.....	.....
RCA1A06	TO-39	75	5	1	.....	.....
RCA1A07	TO-39	50	5	1	.....	.....
RCA1A17	TO-39	90	5	1	.....	.....
40375	TO-66†	50	5.8	7	50–200	0.5
RCP111A	TO-220#	200	6.25	.15	.....	.....
RCP111B	TO-220#	250	6.25	.15	.....	.....
RCP111C	TO-220#	300	6.25	.15	.....	.....
RCP111D	TO-220#	350	6.25	.15	.....	.....
RCP113A	TO-220#	200	6.25	.15	.....	.....
RCP113B	TO-220#	250	6.25	.15	.....	.....
RCP113C	TO-220#	300	6.25	.15	.....	.....
RCP113D	TO-220#	350	6.25	.15	.....	.....
RCP115	TO-220#	100	6.25	.15	.....	.....
RCP115B	TO-220#	250	6.25	.15	.....	.....
RCP117	TO-220#	100	6.25	.15	.....	.....
RCP117B	TO-220#	250	6.25	.15	.....	.....
40392	TO-5•	40	7	0.7	50–200	0.15
RCA1A18	TO-39	10	7	1	.....	.....
2N5320	TO-5	75	10	2	30–130	0.5
2N5321	TO-5	50	10	2	40–250	0.5
RCA1A03	TO-39	95	10	2	.....	.....

*JAN type available. †With factory attached heat sink. ‡JAN and JANTX types available. §VCER. #Similar to indicated package. ▲Plastic case. •With flange. ■VCES.

Silicon Power Transistors continued on following page.

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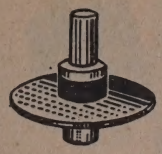
RCA Silicon Power and RF Power Transistors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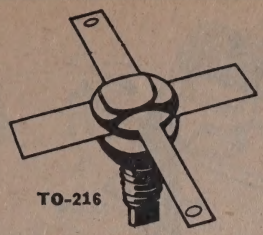
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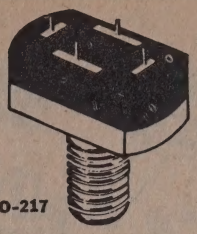
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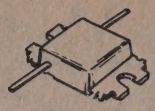
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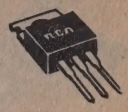

TO-220

NPN—30 MHz TO 300 Hz (f_T)

RCA Type	Pkg.	Maximum V_{CEO} V	Maximum P_T W	Maximum I_C A	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A
RCP701A	TO-220#	55	10	2	.....	.....
RCP701B	TO-220#	85	10	2	.....	.....
RCP701C	TO-220#	105	10	2	.....	.....
RCP701D	TO-220#	125	10	2	.....	.....
RCP703A	TO-220#	40	10	2	.....	.....
RCP703B	TO-220#	60	10	2	.....	.....
RCP703C	TO-220#	80	10	2	.....	.....
RCP703D	TO-220#	100	10	2	.....	.....
RCP705	TO-220#	30	10	2	.....	.....
RCP705B	TO-220#	60	10	2	.....	.....
RCP707	TO-220#	30	10	2	.....	.....
RCP707B	TO-220#	60	10	2	.....	.....
2N6178	TO-5▲	75	25	−2	30–130	0.5
2N6179	TO-5▲	50	25	−2	40–250	0.5
2N3878	TO-66	50	35	7	50–200	0.5
2N3879	TO-66	75	35	7	20–80	4
2N5202	TO-66	75§	35	4	10–100	4
2N6500	TO-66	90	35	4	.....	.....
2N6479	Radial	60	87	12	.....	.....
2N6480	Radial	80	87	12	.....	.....
2N6481	Radial	60	117	12	.....	.....
2N6482	Radial	80	117	12	.....	.....
2N5038‡	TO-3	90	140	20	50–200	2
2N5039‡	TO-3	75	140	20	30–150	2
2N5671	TO-3	90	140	30	20–100	15
2N5672	TO-3	120	140	30	20–100	15
2N6032	TO-3#	90	140	50	10–50	50
2N6033	TO-3#	120	140	40	10–50	40
2N6354	TO-3	120	140	10	20–150	5.0
2N6496	TO-3	110	140	15	.....	.....

‡JAN and JAN TX types available. #Similar to indicated package. ▲Plastic case §V_{CER}

SILICON POWER DARLINGTON TRANSISTORS

NPN—h_{FE} to 20,000

RCA Type	Pkg.	V_{CEO} V	P_T W	h_{FE} Max.
2N6534	TO-66	80	36	10,000
2N6535	TO-66	100	36	10,000
2N6536	TO-66	100	36	10,000
2N6537	TO-66	120	36	10,000
2N6386	TO-220	40	40	20,000
2N6387	TO-220	60	40	20,000
2N6388	TO-220	80	40	20,000
RCA120	TO-220	60	60	1,000
RCA121	TO-220	80	60	1,000
RCA122	TO-220	100	60	1,000
2N6530	TO-220	80	65	10,000
2N6531	TO-220	100	65	10,000
2N6532	TO-220	100	65	10,000
2N6533	TO-220	120	65	10,000
RCA1000	TO-3	60	90	1,000
RCA1001	TO-3	80	90	1,000
2N5055	TO-3	60	100	18,000
2N5056	TO-3	80	100	18,000
2N6383	TO-3	40	100	20,000
2N6384	TO-3	60	100	20,000
2N6385	TO-3	80	100	20,000
RCA1B07	TO-3	80	100	15,000

PNP—h_{FE} to 20,000

RCA Type	Pkg.	V_{CEO} V	P_T W	h_{FE} Max.
RCA125	TO-220	−60	60	1,000
RCA126	TO-220	−80	60	1,000
RCA8203	TO-220	−40	60	20,000
RCA8203A	TO-220	−60	60	20,000
RCA8203B	TO-220	−80	60	20,000
RCA8350	TO-3	−40	70	20,000
RCA8350A	TO-3	−60	70	20,000
RCA8350B	TO-3	−80	70	20,000
RCA1B08	TO-3	−80	100	15,000

NPN SILICON RF POWER TRANSISTORS

Power output and gain ratings given are minimum.

SSB (2-30 MHz) AND MILITARY (30-76 MHz)

RCA Type	Pkg.	Operating Frequency MHz	Power Output W	Collector Supply Voltage	Power Gain dB
40082	TO-39	30	2.5 (PEP)	12.5	10
40936	TO-60	30	20 (PEP)	28	13
2N5070	TO-60	30	25 (PEP)	28	13
2N6093	TO-217	30	75 (PEP)	28	13
2N3118	TO-5	50	1	28	.....
2N3119	TO-5	50	1	28	.....
2N2631	TO-39	50	7.5	28	.....
2N2876	TO-60	50	10	28	.....
2N3229	TO-60	50	15	50	.....
2N1491	TO-5	70	0.01	20	13
2N1492	TO-5	70	0.1	30	13
2N1493	TO-5	70	0.5	50	10
2N5071	TO-60	76	24	24	9
2N3553	TO-39	175	2.5	28	.....
2N3632	TO-60	175	13.5	28	.....
40665	TO-60	175	13.5	28	.....
2N5090	TO-60	400	1.2	28	7.8
2N3375	TO-60	400	2.5	28	.....
40666	TO-60	400	3	28	.....
2N4440	TO-60	400	5	28	.....
2N3733	TO-60	400	10	28	.....
2N4012	TO-60	1000	2.5*	28	4*

CITIZENS BAND (27 MHz)

40080	TO-5	27	0.1	12	.....
40081	TO-5	27	0.4	12	.....
40082	TO-39	27	3	12	.....
40446	TO-39●	27	3	12	.....
40581	TO-39	27	3.5	12	.....
40582	TO-39●	27	3.5	12	.....

MOBILE RADIO (50-88 MHz)

2N4932	TO-60	88	12	13.5	5.3
2N4933	TO-60	88	20	24	7.5
40340	TO-60	50	25	13.5	7
40341	TO-60	50	30	24	10

*As tripler. †With factory attached flange.

MOBILE RADIO (148-175 MHz)

RCA Type	Pkg.	Operating Frequency MHz	Power Output W	Collector Supply Voltage	Power Gain dB
40972	TO-39	175	1.75	12.5	12.4

MOBILE RADIO (450-470 MHz)

2N5914	TO-216	470	2	12.5	7
2N5915	TO-216	470	6	12.5	4.8
40968	TO-216	470	6	12.5	.....

AIRCRAFT RADIO (108-156 MHz)

2N5102	TO-60	136	15	24	4
40290	TO-39	136	2	12.5	6
40291	TO-60	136	2	12.5	6
40292	TO-60	136	6	12.5	4.8
40975	TO-39	118	0.05	12.5	10
40976	TO-39	118	0.5	12.5	10
40977	TO-216	118	6	12.5	10.8

MARINE RADIO (108-156 MHz)

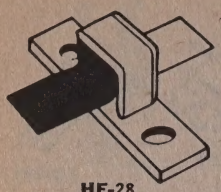
40953	TO-39	156	2	12.5	13

UHF MILITARY (225-400 MHz)

2N3866	TO-39	400	1	28	10
2N5916	TO-216	400	2	28	10
2N5917	HF-31	400	2	28	10
2N5918	TO-216	400	10	28	8
2N5016	TO-60	400	15	28	5
2N5919A	TO-216	400	16	28	6
2N6104	HF-32	400	30	28	5
2N6105	TO-216	400	30	28	5

SEE LAST PAGES OF LISTING FOR SEMICONDUCTOR PRICING

RCA Silicon RF Power Transistors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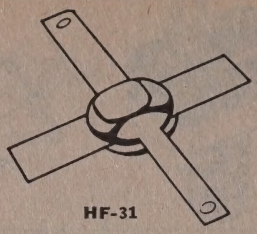
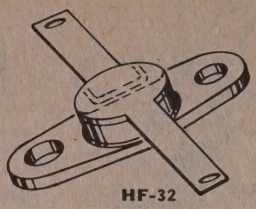
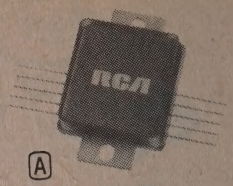

HF-31


HF-32



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NPN SILICON TRANSISTORS (CONTINUED)

RF POWER MICROWAVE

Collector supply voltage 28 V except as otherwise noted.

RCA Type	Pkg.	Operating Frequency GHz	Min. Power Output W	Min. Power Gain dB	Collector Efficiency %
2N5108	TO-39	1	1	5	35
41024	TO-39	1	1	5	35
41038	TO-46	1.68	0.75	.....	20
40836	TO-215	2	0.5	.....	20*
2N5470	TO-215	2	1	5	30
40837	TO-215	2	1.25	.....	20
2N5920	TO-215	2	2	10	40
2N6265	HF-28	2	2	8.2	33
40909	TO-201	2	2	.....	20†
2N5921	TO-201	2	5	7	40
2N6266	HF-28	2	5	7	33
2N6267	HF-28	2	10	7	35
2N6268	HF-28	2.3	2	7	33‡
40898	TO-215	2.3	2	7	35‡
40899	TO-201	2.3	6	6	35‡
2N6269	HF-28	2.3	6.5	5	32‡

*Collector supply voltage: 21 V; †25 V; ‡22 V.

RF POWER HIGH-SPEED SWITCHING

RCA Type	Pkg.	Switching Time t_{on} nsec	Switching Time t_{off} nsec	Collector Supply V	Min. f_T MHz
2N3119	TO-5	40	700	28	250
2N3262	TO-39	40	750	28	150

RF SMALL-SIGNAL, LOW-NOISE AND CATV/MATV

Power gain rating is minimum.

RCA Type	Pkg.	Operating Frequency MHz	NF dB	V_{CE} V	Power Gain dB
2N918	TO-72	60	6	6	13
2N3478	TO-72	200	4.5	6	12
2N5180	TO-72	200	4.5	10	15
2N3600	TO-72	200	4.5	15	17
2N5109	TO-39	200	3	15	11
2N5179	TO-72	200	4.5	6	15
40608	TO-39	200	3	15	11
40894	TO-72	200	3	12	15
40895	TO-72	200	.....	12	15
40896	TO-72	200	.....	12	15
40897	TO-72	200	.....	12	18
2N2857	TO-72	450	4.5	6	12.5
2N3839	TO-72	450	3.9	6	12.5
40915	TO-72	450	2.5	10	11
2N6389	TO-72	890	4	10	15

POWER HYBRID OPERATIONAL AMPLIFIERS

RCA Type	Pkg.	Supply Voltage V.	P_T Max. W.	Output Current
HC2000H	A	75	100	7
HC2500	A	75	100	7

HIGH RELIABILITY RF POWER TRANSISTORS

RCA Type JAN-	Pkg.	High-Reliability Version of 2N	RCA Type HR2N-	Pkg.	High-Reliability Version of 2N-
2N918	TO-72	918	2857/	TO-72	2857
2N1493	TO-39	1493	3375/	TO-60	3375
2N2857	TO-72	2857	3553/	TO-39	3553
TX2N2857	TO-72	2857	3632/	TO-60	3632
TXV2N2857	TO-72	2857	3866	TO-39	3866
2N3375	TO-60	3375	5090	TO-60	5090
TX2N3375	TO-60	3375	-5470	TO-215	5470
TXV2N3375	TO-60	3375	5916	TO-39	5916
2N3553	TO-39	3553	5918	TO-215	5918
TX2N3553	TO-39	3553	5919A	HF-31	5919A
TXV2N3553	TO-39	3553	5920	HF-31	5920
2N3866	TO-39	3866	5921	HF-31	5921
TX2N3866	TO-39	3866	6105	TO-201	6105
TXV2N3866	TO-39	3866	6265	HF-28	6265
2N4440	TO-60	4440	6266	HF-28	6266
TX2N4440	TO-60	4440	6267	HF-28	6267
TXV2N4440	TO-60	4440	6268	HF-28	6268
2N5071	TO-60	5071	6269	HF-28	6269
TX2N5071	TO-60	5071			
2N5090(E)	TO-60	5090			
2N5109	TO-39	5109			
TX2N5109	TO-39	5109			
2N5918	HF-31	5918			
TX2N5918	HF-31	5918			
2N5919A	HF-31	5919A			
TX2N5919A	HF-31	5919A			

RCA Type	Pkg.	High-Reliability Version of 2N
40294	TO-72	2857
40296	TO-72	2857
40414	TO-72	2857
40577	TO-5	3118
40279	TO-6	3375
40306	TO-60	3375
40605	TO-39	3553
40305	TO-39	3553
40307	TO-60	3632
40606	TO-60	3632
40578	TO-39	3866

CHIPS

Chips, also known as pellets or dies, represent the electronic portion of the transistor.

NPN SILICON POWER CHIPS

RCA Chip No.	RCA Family Transistor	Min. V_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C A
CH3439	2N3439	325	30	0.02
CH3440	2N3440	250	30	0.02
CH3053	2N3053	30	50	0.25
CH2270	2N2270	45	50	0.25
CH2102	2N2102	60	50	0.25
CH2405	2N2405	90	50	0.25
CH5321	2N5321	55	30	0.25
CH5320	2N5320	80	30	0.25

PNP SILICON POWER CHIPS

CH4037	2N4037	−40	35	−0.175
CH4036	2N4036	−65	35	−0.175
CH5323	2N5323	−55	30	−0.25
CH5322	2N5322	−80	30	−0.25

SEE LAST PAGES OF LISTING FOR SEMICONDUCTOR PRICING

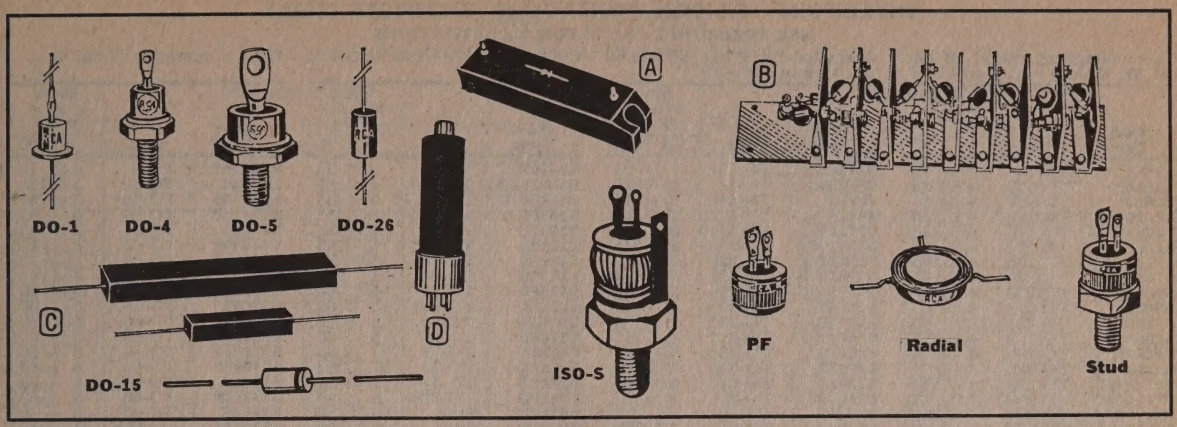
RCA IS CONSTANTLY ADDING NEW

SEMICONDUCTOR AND INTEGRATED CIRCUIT DEVICES.

AS THESE BECOME AVAILABLE

WE WILL HAVE THEM IN STOCK.

RCA Silicon Triacs



THYRISTORS—SILICON TRIACS

Low voltage operation 50 and 60 Hz; V_{DROM} = 100 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
2N5754A	TO-5	2.5	70
T2310A	TO-5*	1.6	25
T2311A	TO-5*	1.6	25
T2312A	TO-5*	1.9	25
T2313A	TO-5*	1.9	25
2N5754	TO-5	2.5	70
T2300A	TO-5	2.5	60
T2302A	TO-5	2.5	70
T2316A	TO-5*	2.5	70
T2306A	TO-5	2.5	70
T2301A	TO-5	2.5	60
T2850A	TO-220	8	75

Line operation 120 V, 50 and 60 Hz; V_{DROM} = 200 V.

T2310B	TO-5*	1.6	25
T2311B	TO-5*	1.6	25
T2312B	TO-5*	1.9	25
T2313B	TO-5*	1.9	25
2N5755	TO-5	2.5	70
T2300B	TO-5	2.5	60
T2302B	TO-5	2.5	70
T2301B	TO-5	2.5	60
T2316B	TO-5*	2.5	70
T2306B	TO-5	2.5	70
T2710B	TO-66	3.3	25
T2700B 40429	TO-66	6	75
40431†	TO-5	6	75
T2706B	TO-66	6	75
T2716B	TO-66*	6	75
T2500B	TO-220	6	80
T2801B	TO-220	6	80
T2850B	TO-220	8	75
T2802B	TO-220	8	80
40901	TO-220	8	75
T2800B	TO-220	8	80
T2806B	TO-220	8	80
2N5567	PF	10	85
2N5569	Stud	10	85
T4107B	PF	10	85
T4117B	Stud	10	85
T4121B	ISO-S	10	85
2N5571	PF	15	80
2N5573	Stud	15	80
T4700B	TO-66	15	70
T4106B	PF	15	80
T4116B	Stud	15	80
T4706B	TO-66	15	70
T4120B	ISO-S	15	75
T6401B	PF	30	65

Line operation 120 V (Cont'd)

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
T6411B	Stud	30	60
T6407B	PF	30	65
T6417B	Stud	30	60
T6421B	ISO-S	30	55
2N5441	PF	40	70
2N5444	Stud	40	65
T6420B	ISO-S	40	60
T6406B	PF	40	70
T6416B	Stud	40	65
T8401B	PF	60	85
T8411B	Stud	60	80
T8421B	ISO-S	60	75
T8430B	Stud	80	65
T8440B	Stud	80	65
T8450B	ISO-S	80	65
40916	PF	80	75
40919	Stud	80	65
40922	ISO-S	80	55

Line operation 240 V, 50 and 60 Hz; V_{DROM} = 300-400 V.

T2310D	TO-5*	1.6	25
T2311D	TO-5*	1.6	25
T2312D	TO-5*	1.9	25
T2313D	TO-5*	1.9	25
2N5756	TO-5	2.5	70
T2300D	TO-5	2.5	60
T2301D	TO-5	2.5	60
T2316D	TO-5*	2.5	70
T2306D	TO-5	2.5	70
T2312D	TO-5	2.5	60
T2710D	TO-66	3.3	25
T2700D	TO-66	6	75
T2706D	TO-66	6	75
T2716D	TO-66*	6	75
40842	TO-220	6	80
T2500D	TO-220	6	80
T2801C	TO-220	6	80
T2801D	TO-220	6	80
T2802C	TO-220	8	80
T2802D	TO-220	8	80
T2800C	TO-220	8	80
T2850D	TO-220	8	75
40902	TO-220	8	75
T2800D	TO-220	8	80
T2806D	TO-220	8	80
2N5568	PF	10	85
2N5570	Stud	10	85
T4107D	PF	10	85
T4117D	Stud	10	85
T4121D	ISO-S	10	85

Line operation 240 V (Cont'd)

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
2N5572	PF	15	80
2N5574	Stud	15	80
T4106D	PF	15	80
T4116D	Stud	15	80
T4706D	TO-66	15	70
T4120D	ISO-S	15	75
T4700D	TO-66	15	70
T6401D	PF	30	65
T6411D	Stud	30	60
T6407D	PF	30	65
T6417D	Stud	30	60
T6421D	ISO-S	30	55
2N5542	PF	40	70
2N5545	Stud	40	65
T6420D	ISO-S	40	60
T6406D	PF	40	70
T6416D	Stud	40	65
T8421D	ISO-S	60	75
T8411D	Stud	60	80
T8401D	PF	60	85
T8450D	ISO-S	80	55
T8440D	Stud	80	65
T8430D	PS	80	75

High voltage operation 50 and 60 Hz; V_{DROM} = 500-600 V.

T2313M	TO-5*	1.9	25
2N5757	TO-5	2.5	70
T2801E	TO-220	6	80
T2800M	TO-220	8	80
T2800E	TO-220	8	80
T2802E	TO-220	8	80
T2802M	TO-220	8	80
T4101M	PF	10	85
T4111M	Stud	10	85
T4121M	ISO-S	10	85
T4100M	PF	15	80
T4101M	Stud	15	80
T4120M	ISO-S	15	75
T6401M	PF	30	65
T6411M	Stud	30	60
T6407M	PF	30	65
T6417M	Stud	30	60
T6421M	ISO-S	30	55
2N5443	PF	40	70
2N5446	Stud	40	65
T6420M	ISO-S	40	60

High voltage operatiau 50 and 60

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
T6406M	PF	40	70
T6416M	Stud	40	65
T8401M	PF	60	85
T8411M	Stud	60	80
T8421M	ISO-S	60	75
T8430M	PF	80	75
T8430M	PF	80	75
T8440M	Stud	80	65
T8450M	ISO-S	80	55

High Voltage operation 50 and 60 Hz; V_{DROM} = 800 V.

T6400N	PF	40	70
T6410N	Stud	40	65
T6420N	ISO-S	40	60

Service, 400 Hz; V_{DROM} = 200 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
T2304B	TO-5	0.5	90
T2305B	TO-5	0.5	90
T4105B	PF	6	90
T4115B	Stud	6	90
T4104B	PF	10	85
T4114B	Stud	10	85
T4103B	PF	15	80
T4113B	Stud	15	80
T6405B	PF	25	85
T6415B	Stud	25	80
T6404B	PF	40	70
T6414B	Stud	40	65

Service, 400 Hz; V_{DROM} = 400 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
T2304D	TO-5	0.5	90
T2305D	TO-5	0.5	90
T4105D	PF	6	90
T4115D	Stud	6	90
T4104D	PF	10	85
T4114D	Stud	10	85
T4103D	PF	15	80
T4113D	Stud	15	80
T6405D	PF	25	85
T6415D	Stud	25	80
T6404D	PF	40	70
T6414D	Stud	40	65

*With factory attached heat radiator. †Integral trigger. ‡With factory attached heat spreader.

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OUR STOCKS ARE ALWAYS KEPT COMPLETE AND UP-TO-DATE.

ASK FOR INFORMATION ON ANY NEW OR UNLISTED PRODUCTS.

THYRISTORS—SILICON CONTROLLED RECTIFIERS (SCRs)

SEE PRECEDING PAGES FOR ILLUSTRATIONS

Low voltage operation 50 and 60 Hz; V_{DROM} = 25 V to 150 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
40810	TO-5	2.5	75
S2060A	TO-220	4	85
S2060F	TO-220	4	85
S2060Y	TO-220	4	85
S2061A	TO-220	4	85
S2061F	TO-220	4	85
S2061Y	TO-220	4	85
S2062A	TO-220	4	85
S2062F	TO-220	4	85
S2062Y	TO-220	4	85
S2060Q	TO-220	4	85
S2061Q	TO-220	4	85
S2062Q	TO-220	4	85
RCA106A	TO-220	4	85
RCA106F	TO-220	4	85
RCA106Q	TO-220	4	85
RCA106Y	TO-220	4	85
RCA107A	TO-220	4	85
RCA107F	TO-220	4	85
RCA107Q	TO-220	4	85
RCA107Y	TO-220	4	85
S2400A	TO-8	4.5	75
S3704A	TO-66	5	60
S314A	TO-66†	5	60
S2800A	TO-220	8	80
2N3668	TO-3	12.5	80
2N1842A	TO-48	16	80
2N1843A	TO-48	16	80
2N1844A	TO-48	16	80
2N1845A	TO-48	16	80
S6200A	PF	20	75
S6210A	Stud	20	75
S6220A	ISO-S	20	75
2N681	TO-48	25	65
2N682	TO-48	25	65
2N683	TO-48	25	65
2N684	TO-48	25	65
2N3654	TO-48	35	40
2N3655	TO-48	35	40
2N3650	TO-48	35	40
2N3870	PF	35	65
2N3896	Stud	35	65
S6420A	ISO-S	35	60

Operation 120 V line, 50 and 60 Hz; V_{DROM} = 200-300 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
S2710B	TO-66*	1.7	25
2N3528	TO-8	2	25
40507	TO-5†	2	25
40811	TO-5	2.5	75
S2610B	TO-5*	3.3	25
RCA106B	TO-220	4	85
RCA106C	TO-220	4	85
RCA107B	TO-220	4	85
RCA107C	TO-220	4	85
S2060B	TO-220	4	85
S2060C	TO-220	4	85
S2061B	TO-220	4	85
S2061C	TO-220	4	85
S2062B	TO-220	4	85
S2063C	TO-220	4	85
S2400B	TO-8	4.5	75
2N3228	TO-66	5	75
S2400B	TO-8	4.5	75
S3704B	TO-66	5	60
S3714B	TO-66†	5	60
S3700B	TO-66	5	60
S2600B	TO-5†	7	60
S2620B	TO-5‡	7	50
S2800B	TO-220	8	80
S5210B	Stud	10	85
2N3669	TO-3	12.5	80
2N1846A	TO-48	16	80
S6200B	PF	20	75
S6210B	Stud	20	75
S6220B	ISO-S	20	75
2N685	TO-48	25	65
2N3656	TO-48	35	40
2N3657	TO-48	35	40
2N3651	TO-48	35	40
2N3871	PF	35	65
2N3897	Stud	35	65
S6420B	ISO-S	35	60

Operation 240 V line, 50 and 60 Hz; V_{DROM} = 400 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
S2610D	TO-5†	1.5	25
S2710M	TO-66*	1.7	25
2N3529	TO-8	2	25
40508	TO-5†	2	25
40812	TO-5	2.5	75

Operation 240 V line (Cont'd)

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
S2610D	TO-5*	3.3	25
RCA106D	TO-220	4	85
RCA107D	TO-220	4	85
S2060D	TO-220	4	85
S2061D	TO-220	4	85
S2062D	TO-220	4	85
S2400D	TO-8	4.5	75
S3800D	TO-66	5	60
S3704D	TO-66	5	60
S3714D	TO-66†	5	60
2N3525	TO-66	5	75
S3700D	TO-66	5	60
40379	TO-5†	7	65
S2600D	TO-5†	7	60
S2620D	TO-5†	7	50
S2800D	TO-220	8	80
S5210D	Stud	10	85
2N3670	TO-3	12.5	80
2N1849A	TO-48	16	80
S6200D	PF	20	75
S6210D	Stud	20	75
S6220D	ISO-S	20	75
2N688	TO-48	25	65
2N3658	TO-48	35	40
2N3653	TO-48	35	40
2N3872	PF	35	65
2N3898	Stud	35	65
S6420D	ISO-S	35	60

High voltage operation 50 and 60 Hz; V_{DROM} = 500 V to 800 V.

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
S2610M	TO-5†	1.5	2.5
S2710M	TO-66*	1.7	25
2N4102	TO-8	2	25
40813	TO-5	2.5	75
40888§	TO-66	3.2	60
40889§	TO-66	3.2	60
RCA106E	TO-220	4	85
RCA106M	TO-220	4	85
RCA107E	TO-220	4	85
RCA107M	TO-220	4	85
S2060E	TO-220	4	85
S2060M	TO-220	4	85
S2061E	TO-220	4	85
S2061M	TO-220	4	85
S2062M	TO-220	4	85
S2062E	TO-220	4	85

High V operation (Cont'd)

RCA Type	Pkg.	Max. $I_{T(rms)}$ at T_C A	°C
S2400M	TO-8	4.5	75
2N4101	TO-66	5	75
S3700M	TO-66	5	60
S3703SF	TO-66	5	60
S3702S	TO-66	5	60
S3701M	TO-66	5	25
S3800SF	TO-66	5	60
S3800MF	TO-66	5	60
S3800E	TO-66	5	60
S3800S	TO-66	5	60
S3800M	TO-66	5	60
S3800EF	TO-66	5	60
S3700M	TO-66	5	60
S3704M	TO-66	5	60
S3704S	TO-66†	5	60
S3705M	TO-66	5	60
S3706E	TO-66	5	60
S3714M	TO-66†	5	60
S3714S	TO-66†	5	60
S2600M	TO-5†	7	60
S2620M	TO-5‡	7	50
S5210M	Stud	10	85
2N4103	TO-3	12.5	80
2N1847A	TO-48	16	80
2N1848A	TO-48	16	80
2N1850A	TO-48	16	80
S6200M	PF	20	75
S6210M	Stud	20	75
S6220M	ISO-S	20	75
2N686	TO-48	25	65
2N687	TO-48	25	65
2N689	TO-48	25	65
2N690	TO-48	25	65
S7432M	TO-48	35	40
2N3652	TO-48	35	40
2N3873	PF	35	65
2N3899	Stud	35	65
S6434M	TO-48	35	60
S6420M	ISO-S	35	60
S7430M	TO-48	35	40
S6400N	PF	35	65
S6401N	Stud	35	65
S6420N	ISO-S	35	60

*With factory attached heat radiator. †Similar to indicated package. ‡With factory attached heat spreader. §Intended for horizontal-deflection service.

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SILICON RECTIFIERS

SEE PRECEDING PAGES FOR ILLUSTRATIONS

LOW CURRENT

I_O at T_A = 150° C.

RCA Type	Pkg.	Maximum V_{RRM} V	Maximum I_O A
D3202Y	DO-15	35	0.19
D3202U	DO-15	40	0.19
D1300A	TO-1	100	0.25
D1300B	TO-1	200	0.25
D1300D	TO-1	400	0.25
1N440B	DO-1	100	0.25
1N441B	DO-1	200	0.25
1N442B	DO-1	300	0.25
1N443B	DO-1	400	0.25
1N536	DO-1	50	0.25
1N537	DO-1	100	0.25
1N538	DO-1	200	0.25
1N539	DO-1	300	0.25
1N540	DO-1	400	0.25
1N547	DO-1	600	0.25
1N1095	DO-1	500	0.25
1N4458	DO-1	600	0.4
1N444B	DO-1	500	0.425

I_O at T_A = 75° C.

RCA Type	Pkg.	Maximum V_{RRM} V	Maximum I_O A
1N3563	DO-26	1000	0.4
1N3196	DO-26	800	0.5
1N3256	DO-26	800	0.5
40892	DO-1	700	0.6‡
1N3193	DO-26	200	0.75
1N3194	DO-26	400	0.75
1N3195	DO-26	600	0.75
1N3253	DO-26	200	0.75
1N3254	DO-26	400	0.75
1N3255	DO-26	600	0.75
1N5214	DO-26	800	0.75
1N5218	DO-26	800	0.75
1N1763A	DO-1	400	1
1N1764A	DO-1	500	1
1N2858A	DO-1	50	1

*Similar to indicated package. #T_J = 150° C.

†T_A = 65° C ;‡45° C; §105° C.

I_O at T_A = 75° C (Cont'd)

RCA Type	Pkg.	Maximum V_{RRM} V	Maximum I_O A
1N2859A	DO-1	100	1
1N2860A	DO-1	200	1
1N2861A	DO-1	300	1
1N2862A	DO-1	400	1
1N2863A	DO-1	500	1
1N2864A	DO-1	600	1
1N5211	DO-26	200	1
1N5212	DO-26	400	1
1N5213	DO-26	600	1
1N5215	DO-26	200	1
1N5216	DO-26	400	1
1N5217	DO-26	600	1
D2101S	DO-1	700	1
D2201F	DO-15	50	1
D2201A	DO-15	100	1
D2201B	DO-15	200	1
D2201D	DO-15	400	1
D2201M	DO-15	600	1
D2201N	DO-15	800	1
D2601B	DO-26	200	1
D2601D	DO-26	400	1
D2601M	DO-26	600	1
D2601N	DO-26	800	1
D2601A	DO-26	100	1
D2601F	DO-26	50	1
D1201F	Plas.	50	1
D1201A	Plas.	100	1
D1201B	Plas.	200	1
D1201D	Plas.	400	1
D1201M	Plas.	600	1
D1201N	Plas.	800	1
D1201P	Plas.	1000	1

I_O at T_A = 70° C.

RCA Type	Pkg.		
1N5391	DO-15	50	1.5
1N5392	DO-15	100	1.5
1N5393	DO-15	200	1.5
1N5394	DO-15	300	1.5
1N5395	DO-15	400	1.5
1N5396	DO-15	500	1.5
1N5397	DO-15	600	1.5
1N5398	DO-15	800	1.5
1N5399	DO-15	1000	1.5
D2601E	DO-26	500	1.6
D2600M	DO-26	600	1.9
D2103SF	DO-1	750	2#
D2103S	DO-1	700	2#

HIGH CURRENT

I_O at T_C = 150° C except 1N1612 thru 1N1616, T_C = 135° C. Also available in reverse polarity, add suffix **R** (1N1612**R**, 40108**R**).

RCA Type	Pkg.	Maximum V_{RRM} V	Maximum I_O A
D2103S	DO-1	700	3
D2103SF	DO-1	750	3
1N1341B	DO-4	50	6
1N1342B	DO-4	100	6
1N1344B	DO-4	200	6
1N1345B	DO-4	300	6
1N1346B	DO-4	400	6
1N1347B	DO-4	500	6
1N1348B	DO-4	600	6
D2406F	DO-4	50	6
D2406A	DO-4	100	6
D2406B	DO-4	200	6
D2406C	DO-4	300	6
D2406D	DO-4	400	6
D2406M	DO-4	600	6
1N3880	DO-4	100	6
1N3881	DO-4	200	6
1N3882	DO-4	300	6
1N3883	DO-4	400	6
D2412F	DO-4	50	12
D2412A	DO-4	100	12
D2412B	DO-4	200	12
D2412C	DO-4	300	12
D2412D	DO-4	400	12
D2412M	DO-4	600	12
1N3889	DO-4	50	12
1N3890	DO-4	100	12
1N3891	DO-4	200	12
1N3892	DO-4	300	12
1N3893	DO-4	400	12
1N1199A	DO-4	50	12
1N1200A	DO-4	100	12
1N1202A	DO-4	200	12
1N1203A	DO-4	300	12
1N1204A	DO-4	400	12
1N1205A	DO-4	500	12
1N1206A	DO-4	600	12
40208	DO-5	50	18
40209	DO-5	100	18
40210	DO-5	200	18
40211	DO-5	300	18
40212	DO-5	400	18
40213	DO-5	500	18
40214	DO-5	600	18
1N248C	DO-5	55	20
1N249C	DO-5	110	20
1N250C	DO-5	220	20

RCA Type	Pkg.	Maximum V_{RRM} V	Maximum I_O A
1N1195A	DO-5	300	20
1N1196A	DO-5	400	20
1N1197A	DO-5	500	20
1N1198A	DO-5	600	20
D2520F	DO-5	50	20
D2520A	DO-5	100	20
D2520B	DO-5	200	20
D2520C	DO-5	300	20
D2520D	DO-5	400	20
D2520M	DO-5	600	20
1N3899	DO-5	50	20
1N3900	DO-5	100	20
1N3901	DO-5	200	20
1N3902	DO-5	300	20
1N3903	DO-5	400	20
1N3909	DO-5	50	30
1N3910	DO-5	100	30
1N3911	DO-5	200	30
1N3912	DO-5	300	30
1N3913	DO-5	400	30
D2540A	DO-5	100	40
D2540B	DO-5	200	40
D2540D	DO-5	400	40
D2540F	DO-5	50	40
D2540M	DO-5	600	40
1N1183A	DO-5	50	40
1N1184A	DO-5	100	40
1N1186A	DO-5	200	40
1N1187A	DO-5	300	40
1N1188A	DO-5	400	40
1N1189A	DO-5	500	40
1N1190A	DO-5	600	40
D2540F	DO-5	50	40
D2540A	DO-5	100	40
D2540B	DO-5	200	40
D2540D	DO-5	400	40
D2540M	DO-5	600	40

SILICON RECTIFIERS CONTROLLED AVALANCHE

I_O = 0.5 A max. at T_A = 75° C.

RCA Type	Pkg.	Max. V_{RRM} V	$V_{(BR)R}$ V
40808	DO-26	600	700–1100
40809	DO-26	800	900–1300

SILICON HIGH VOLTAGE RECTIFIER ASSEMBLIES

RCA Type	Pkg.	Max. V_{RRM} V	I_O at T_A Max. A	°C
CR110	A	10130	0.6	60
CR109	A	9495	0.6	60
CR108	A	8230	0.6	60
CR107	A	7595	0.6	60
CR106	A	6330	0.65	60
CR105	A	5065	0.7	60
CR104	A	4430	0.7	60
CR103	A	3185	0.825	60
CR102	A	2530	0.925	60
CR101	A	1265	1	60
CR201	B	1900	0.615	25
CR203	B	3165	0.615	25
CR204	B	4800	0.615	25
CR206	B	6330	0.615	25
CR208	B	8000	0.615	25
CR210	B	10000	0.615	25
CR212	B	12000	0.615	25
CR280	B	24000	0.615	25
CR301	C	2400	5	50
CR302	C	3600	5	50
CR303	C	4800	5	50
CR304	C	6000	5	50
CR305	C	7200	5	50
CR306	C	8400	5	50
CR307	C	9600	5	50
CR311	C	2400	9	50
CR312	C	3600	9	50
CR313	C	4800	9	50
CR314	C	6000	9	50
CR315	C	7200	9	50
CR316	C	8400	9	50
CR317	C	9600	9	50
CR321	C	2400	12	50
CR322	C	3600	12	50
CR323	C	4800	12	50
CR324	C	6000	12	50
CR325	C	7200	12	50
CR331	C	2400	17	50

RCA Type	Pkg.	Max. V_{RRM} V	I_O at T_A Max. A	°C
CR332	C	3600	17	50
CR333	C	4800	17	50
CR334	C	6000	17	50
CR335	C	7200	17	50
CR341	C	2400	23	50
CR342	C	3600	23	50
CR343	C	4800	23	50
CR344	C	6000	23	50
CR351	C	2400	35	50
CR352	C	3600	35	50
CR353	C	4800	35	50
CR354	C	6000	35	50

SILICON BRIDGE RECTIFIERS

CR400 Series are single-phase, full wave; CR500 Series are three-phase, full wave.

RCA Type	Pkg.	I_O A	$V_{OUT(AV)}$ V
CR401	C	18	200
CR402	C	18	400
CR403	C	18	800
CR404	C	34	200
CR405	C	34	400
CR406	C	34	800
CR407	C	70	200
CR408	C	70	400
CR409	C	70	800
CR501	C	24	300
CR502	C	24	600
CR503	C	46	300
CR504	C	46	600
CR505	C	92	300
CR506	C	92	600

SILICON REPLACEMENT RECTIFIERS

RCA Type	Pkg.	Feature	Replaces Types
CR273/8008	D	Hermetically sealed; needs no warm-up time	8008
CR274/872A	D		872, 872A
CR275/866A/3B28/3B25	D		866, 866A 3B28, 3B25

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RCA Semiconductor Pricing

RCA Type	Net Each, Lots of 1-99	100-999
1N248C, RC*	$1.49	$1.06
1N249C, RC*	1.60	1.16
1N250C, RC*	2.44	1.78
1N440B	.53	.38
1N441B	.60	.43
1N442B	.66	.51
1N443B	.79	.58
1N444B	.92	.67
1N445B	1.12	.82
1N536	.36	.27
1N537	.40	.29
1N538	.45	.32
1N539	.50	.36
1N540	.56	.41
1N547	.79	.57
1N1095	.61	.48
1N1183A, RA*	1.86	1.36
1N1184A, RA*	2.19	1.60
1N1186A, RA*	3.17	2.30
1N1187A, RA*	4.41	3.20
1N1188A, RA*	5.58	4.08
1N1189A, RA*	6.55	4.76
1N1190A, RA*	7.72	5.62
1N1195A, RA*	3.18	2.32
1N1196A, RA*	4.09	2.98
1N1197A, RA*	5.36	3.90
1N1198A, RA*	5.78	4.20
1N1199A, RA*	1.09	.79
1N1200A, RA*	1.25	.91
1N1202A, RA*	2.28	1.66
1N1203A, RA*	3.17	2.30
1N1204A, RA*	4.04	2.94
1N1205A, RA*	4.82	3.50
1N1206A, RA*	5.66	4.12
1N1341B, RB*	1.12	.82
1N1342B, RB*	1.22	.89
1N1344B, RB*	1.86	1.36
1N1345B, RB*	2.74	1.99
1N1346B, RB*	3.50	2.54
1N1347B, RB*	4.21	3.06
1N1348B, RB*	5.02	3.65
1N1612, R*	Order 1N1341B, RB	
1N1613, R*	Order 1N1342B, RB	
1N1614, R*	Order 1N1344B, RB	
1N1615, R*	Order 1N1346B, RB	
1N1616, R*	Order 1N1348B, RB	
1N1763A	.42	.30
1N1764A	.52	.38
1N2858A	.33	.24
1N2859A	.37	.27
1N2860A	.40	.29
1N2861A	.42	.30
1N2862A	.48	.35
1N2863A	.58	.42
1N2864A	.70	.51
1N3193	.35	.26
1N3194	.38	.28
1N3195	.53	.39
1N3196	.74	.54
1N3253	.38	.28
1N3254	.42	.30
1N3255	.56	.41
1N3256	.78	.57
1N3563	.94	.69
1N3754	Order D1300A	
1N3755	Order D1300B	
1N3756	Order D1300D	
1N5211	.38	.28
1N5212	.42	.30
1N5213	.56	.41
1N5214	.81	.59
1N5215	.42	.30
1N5216	.45	.33
1N5217	.60	.44
1N5218	.85	.62
1N5391	.27	.20
1N5392	.30	.22
1N5393	.33	.24
1N5394	.35	.26
1N5395	.37	.27
1N5396	.43	.32
1N5397	.52	.38
1N5398	.73	.53
1N5399	.93	.68
2N681*	2.34	1.70
2N682*	2.82	2.05
2N683*	3.57	2.60
2N684*	4.19	3.05
2N685*	4.81	3.50
2N686*	5.36	3.90
2N687*	5.77	4.20
2N688*	6.74	4.90
2N689*	8.05	5.85
2N690*	8.67	6.30
2N697	.52	.38
2N699	.99	.72
2N718A	1.10	.80
2N720A	1.32	.99
2N918	1.15	.84
JAN2N918	1.74	1.26
2N1479	1.12	.82
JAN2N1479	1.32	.96
2N1480, 2N1481	1.30	.95
JAN2N1480	1.49	1.08
JAN2N1481	1.56	1.13
2N1482	1.47	1.07
JAN2N1482	1.73	1.26

RCA Type	Net Each, Lots of 1-99	100-999
2N1483*	$ 1.73	$ 1.26
JAN2N1483*	2.08	1.51
JANTX2N1483*	7.85	5.70
2N1484*, 85*	1.91	1.39
JAN2N1484*, 85*	2.26	1.64
JANTX2N1484*	8.60	6.25
JANTX2N1485*	9.40	6.85
2N1486*	2.08	1.51
JAN2N1486*	2.43	1.76
JANTX2N1486*	10.30	8.55
2N1487*	2.16	1.58
JAN2N1487*	2.51	1.83
2N1488*, 89*	2.26	1.64
JAN2N1488*, 89*	2.60	1.89
2N1490*	2.51	1.83
JAN2N1490*	2.86	2.08
2N1491	1.82	1.32
2N1492	2.50	1.80
2N1493	3.30	2.40
JAN2N1493	7.43	5.40
2N1613	.65	.55
2N1700	1.90	1.38
2N1701*	2.31	1.68
2N1702*	4.54	3.30
2N1711	.89	.65
2N1842A*	2.20	1.60
2N1843A*	2.61	1.90
2N1844A*	3.30	2.40
2N1845A*	3.84	2.80
2N1846A*	4.46	3.75
2N1847A*	5.10	3.70
2N1848A*	5.51	4.00
2N1849A*	6.54	4.75
2N1850A*	7.56	5.50
2N1893L	1.43	1.04
2N2015*	9.08	6.60
JAN2N2015*, 16*	9.90	7.20
JAN2N2016*	10.75	7.80
2N2102S	1.17	.85
S2N2102	11.60	9.60
2N2270S	.74	.54
2N2304*	4.29	3.12
2N2305*	6.44	4.68
2N2338*	6.60	4.80
2N2405S	1.70	1.24
2N2594S	1.77	1.28
2N2631	4.20	3.05
2N2857	2.40	1.85
JAN2N2857	3.16	2.30
JANTX2N2857	8.65	6.30
2N2876*	12.35	10.25
2N2895	1.41	.97
2N2896	2.06	1.43
2N2897	1.16	.85
2N3053S	.55	.43
2N3054*	1.24	.87
2N3055*	1.49	1.13
JAN2N3055*	2.34	1.62
JANTX2N3055*	8.25	6.00
2N3118	4.95	3.60
2N3119	5.36	3.90
2N3228*	1.47	1.07
2N3229*	22.21	18.38
2N3232*	.99	.80
2N3262	8.30	6.00
2N3263	46.40	38.40
2N3264*	40.60	33.60
2N3265*	47.15	39.00
2N3266*	40.45	33.50
2N3375*	8.75	6.75
JAN2N3375*	11.70	10.35
JANTX2N3375*	21.60	17.85
2N3435	7.43	5.40
2N3439	1.59	1.10
JAN2N3439	2.29	1.67
JANTX2N3439	8.03	5.81
2N3440	1.14	.79
JAN2N3440	1.96	1.42
JANTX2N3440	7.81	5.55
2N3441*	1.56	1.13
JAN2N3441*	1.91	1.39
2N3442*	3.03	2.21
JAN2N3442*	3.64	2.65
2N3478	1.48	1.08
2N3525*	1.77	1.29
2N3528	1.44	1.05
2N3529	1.75	1.28
2N3553	2.25	1.70
JAN2N3553	5.78	4.20
JANTX2N3553	8.74	6.36
2N3583*	1.25	.96
2N3584*	1.79	1.38
JAN2N3584	3.17	2.30
JANTX2N3584	8.65	6.30
2N3585*	2.18	1.68
JAN2N3585*	4.67	3.40
JANTX2N3585	9.90	7.20
2N3600	2.14	1.56
2N3632*	11.50	9.50
2N3650*	7.80	5.70
2N3651*	12.00	8.04
2N3652*	15.00	10.05
2N3653*	20.75	13.90
2N3668*	2.39	1.74
2N3669*	2.81	2.04
2N3670*	3.80	2.76
2N3732	Use SK3034	

RCA Type	Net Each, Lots of 1-99	100-999
2N3733	$12.70	$10.50
2N3771*	3.04	2.24
JAN2N3771*	5.35	3.90
JANTX2N3771*	17.67	13.11
2N3772*	3.04	2.24
JAN2N3772*	5.09	4.40
JANTX2N3772*	17.67	13.11
2N3773*	4.95	3.60
2N3839	9.90	7.20
2N3866	1.40	1.00
JAN2N3866	4.44	3.24
JANTX2N3866	5.94	4.32
2N3870	3.63	2.64
2N3871	4.54	3.30
2N3872	5.94	4.32
2N3873	7.34	5.34
2N3878	1.65	1.35
2N3879*	2.70	1.97
2N3896*	3.96	2.88
2N3897*	4.87	3.54
2N3898*	6.27	4.56
2N3899*	7.67	5.58
2N4012*	14.20	11.75
2N4036S	.97	.71
2N4037S	.78	.56
2N4063*	1.35	.98
2N4064*	1.06	.77
2N4101*	2.22	1.61
2N4102	2.22	1.60
2N4103*	5.12	3.72
2N4240*	1.95	1.50
2N4314S	.87	.64
2N4347*	2.16	1.58
2N4348*	3.58	2.60
2N4427	1.40	1.00
2N4440*	11.30	9.35
JAN2N4440*	18.00	15.00
JANTX2N4440*	24.00	20.00
2N4932*, 3*	21.50	15.80
2N5016*	30.05	22.00
2N5034*	1.65	1.20
2N5035*	1.63	1.19
2N5036*	1.78	1.30
2N5037*	1.76	1.28
2N5038*	5.78	4.20
JAN2N5038*	10.30	7.50
JANTX2N5038*	13.05	10.80
2N5039*	4.87	3.54
JAN2N5039*	8.67	6.30
JANTX2N5039*	11.60	9.60
2N5070*, 1*	24.70	18.50
JAN2N5071	34.65	25.20
JANTX2N5071	39.60	28.80
2N5090*	11.40	8.30
2N5102*	21.75	18.00
2N5109	2.14	1.58
JAN2N5109	4.46	3.24
JANTX2N5109	9.49	6.90
2N5179	.81	.59
2N5180	.83	.60
2N5202*	2.47	1.80
2N5239*	2.97	2.16
2N5240*	3.47	2.52
2N5262	4.06	2.92
2N5293–96	.73	.53
2N5297, 98	.74	.54
2N5320	1.14	.83
2N5321	1.04	.76
2N5322	1.47	1.07
2N5323	1.09	.78
2N5415	1.46	1.01
2N5416	1.98	1.38
2N5441	5.64	4.10
2N5442	6.77	4.92
2N5443	8.46	6.16
2N5444*	5.97	4.34
2N5445*	7.10	5.16
2N5446*	8.79	6.40

	1-24	25-99	100-249
2N5470	$50.00	$43.00	$36.00

	1-99	100-999
2N5490*–95*	$0.96	$0.70
2N5496*, 97*	1.04	.76
2N5567	3.05	2.22
2N5568	3.66	2.66
2N5569*	3.38	2.46
2N5570*	3.99	2.90
2N5571	3.25	2.36
2N5572	3.89	2.83
2N5573*	3.58	2.60
2N5574*	4.22	3.07
2N5575*, 76*	27.41	22.68
2N5577*, 78*	30.45	25.20
2N5579	29.00	24.00
2N5580*	33.50	27.72
2N5671	12.35	10.65
2N5672	16.25	14.38
2N5754	1.19	.87
2N5755	1.41	1.02
2N5756	1.69	1.23
2N5757	2.12	1.54
2N5781	1.47	1.07
2N5782	1.43	1.04
2N5783	1.40	1.02

*Mounting hardware supplied with device.

RCA Semiconductor Pricing

RCA Type	Net Each, Lots of 1-99	100-999
2N5784	$ 1.24	$ .90
2N5785	1.08	.78
2N5786	.99	.72
2N5804*	4.54	3.30
2N5805*	5.95	4.32
2N5838*	2.67	1.93
2N5839*	2.84	2.05
2N5840*	3.17	2.29
2N5913	3.25	2.35
2N5914*	11.05	8.05
2N5915*	12.15	10.00
2N5916*	12.33	10.20
2N5917*	11.60	9.60
2N5918*	12.00	10.20
2N5919A	16.30	14.00

	1-24	25-99	100-249
2N5920	75.00	64.50	54.00
2N5921	100.00	86.00	72.00

	1-99	100-999
2N5954*	1.56	1.14
2N5955*	1.40	1.02
2N5956*	1.23	.90
2N5992*		
2N5993*		
2N5994*		
2N5995*	9.20	6.70
2N5996*		
2N6032*	34.65	28.70
2N6033*	46.40	38.40
2N6055	2.08	1.60
2N6056	2.35	1.81
2N6077	2.64	1.92
2N6078	2.47	1.80
2N6079	2.96	2.16
2N6093	66.00	48.00
2N6098, 9	1.07	.78
2N6100, 1	1.15	.84
2N6102, 3	1.24	.90
2N6104, 5	47.85	39.60
2N6106*-9*	.89	.65
2N6110*, 1*	.86	.63
2N6175	.97	.68
2N6176	1.08	.75
2N6177	1.32	.92
2N6178	1.14	.83
2N6179	.99	.72
2N6180	1.42	1.03
2N6181	1.12	.82
2N6211*	3.04	2.59
2N6212*	3.71	3.16
2N6213	5.33	4.54
2N6214	7.35	6.27
2N6246	1.98	1.44
2N6247	2.31	1.68
2N6248	2.64	1.92
2N6249	6.65	5.75
2N6250	7.38	6.38
2N6251	7.91	6.84
2N6253	1.13	.82
2N6254	1.98	1.50
2N6257	2.48	1.80
2N6258		
2N6259	5.95	4.30
2N6260	1.14	.79
2N6261	1.40	.98
2N6262	3.22	2.34
2N6263	1.24	.90
2N6264	1.82	1.32

	1-24	25-99
2N6265	75.00	64.50
2N6266	100.00	93.00
2N6267	120.00	104.00
2N6268	75.00	64.50
2N6269	150.00	130.00

	1-99	100-999
2N6288, 9	.78	.56
2N6290-3	.81	.59
2N6354	5.20	3.78
2N6371	1.49	1.18
2N6372	1.40	1.02
2N6373	1.23	.90
2N6374	1.07	.78
2N6383	1.73	1.26
2N6384	1.89	1.38
2N6385	2.06	1.50
2N6386	1.23	.90
2N6387	1.48	1.08
2N6388	1.63	1.19
2N6389	2.90	2.10
2N6390	60.00	52.00
2N6391	72.00	64.00
2N6392	78.00	69.00
2N6393	80.00	72.00
2N6467	1.73	1.26
2N6468	1.89	1.38
2N6469, 71	1.98	1.44
2N6470	1.56	1.14
2N6472	2.31	1.68
2N6473	.86	.64
2N6474	.93	.68
2N6475	.95	.70
2N6476	1.02	.74
3N128	1.29	.94
3N138	2.89	2.10

RCA Type	Net Each, Lots of 1-99	100-999
3N139	$2.48	$1.80
3N140	1.62	1.18
3N141	1.45	1.06
3N142	1.04	.76
3N143	1.30	.95
3N152	1.62	1.18
3N153	1.42	1.03
3N154	1.49	1.08
3N159	2.06	1.50
3N187	2.72	1.98
3N200	4.37	3.18

RCA Type	Net per 100 Lots 100-999	1000 Up
CA3000H	$2.76	$2.21
CA3001H	3.77	3.22
CA3002H	2.71	2.16
CA3005H	1.99	1.44
CA3015H	1.80	1.25
CA3015L	2.42	1.87
CA3018H	1.39	.84
CA3018L	1.81	1.26
CA3019H	.86	.62
CA3020H, 23H	2.04	1.49
CA3022H	2.07	1.52
CA3026H	1.75	1.20
CA3028AH	1.40	.85
CA3028AL	1.73	1.18
CA3033H	3.34	2.79
CA3035H	1.99	1.44
CA3039H	.86	.62
CA3039L	1.96	1.41
CA3043H	2.18	1.63
CA3045H	1.39	.84
CA3045L	1.81	1.26
CA3048H	2.90	2.35
CA3049H	1.91	1.39
CA3049L	3.37	2.82
CA3054H	1.56	1.01
CA3054L	2.05	1.50
CA3055H		
CA3056H		
CA3059H, 60H	2.42	1.87
CA3075H	1.90	1.35
CA3076H	2.09	1.54
CA3078H	2.42	1.87
CA3080H	1.11	.56
CA3081H, 82H	1.19	.86
CA3083H	1.25	.91
CA3084H	2.27	1.72
CA3084L	2.89	2.34
CA3085H	1.19	.64
CA3091H	6.79	6.24
CA3093H	1.85	1.30
CA3094H	1.22	.67
CA3095H	1.75	1.25
CA3096H	1.65	1.20
CA3097H	1.58	1.15
CA3099H	1.30	.95
CA3100H	4.25	3.00
CA3102H	2.31	1.68
CA3118H, 46H	1.49	.94
CA3183H	1.75	1.20
CA3308H		
CA3401H	.90	.70
CA3458H		

RCA Type	Net Each, Lots of 1-99	100-999
CD4000AH-2AH	$ .49	$ .41
CD4006AH	2.52	2.09
CD4007AH	.49	.41
CD4008AH	2.60	2.17
CD4009AH, 10AH	1.26	1.04
CD4011AH, 12AH	.49	.41
CD4013AH	1.05	.87
CD4014AH, 15AH	2.74	2.28
CD4016AH	1.05	.87
CD4017AH	2.74	2.28
CD4018AH	3.09	2.57
CD4019AH	1.23	1.03
CD4020AH		
CD4021AH	2.74	2.28
CD4022AH	2.64	2.20
CD4023AH	.49	.41
CD4024AH	1.97	1.63
CD4025AH	.49	.41
CD4026AH	2.64	2.13
CD4027AH	1.62	1.35
CD4028AH	2.37	1.97
CD4029AH	2.54	2.03
CD4030AH	1.05	.88
CD4031AH	5.64	4.70
CD4032AH	2.77	2.31
CD4033AH	2.64	2.13
CD4034AH	5.36	4.86
CD4035AH	2.72	2.26
CD4036AH	4.19	3.68
CD4037AH	2.46	2.03
CD4038AH	2.77	2.31
CD4039AH	4.19	3.69
CA4040AH	2.89	2.41
CD4041AH-44AH	2.74	2.28
CD4045AH	3.40	2.83
CD4046AH	2.07	1.71
CD4047AH	2.18	1.82

RCA Type	Net Each, Lots of 1-99	100-999
CD4049AH, 50AH	$1.04	$ .86
CD4057AH	2.92	1.94
CH2102	1.10	0.55
CH2270	1.05	.50
CH2405	1.25	.70
CH3053	1.00	.45
CH3439	1.90	1.35
CH3440	1.35	.80
CH4036	1.05	.50
CH4037	1.00	.45
CH5262	1.55	1.00
CH5320	1.30	.75
CH5321	1.20	.65
CH5322	1.40	.85
CH5323	1.30	.75

RCA Type	Net Each, Lots of 1-29	30 Up
CR101	$ 5.75	$ 5.47
CR102	7.20	6.85
CR103	8.15	7.75
CR104	9.60	9.10
CR105	10.55	10.05
CR106	12.00	11.40
CR107	12.95	12.30
CR108	13.90	13.20
CR109	15.35	14.60
CR110	16.30	15.50
CR201	3.10	2.96
CR203	4.80	4.56
CR204	5.75	5.47
CR206	6.95	6.60
CR208	8.40	8.00
CR210	10.10	9.60
CR212	12.00	11.40
CR273/8008	Net Each,	60.00
CR274/872A	Net Each,	60.00
CR274	60.00	57.00
CR275/866/3B25/3B28	Net Ea.	13.10
CR280	33.60	31.90
CR282	260.00	
CR301	28.00	26.55
CR302	40.00	37.95
CR303	51.00	48.45
CR304	57.60	54.72
CR305	73.00	69.35
CR306	83.00	78.85
CR307	93.00	88.35
CR311	30.00	28.50
CR312	42.00	39.90
CR313	53.00	50.35
CR314	64.00	60.75
CR315	75.00	71.25
CR316	85.00	80.75
CR317	95.00	90.25
CR321	35.00	33.25
CR322	49.00	46.55
CR323	62.00	58.90
CR324	76.00	72.20
CR325	90.00	85.50
CR331	37.00	35.15
CR332	52.00	49.40
CR333	65.00	61.75
CR334	79.00	75.05
CR335	93.00	88.35
CR341	44.00	41.80
CR342	61.00	57.95
CR343	78.00	74.10
CR344	94.00	89.30
CR351	46.00	43.70
CR352	64.00	60.80
CR353	82.00	72.90
CR354	98.00	93.10
CR401	28.00	26.60
CR402	32.00	30.40
CR403	44.00	41.80
CR404	30.00	28.50
CR405	36.00	34.20
CR406	54.00	51.30
CR407, CR501	40.00	38.00
CR408, CR502	48.00	45.60
CR409	64.00	60.80
CR503	50.00	47.50
CR504	62.00	58.90
CR505	64.00	60.80
CR506	84.00	79.80

	1-24	25-99	100-999
HC2000H	40.00	40.00	34.50
HC2500	38.00	38.00	30.80
HC3000			
HC3100			
HC4100			
R44M10	45.50	39.00	31.20
R44M13	52.50	45.00	36.00
R44M15	61.50	52.50	42.00
R47M10	45.50	39.00	31.20
R47M13	52.50	45.00	36.00
R47M15	61.50	52.50	42.00
R51M10	52.50	45.00	36.00
R51M12	61.50	52.50	42.00

	1-99	100-999
RCA1A01	.74	.54
RCA1A02	.52	.38

*Mounting hardware supplied with device.

RCA Semiconductor Pricing

RCA Type	Net Each, Lots of 1-99	100-999
RCA1A03	$ 1.31	$ .95
RCA1A04	1.50	1.09
RCA1A105	.78	.55
RCA1A06	.71	.52
RCA1A07	0.50	0.36
RCA1A08	.52	.38
RCA1A09	.74	.54
RCA1A10, 13	.83	.60
RCA1A11	.66	.48
RCA1A15	.50	.36
RCA1A16	.52	.38
RCA1A17	.84	.61
RCA1A18	.41	.30
RCA1A19	.45	.32
RCA1B01	1.65	1.20
RCA1B04	2.64	1.92
RCA1B05	2.89	2.10
RCA1B06	2.15	1.56
RCA1C03, 4	.99	.72
RCA1C05, 6	.91	.66
RCA1C07, 8	1.49	1.08
RCA1C09	1.25	.91
RCA1C10, 11	.79	.58
RCA1C12, 13	1.16	.84
RCA1C14	.91	.66
RCA1E02	1.73	1.26
RCA1E03	2.31	1.68
RCA29	.70	.53
RCA29A	.80	.60
RCA29B	.91	.68
RCA29C	1.03	.77
RCA30	.68	.50
RCA30A	.95	.71
RCA30B	1.06	.80
RCA30C	1.21	.91
RCA31	.91	.68
RCA31A	.99	.75
RCA31B	1.10	.83
RCA31C	1.24	.93
RCA32	1.05	.79
RCA32A	1.14	.85
RCA32B	1.24	.93
RCA32C	1.40	1.05
RCA41	1.19	.90
RCA41A	1.28	.96
RCA41B	1.40	1.05
RCA41C	1.60	1.20
RCA42	1.42	1.07
RCA42A	1.53	1.15
RCA42B	1.67	1.25
RCA42C	1.85	1.39
RCA101	2.10	1.40
RCA102	2.70	1.80
RCA103	2.40	1.60
RCA104	2.85	1.90
RCA105	2.33	1.55
RCA106A1	Order S2060A	
RCA106B1	Order S2060B	
RCA106C1	Order S2060C	
RCA106D1	Order S2060D	
RCA106E1	Order S2060E	
RCA106F1	Order S2060F	
RCA106M1	Order S2060M	
RCA106Q1, 107A1	Order S2060Q	
RCA106Y1	Order S2060Y	
RCA107B1	Order S2061B	
RCA107C1	Order S2061C	
RCA107D1	Order S2061D	
RCA107E1	Order S2061E	
RCA107F1	Order S2061F	
RCA107M1	Order S2061M	
RCA107Q1	Order S2061Q	
RCA107Y1	Order S2061Y	
RCA108A	Order S2062A	
RCA108B	Order S2062B	
RCA108C	Order S2062C	
RCA108D	Order S2062D	
RCA108E	Order S2062E	
RCA108F	Order S2062F	
RCA108M	Order S2062M	
RCA108Q	Order S2062Q	
RCA108Y	Order S2062Y	
RCA201	1.75	1.15
RCA202	2.35	1.55
RCA203	2.05	1.35
RCA204	2.40	1.60
RCA205	1.92	1.25
RCA370	1.07	.82
RCA371	1.50	1.11
RCA410	2.30	1.85
RCA411	2.55	2.05
RCA413	2.56	1.87
RCA423	3.90	3.06
RCA431	5.00	3.95
RCA507	3.30	2.40
RCA508	Order 43104	
RCA520	.94	.72
RCA521	1.32	.98
RCA1000	2.12	1.57
RCA1001	2.89	2.14
RCA2003	92.00	80.00
RCA2005	110.00	93.00
RCA2010	120.00	104.00
RCA3001	100.00	90.00
RCA3003	150.00	135.00
RCA3005	225.00	200.00
RCA3054	.79	.59

RCA Type	Net Each, Lots of 1-99	100-999
RCA3055	$ .99	$ .83
40080	1.55	1.10
40081	1.96	1.44
40082	4.04	2.94
40084	1.13	0.82
40108, R*	.99	.72
40109, R*	1.16	.84
40110, R*	1.57	1.14
40111, R*	2.14	1.56
40112, R*	2.48	1.80
40113, R*	3.14	2.28
40114, R*	3.71	2.70
40115, R*	6.60	4.80
40216*	Order 56431M	
40250*	1.24	.87
40250V1*	1.44	1.00
40251	1.71	1.13
40266	.29	.21
40267	.33	.24
40279*	109.85	90.90
40280	4.62	3.36
40281*	10.60	8.75
40282*	11.90	9.85
40285*	37.70	31.20
40287*	21.75	18.00
40290	2.48	1.80
40291*	11.50	8.35
40292*	12.40	10.30
40294	23.05	19.10
40296	32.10	26.60
40305	15.10	12.50
40306*	26.85	22.20
40307*	28.85	23.90
40309	.63	.46
40309V1, V2*		
40310*	1.10	.77
40310V1	1.06	.77
40311	.64	.47
40311V1, V2		
40312*	1.26	.88
40312V1	1.46	1.01
40313*	1.55	1.13
40314	.64	.47
40314V1, V2*		
40315	.63	.46
40315V1, V2*		
40316*	.99	.72
40317	.64	.47
40317V1, V2*		
40318*	1.55	1.13
40319	.76	.55
40319V1, V2*	1.37	1.00
40320	.64	.47
40320V1, V2*		
40321	.98	.72
40321V1, V2*	1.32	.96
40322*	1.57	1.14
40323	.61	.48
40323V1, V2*		
40324*	1.10	.77
40325*	1.57	1.14
40326	.64	.47
40326V1, V2*		
40327	1.17	.81
40327V1, V2*		
40328*	1.58	1.15
40340*, 1*	21.00	15.50
40346	.77	.56
40346V1, V2*	1.23	.89
40347	1.12	.78
40347V1, V2*	1.16	.84
40348	1.06	.77
40348V1, V2*	1.14	.83
40349	1.56	1.13
40349V1, V2*	1.64	1.19
40360*	.86	.62
40360V1, V2*		
40361	.89	.65
40361V1, V2*		
40362	.81	.59
40362V1, V2	1.37	1.00
40363*	1.49	1.08
40364*	2.06	1.50
40366	5.69	4.14
40366V1, V2*		
40367	7.84	5.70
40367V1, V2*	7.92	5.75
40368	11.60	9.60
40369*	13.05	10.80
40372	1.44	1.00
40373	1.70	1.24
40374	1.57	1.14
40375	1.65	1.34
40378	1.47	1.07
40379	1.85	1.34
40385	5.36	3.90
40385V1, V2*		
40388	5.77	4.20
40389	.68	.49
40390	1.06	.77
40391, 94*	.87	.64
40392*	.79	.58
40406	.81	.59
40407	.61	.44
40408	.91	.66
40409	.94	.68
40410	.97	.71

RCA Type	Net Each, Lots of 1-99	100-999
40411*	$ 3.47	$ 2.52
40412	1.06	.77
40412V1, V2*	1.14	.83
40414	6.10	4.44
40429*	Order T2700B	
40430*	Order T2700D	
40433	2.30	1.68
40437	.51	.37
40446*	4.29	3.12
40467A	1.24	.90
40468A	.75	.54
40484	2.15	1.56
40485*	Use SK3532	
40486*	Use SK5332	
40502	Order T2710B	
40503	Order T2710D	
40504	Order S2710B	
40505	Order S2710D	
40506	Order S2710M	
40507	1.63	1.19
40508	2.01	1.46
40509	Use SK3532	
40510	Use SK3532	
40513*	1.65	1.20
40514*	1.66	1.21
40525	Order T2300A	
40526	Order T2300B	
40527	Order T2300D	
40528	Order T2302A	
40529	Order T2302B	
40530	Order T2302D	
40531	Order T2310A	
40532	Order T2310B	
40533	Order T2310D	
40534	Order T2312A	
40535	Order T2312B	
40536	Order T2312D	
40537	.74	.54
40538	.76	.55
40539	.69	.50
40542*	1.64	1.19
40543*	1.68	1.22
40544*	.61	.44
40553*	Order S3700B	
40554*	Order S3700D	
40555*	Order S3700M	
40559A	.70	.51
40575*	Order T4700B	
40576*	Order T4700D	
40577, 8	58.00	48.00
40581	4.87	3.54
40582*	5.12	3.72
40594	1.24	.90
40595	1.44	1.04
40600	1.24	.90
40601	1.16	.84
40602	.83	.60
40603	1.04	.76
40604	.98	.71
40605	45.00	37.25
40606*	45.00	37.25
40608	2.48	1.80
40609	1.24	.90
40610	.83	.60
40611	.59	.41
40613	.76	.55
40614	.68	.49
40615	.86	.63
40616	.61	.44
40618*	.69	.50
40619	1.37	.99
40620	.91	.67
40621*	.79	.58
40622*	.73	.53
40624*	.93	.67
40625	.79	.58
40627	.99	.72
40628	.81	.59
40629*	.69	.50
40630*	.74	.54
40631*	.90	.66
40632*	1.24	.90
40633*	1.60	1.16
40634	.91	.66
40635	.66	.48
40636*	1.65	1.20
40637A	1.65	1.30
40638		
40639	Use SK3532	
40640*	Order S3705M	
40641*	Order S3706M	
40642	Order D2601EF	
40643	Order D2601DF	
40644	Order D2600EF	
40653	2.61	1.90
40654	Order S2600B	
40655	Order S2600D	
40656	Order S2620B	
40657	Order S2620D	
40658	Order S2610B	
40659	Order S2610D	
40660	Order T6401B	
40661	Order T6401D	
40662*	Order T6411B	
40663*	Order T6411D	
40664		

*Mounting hardware supplied with device.

RCA Type	Net Each, Lots of 1-99	100-999
40665	$14.00	$11.65
40666*	12.00	9.85
40667		
40668*	Order T2800B	
40669*	Order T2800D	
40671	Order T6401M	
40672*	Order T6411M	
40673	$ 1.01	$ 0.73
40680*	Order S6420A	
40681*	Order S6420B	
40682*	Order S6420D	
40683	Order T2313A	
40684	Order T2313B	
40685	Order T2313D	
40686	Order T2313M	
40687	Order T6420B	
40688	Order T6420D	
40689	Order T6420M	
40690	Order T2301B	
40691	Order T2301D	
40692	Order T2316A	
40693	Order T2316B	
40694	Order T2316D	
40695	Order T2306A	
40696	Order T2306B	
40697	Order T2306D	
40698	Order T6406B	
40699	Order T6406D	
40700	Order T6406M	
40701	Order T6416B	
40702*	Order T6416D	
40703*	Order T6416M	
40704*	Order T6407B	
40705	Order T6407D	
40706	Order T6417B	
40707*	Order T6417D	
40708*	Order T6407M	
40709	Order T6417M	
40710*	Order T4106B	
40711	Order T4106D	
40712	Order T4116B	
40713*	Order T4116D	
40714*	Order T4706B	
40715*	Order T4706D	
40716*	Order T4107B	
40717	Order T4107D	
40718	Order T4117B	
40719*	Order T4117D	
40720*	Order T2806B	
40721*	Order T2806D	
40722*		
40727*	2.06	1.50
40728*	2.39	1.74
40729	2.23	1.62
40730	2.56	1.86
40735	Order S7430M	
40737	1.49	1.08
40738	1.57	1.14
40739	2.39	1.74
40740	3.38	2.46
40741*	1.82	1.32
40742*	1.90	1.38
40743*	2.72	1.98
40744*	3.71	2.70
40745*	2.97	2.16
40746*	3.05	2.22
40747*	3.85	2.85
40748*	4.87	3.54
40749	Order S6200A	
40750	Order S6200B	
40751	Order S6200D	
40752	Order S6200M	
40753*	Order S6210A	
40754*	Order S6210B	
40755*	Order S6210D	
40756*	Order S6210M	
40757*	Order S6220A	
40758*	Order S6220B	
40759*	Order S6220D	
40760*	Order S6220M	
40761	Order T2311B	
40762	Order T2311D	
40766	Order T2301A	
40767	Order T2311A	
40768	Order S3701M	
40769	Order T2304B	
40770	Order T2304D	
40771	Order T2305B	
40772	Order T2305D	
40775	Order T4105B	
40776	Order T4105D	
40777*	Order T4115B	
40778*	Order T4115D	
40779	Order T4104B	
40780	Order T4104D	
40781*	Order T4114B	
40782	Order T4114D	
40783	Order T4103B	
40784	Order T4103D	
40785*	Order T4113B	
40786*	Order T4113D	
40787	Order T6405B	
40788	Order T6405D	
40789*	Order T6415B	
40790*	Order T6415D	
40791	Order T6404B	
40792	Order T6404D	

RCA Type	Net Each, Lots of 1-99	100-999
40793*	Order T6414B	
40794	Order T6414D	
40795	Order T4101M	
40796*	Order T4111M	
40797	Order T4100M	
40798*	Order T4110M	
40799*	Order T4121B	
40800*	Order T4121D	
40801*	Order T4121M	
40802*	Order T4120B	
40803*	Order T4120D	
40804*	Order T4120M	
40805*	Order T6421B	
40806*	Order T6421D	
40807*	Order T6421M	
40810	$ 1.13	.82
40811	1.32	.96
40812	1.59	1.16
40813	1.98	1.44
40814S	.74	.54
40815S	.92	.67
40816	.91	.66
40817	1.15	.84
40819	1.73	1.26
40820	.94	.68
40821	.89	.65
40822	.86	.62
40823	.81	.59
40829	1.69	1.23
40830	1.53	1.11
40831	1.36	.99
40833	Order S2600M	
40834	Order S2620M	
40835	Order S2610M	

RCA Type	Net Each, Lots of 1-24	25-99
40836	$50.00	$43.00
40837	75.00	64.50

RCA Type	Net Each, Lots of 1-99	100-999
40838, 9	$1.16	$0.84
40841	.68	.49
40842	Order T2801DF	
40850	2.84	1.80
40851	3.00	2.18
40852	3.25	2.36
40853	6.44	4.68
40854	9.80	7.15
40867	Order S2800A	
40868	Order S2800B	
40869	Order S2800D	
40871	.85	.62
40872	.94	.68
40873	.83	.60
40874	.89	.65
40875	.83	.60
40876	.92	.67
40885	1.07	.74
40886	1.19	.83
40887	1.41	.98
40888	Order S3703SF	
40889	Order S3702SF	
40890	Order D2103SF	
40891	Order D2103S	
40892	Order D2101S	
40893	19.45	16.10
40894	.84	.61
40895	.81	.59
40896	.81	.59
40897	.81	.59

RCA Type	Net Each, Lots of 1-24	25-99
40898	$ 75.00	$ 64.50
40899	134.00	115.00

RCA Type	Net Each, Lots of 1-99	100-999
40900	Order T2850A	
40901	Order T2850B	
40902	Order T2850D	

RCA Type	Net Each, Lots of 1-24	25-99
40909	$134.00	$115.00

RCA Type	Net Each, Lots of 1-99	100-999
40910	$.094	$0.68
40911	1.24	.90
40912	1.37	1.00
40913	1.95	1.42
40915	3.20	2.35

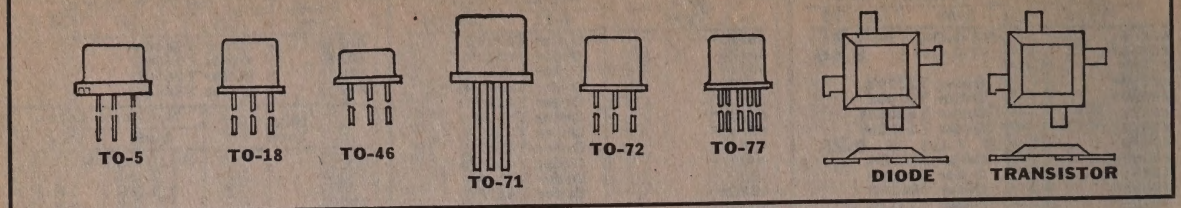
RCA Type	Net Each, Lots of 1-9	10-99	100-Up
40916	Order T8430B		
40917	Order T8430D		
40918	Order T8430M		
40919	Order T8440B		
40920	Order T8440D		

RCA Type	Net Each, Lots of 1-9	10-99	100 Up
40921	Order T8440M		
40922	Order T8450B		
40923	Order T8450D		
40924	Order T8450M		

RCA Type	Net Each, Lots of 1-99	100-999
40925	$1.023	$ 7.42
40926	10.56	7.62
40927	10.30	8.52
40934	11.20	8.50
40936	13.00	10.80
40937	Order S6400N	
40938	Order S6410N	
40940	11.55	8.40
40941	11.40	8.30
40942	Order S2400A	
40943	Order S2400B	
40944	Order S2400D	
40945	Order S2400M	
40952	Order S6420N	
40953	2.30	1.68
40954	9.90	7.20
40955	14.50	12.00
40956, R	Order D2540F	
40957, R	Order D2540A	
40958, R	Order D2540B	
40959, R	Order D2540D	
40960, R	Order D2540M	
40964	2.15	1.56
40965	1.70	1.30
40967	9.10	6.60
40968	11.55	8.40
40972	2.30	1.68
40973	10.80	7.80
40974	14.50	12.00
40975	1.75	1.25
40976	2.48	1.80
40977	10.70	7.80
41008	9.10	7.60
41008A	9.10	7.60
41009	13.10	10.70
41009A	13.10	10.70
41010	13.80	11.00
41011	1.75	1.27
41014	Order T2500B	
41015	Order T2500D	
41017	Order S3800SF	
41018	Order S3800MF	
41019	Order S3800E	
41020	Order S3800S	
41021	Order S3800M	
41022	Order S3800EF	
41023	Order S3800D	
41024	6.60	4.80
41025	12.00	9.00
41026	32.00	24.00
41027	12.00	9.00
41028	32.00	24.00
43879, R	Order IN3879, R	
43880, R	Order IN3880, R	
43881, R	Order IN3881, R	
43882, R	Order IN3882, R	
43883, R	Order IN3883, R	
43884, R	Order D2406M, R	
43889, R	Order IN3889, R	
43890, R	Order IN3890, R	
43891, R	Order IN3891, R	
43892, R	Order IN3892, R	
43893, R	Order IN3893, R	
43894, R	Order D2412M, R	
43899, R	Order IN3899, R	
43900, R	Order IN3900, R	
43901, R	Order IN3901, R	
43902, R	Order IN3902, R	
43903, R	Order IN3903, R	
43904, R	Order D2520M	
44001	Order D1201F	
44002	Order D1201A	
44003	Order D1201B	
44004	Order D1201D	
44005	Order D1201M	
44006	Order D1201N	
44007	Order D1201P	
44933	Order D2201F	
44934	Order D2201A	
44935	Order D2201B	
44936	Order D2201D	
44937	Order D2201M	
44938	Order D2201N	
45411	Order D3202Y	
45412	Order D3202LL	

*Mounting hardware supplied with device.

RAYTHEON Silicon Planar Transistors



GENERAL PURPOSE AMPLIFIERS

NPN MEDIUM SPEED

NPN except as otherwise noted.

Raytheon Number	Case TO-	Max. V_{CB} V	H_{FE} at I_C Min.	H_{FE} at I_C mA	V_{CE} (sat) V	Min. f_t MHz	Net Each, Lots of 1-99	Net Each, Lots of 100-999
2N497*	5	60	12	200	5.0	40†	$1.70	$1.06
2N657*	5	100	30	200	5.0	40†	1.62	1.00
2N696*	5	60	20	150	1.5	40	.52	.41
2N697*	5	60	40	150	1.5	50	.50	.32
2N698	5	120	20	150	5.0	40	1.57	1.05
2N699	5	120	40	150	5.0	50	1.32	.88
2N699A	5	120	40	150	5.0	50	4.30	2.65
2N717	18	60	20	150	1.5	40	.99	.66
2N718	18	60	40	150	1.5	50	.46	.40
2N718A‡	18	75	40	150	1.5	60	.79	.68
2N719	18	120	20	150	5.0	40	2.35	1.52
2N720A	18	120	40	150	5.0	50	1.10	.72
2N721§	18	50	20	150	1.5	50	1.46	1.27
2N722§	18	50	30	150	1.5	50	1.46	1.27
2N871	18	100	100	150	5.0	60	1.40	.88
2N910*	18	100	75	10	1.2	60	1.75	1.16
2N911*	18	100	35	10	1.2	50	.90	.55
2N912*	18	100	15	10	1.2	40	2.15	1.42
2N956	18	75	100	150	1.5	70	.66	.40
2N1131*§	5	50	20	150	1.5	50	1.22	.81
2N1132*§	5	50	30	150	1.5	50	.70	.44
2N1420	5	60	100	150	1.5	50	.65	.56
2N1507	5	60	100	150	1.5	50	1.20	.80
2N1613‡	5	75	40	150	1.5	60	.79	.68
2N1711‡	5	75	100	150	1.5	70	.85	.60
2N1890‡	5	100	100	150	5.0	60	2.16	1.44
2N1893‡	5	120	40	150	5.0	50	1.00	.62
2N1990	5	100	20	30	0.5	40	1.70	1.05
2N2102	5	120	40	150	0.5	60	.98	.65
2N2102A	5	120	40	150	0.3	60	1.05	.78
2N2192	5	60	100	150	0.35	50	.85	.52
2N2192A	5	60	100	150	0.25	50	.85	.52
2N2192B	5	60	100	150	0.18	50	4.50	2.80
2N2193	5	80	40	150	0.35	50	1.00	.61
2N2193A	5	80	40	150	0.25	50	1.75	1.15
2N2193B	5	80	40	150	0.18	50	4.60	2.80
2N2194	5	60	20	150	0.35	50	1.00	.61
2N2194A	5	60	20	150	0.25	50	1.42	.88
2N2194B	5	60	20	150	0.18	50	3.00	1.85
2N2195	5	45	20	150	0.35	50	1.00	.61
2N2195A	5	45	20	150	0.25	50	1.28	.80
2N2195B	5	45	20	150	0.18	50	1.55	.95
2N2243	5	120	40	150	0.35	50	1.85	1.23
2N2243A	5	120	40	150	0.25	50	1.85	1.23
2N2270	5	60	50	150	0.9	100	.88	.59
2N2297	5	80	40	150	0.2	60	1.10	.70
2N2303§	5	50	75	150	1.5	50	2.70	1.68
2N2350	46	60	100	150	0.35	50	3.58	2.39
2N2350A	46	60	100	150	0.25	50	3.75	2.50
2N2351	46	80	40	150	0.35	50	2.60	2.08
2N2351A	46	80	40	150	0.25	50	3.50	2.18
2N2352	46	60	20	150	0.35	50	2.95	2.87
2N2352A	46	60	20	150	0.25	50	3.20	2.13
2N2353	46	45	20	150	0.35	50	1.80	1.10
2N2353A	46	45	20	150	0.25	50	2.13	1.42
2N2405	5	120	60	150	0.5	40†	1.38	.85
2N3019‡	5	140	100	150	0.2	100	1.12	.70
2N3020	5	140	40	150	0.2	100	1.12	.70
2N3056	46	100	40	150	0.25	80	2.70	1.80
2N3057	46	100	100	150	0.25	100	2.70	1.80
2N3700‡	18	140	100	150	0.2	100	1.20	.80
2N3701	18	140	40	150	0.2	80	1.75	1.05

*JAN type available. †Typ. ‡JAN and JANTX type available. §PNP.

NPN HIGH SPEED

Raytheon Number	Case TO-	Max. V_{CB} V	H_{FE} at I_C Min.	H_{FE} at I_C mA	V_{CE} (sat) V	Max. t_{ON} nsec	Net Ea., Lot 1-99	Net Ea., Lot 100-999
2N2217	5	60	20	150	0.4	35†	$3.00	$2.00
2N2218*	5	60	40	150	1.6	35†	.56	.35
2N2218A*	5	75	40	150	1.6	35	.62	.38
2N2219*	5	60	100	150	1.6	35†	.53	.39
2N2219A*	5	75	100	150	1.6	35	.59	.36
2N2220	18	60	20	150	0.4	35†	1.10	.73
2N2221*	18	60	40	150	1.6	35†	.53	.32
2N2221A*	18	75	40	150	1.6	35	.54	.34
2N2222*	18	60	100	150	1.6	35†	.52	.31
2N2222A*	18	75	100	150	1.6	35	.53	.32
2N2958	18	60	40	150	0.5	95	1.80	1.20
2N2959	5	60	100	150	0.5	95	1.45	.95
2N3115	18	60	40	150	0.5	95	1.01	.67
2N3116	18	60	100	150	0.5	95	1.01	.67

*JAN and JANTX types available. †Typical.

GENERAL PURPOSE AMPLIFIERS (CONT'D)

PNP HIGH SPEED

Raytheon Number	Case TO-	Max. V_{CB} V	H_{FE} at I_C Min.	H_{FE} at I_C mA	V_{CE} (sat) V	Max. t_{ON} nsec	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2800	5	50	30	150	1.2	70	$2.45	$1.55
2N2801	5	50	75	150	1.2	70	2.70	1.65
2N2837	18	50	30	150	1.2	70	2.35	1.45
2N2838	18	50	75	150	1.2	70	2.50	1.55
2N2904*	5	60	40	150	1.6	45	.54	.33
2N2904A*	5	60	40	150	1.6	45	1.55	1.05
2N2905*	5	60	100	150	1.6	45	.56	.35
2N2905A*	5	60	100	150	1.6	45	.63	.39
2N2906*	18	60	40	150	1.6	45	.56	.35
2N2906A*	18	60	40	150	1.6	45	.57	.35
2N2907*	18	60	100	150	1.6	45	.57	.35
2N2907A*	18	60	100	150	1.6	45	.57	.35
2N3485	46	60	40	150	1.6	50	5.20	3.20
2N3485A*	46	60	40	150	1.6	50	5.20	3.20
2N3486	46	60	100	150	1.6	50	5.20	3.20
2N3486A*	46	60	100	150	1.6	50	6.00	4.00
2N3671	5	60	75	150	1.6	50	2.12	1.41
2N3672	18	60	75	150	1.6	50	1.80	1.20
2N3673	46	60	75	150	1.6	50	4.50	2.80

*JAN and JANTX types available.

NPN LOW LEVEL AMPLIFIERS

NPN except as otherwise noted.

Raytheon Number	Case TO-	Max. V_{CB} V	H_{FE} at I_C Min.	H_{FE} at I_C mA	V_{CE} (sat) V	Min. f_t MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N327B*	5	50	9	3.0	0.3	2	$2.25	$1.50
2N328B*	5	50	18	3.0	0.5	2	4.00	2.65
2N329B*	5	50	36	3.0	0.6	2	5.00	3.30
2N760	18	45	76	1.0	1.0	50	.80	.50
2N760A†	18	60	76	1.0	1.0	50	.95	.60
2N929‡	18	45	40	0.01	1.0	30	1.12	.75
2N930‡	18	45	100	0.01	1.0	30	.53	.33
2N2483	18	60	40	0.01	0.35	60	.65	.40
2N2484‡	18	60	100	0.01	0.35	60	.50	.31
2N2604*†	46	60	40	0.01	0.5	30	3.50	2.30
2N2605*†	46	60	100	0.01	0.5	30	2.33	1.55
2N3117	18	60	250	0.01	0.35	60	2.75	1.75

*PNP. †JAN type available. ‡JAN and JANTX types available.

ULTRA-HIGH FREQUENCY AMPLIFIERS (TO-72)

NPN except 2N4080 PNP. Types 2N915, 2N916 and 2N957, case TO-18.

Raytheon Number	Max. V_{CB} V	H_{FE} at I_C Min.	H_{FE} at I_C mA	Min. f_t MHz	Max. C_{ob} pF	Max. NF at f dB	Max. NF at f MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N915	70	50	10	250	3.5	2	1	$1.45	$0.90
2N916*	45	50	10	300	6.0	2	1	1.20	.75
2N917	30	20	3	500	1.7	6	60	.70	.45
2N918†	30	20	3	600	1.7	6	60	.73	.44
2N957	40	45	10	200	6.0	2	1	2.20	1.36
2N2708	35	30	2	700	1.0	7.5	200	1.50	1.00
2N2865	25	20	4	600	2.5	4.5	200	3.30	2.20

*JAN type available. †JAN and JANTX types available.

NPN ULTRA-HIGH SPEED LOGIC SWITCHES (TO-18)

H_{FE} at I_C = 10 mA except as otherwise noted.

Raytheon Number	Max. V_{CB} V	Min. H_{FE}	V_{CE} (sat) V	Min. f_t MHz	Maximum t_{ON} nsec	Maximum t_{OFF} nsec	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N706*	25	20	0.2	200	40†	75†	$0.38	$0.30
2N706A	25	20	0.2	200	40	75	.48	.30
2N706B	25	20	0.2	200	40	75	.55	.36
2N708	40	30	0.3	300	35	65	.46	.34
2N2368	40	20	0.6	400	12	15	1.07	.93
2N2369‡	40	40	0.6	500	12	18	.40	.25
2N2369A*	40	40	0.5	500	12	18	.50	.31
2N2894§	12	40#	0.5	400	60	90	1.00	.67
2N3011	30	30	0.5	400	15	20	1.00	.67
2N3012§	12	30#	0.5	400	60	75	1.25	.78

*JAN type available. †Typical. ‡JAN and JANTX types available. §PNP. #I_C = 30 mA.

RAYTHEON Transistors and Diodes

NPN-PNP TYPES AVAILABLE

Data sheets and pricing on request.

NPN GP MEDIUM SPEED AMPLIFIERS

Raytheon Number	Raytheon Number	Raytheon Number	Raytheon Number	Raytheon Number	Raytheon Number
2N498*	2N870	2N2868	2N2898	2N3057A†	2N3110
2N656*	2N1889	2N2895	2N2899	2N3107	2N3122
2N699B	2N1893A	2N2896	2N2900	2N3108	2N3388
2N720	2N2364, A	2N2897	2N3056A	2N3109	

NPN GENERAL PURPOSE HIGH SPEED AMPLIFIERS

2N3299	2N3300	2N3301	2N3302	2N3326	.....

PNP GENERAL PURPOSE HIGH SPEED AMPLIFIERS

2N2695	2N3073	2N3133	2N3136	2N3251	2N3503
2N2696	2N3120	2N3134	2N3250	2N3251A†	2N3504
2N3072	2N3121	2N3135	2N3250A†	2N3502	2N3505

NPN LOW LEVEL AMPLIFIERS

2N930A	2N2484A	2N2509	2N2510	2N2511	2N2586

PNP LOW LEVEL AMPLIFIERS

2N327A	2N328A	2N329A*	2N2861	2N2862	.....

NPN-PNP ULTRA HIGH SPEED LOGIC SWITCHES

NPN except 2N869A, 2N3209, PNP.

2N706C	2N744	2N784	2N834A	2N2205	2N3209
2N743	2N744A	2N784A	2N835	2N2481†	2N3210
2N743A	2N783	2N834	2N869A	2N3010	2N4137

NPN CORE DRIVERS

2N2410	2N3252	2N3722	2N3725	2N3735†	2N4046
2N2476	2N3444	2N3724	2N3725A	2N3830	2N4047
2N2477	2N3554	2N3724A	2N3734	2N3831	.....

PNP CORE DRIVERS

2N3468	2N3762	2N3763†	2N4030	2N4032	2N5022, 3

NPN DIFFERENTIAL AND DUAL AMPLIFIERS

2N2060A	2N2903	2N2919A	2N2981	2N3044–	2N3424
2N2480, A	2N2915A	2N2920A	2N2982	2N3048	2N3728
2N2652, A	2N2916A	2N2980	2N3043	2N3423	2N3729

PNP DIFFERENTIAL AND DUAL AMPLIFIERS

2N2802–	2N3726	2N3804, A	2N3810*	2N3812–	2N4937–
2N2807	2N3727	2N3805, A	2N3810A	2N3816	2N4942
2N3347–	2N3800–	2N3806–	2N3811*	2N3816A	.....
2N3352	2N3803	2N3809	2N3811A	2N3817, A	.....

*JAN type available. †JAN and JANTX types available.

NPN DARLINGTON AMPLIFIERS

Raytheon Number	Case TO-	Max. V_{CE} V	H_{FE} at I_C Min.	mA	$V_{CE(sat)}$ at I_C/I_B V	mA/mA	Net Ea., Lots 1-99	100-999
2N997	18	40	7000	100	1.6	100/10	$6.00	$4.00
2N998	72	60	1600	10	1.8	100/10	6.00	4.00
2N999	72	60	7000	100	1.6	100/10	8.00	5.20

PNP CHOPPERS (TO-46)

$V_{CE(sat)} = 0.3$ V at $I_C = 10$ mA and $I_B = 2$ mA.

Raytheon No.	Max. V_{CB} V	Min. H_{FE} at I_C = 1.0 mA	V_O at I_B mV	mA	r_d at I_B Ohms	mA	Net Ea., Lots 1-99	100-999
2N2946	40	30	2.0	1.0	45	1.0	$2.65	$1.85
2N3217	15	30	2.0	0.2	30	1.0	2.55	1.70
2N3218	25	30	2.0	0.2	50	1.0	2.25	1.50
2N3219	40	20	3.0	0.2	60	1.0	2.55	1.70
2N3910	60	40	0.8	0.2	15	1.0	3.93	2.62
2N3911	60	60	0.5	0.2	10	1.0	4.05	2.70

PNP CORE DRIVERS (TO-5)

PNP except 2N3253 NPN. 2N3467 available as JAN.

Raytheon Number	Max. V_{CB} V	H_{FE} at I_C Min.	mA	$V_{CE(sat)}$ at I_C V	mA	Min. f_t MHz	Net Ea., Lots 1-99	100-999
2N3244	40	50	500	0.5	500	175	$2.45	$1.63
2N3245	50	30	500	0.6	500	150	2.60	1.73
2N3253	75	25	375	0.6	500	175	1.49	.99
2N3467*	40	40	500	0.5	500	175	2.65	1.75

*JAN type available.

NPN DIFFERENTIAL AMPLIFIERS (TO-77)

Ambient $P_D = 300$ mW one side (2N2060–2N2223A, 500 mW) and 600 mW both sides. ΔT −55° C to +125° C.

Raytheon No.	Max. V_{CE} V	One Side at 25° C: H_{FE} at I_C Min.	mA	Matching: H_{FE} %	V_{BE} mV	Tracking ΔV_{BE} ΔT µV/° C	Net Each, Lots of 1-99	100-999
2N2060*	60	30	0.1	10	5	10	$ 6.75	$4.50
2N2223	60	25	0.1	20	15	25	4.30	2.80
2N2223A	60	25	0.1	10	5	25	5.25	3.40
2N2453	30	150	1.0	10	3	10	8.90	5.85
2N2639	45	50	0.01	10	5	10	6.75	4.50
2N2640	45	50	0.01	20	10	20	4.00	3.00
2N2641	45	50	0.01	.....	.....	.....	3.00	2.00
2N2642*	45	100	0.01	10	5	10	8.25	5.50
2N2643	45	100	0.01	20	10	20	4.50	3.00
2N2644	45	100	0.01	.....	.....	.....	4.40	2.95
2N2903A	30	125	1.0	10	5	10	7.20	4.80
2N2913	45	60	0.01	.....	.....	.....	1.40	.85
2N2914	45	150	0.01	.....	.....	.....	2.25	1.50
2N2915	45	60	0.01	10	3	10	4.25	2.60
2N2916	45	150	0.01	10	3	10	5.10	3.10
2N2917	45	60	0.01	20	5	20	2.70	2.00
2N2918	45	150	0.01	20	5	20	3.75	2.50
2N2919	60	60	0.01	10	3	10	4.25	2.60
2N2920*	60	150	0.01	10	3	10	5.15	3.35
2N2936	55	100	0.01	10	5	10	14.25	9.50
2N2937	55	100	0.01	.....	.....	.....	6.00	4.00

*JAN and JANTX types available.

Same as above except: in TO-71 case; ambient $P_D = 250$ mW one side and 300 mW both sides.

Raytheon No.	Max. V_{CE} V	One Side at 25° C: H_{FE} at I_C Min.	mA	Matching: H_{FE} %	V_{BE} mV	Tracking ΔV_{BE} ΔT µV/° C	Net Each, Lots of 1-99	100-999
2N2972	45	60	0.01	.....	.....	.....	$2.35	$1.75
2N2973	45	150	0.01	.....	.....	.....	3.40	3.25
2N2974	45	60	0.01	10	3	10	6.75	4.50
2N2975	45	150	0.01	10	3	10	9.00	6.00
2N2976	45	60	0.01	20	5	20	4.70	3.50
2N2977	45	150	0.01	20	5	20	6.00	4.00
2N2978	60	60	0.01	10	3	10	7.50	6.00
2N2979	60	150	0.01	10	3	10	8.50	6.50

MANY OTHER TYPES AVAILABLE FROM RAYTHEON—

WRITE OR CALL FOR INFORMATION

SILICON BEAM LEAD PRODUCTS

New four-beam lead configuration on diode and transistor beam lead devices. Silicon Nitride passivation coat gives complete hermetic sealing to all junctions. Data sheets on request.

DIODES

Raytheon Number	Description	Net Ea., Lots 25-99	100-999
BD914	High speed switching	$0.55	$0.38
BD3600		.70	.47

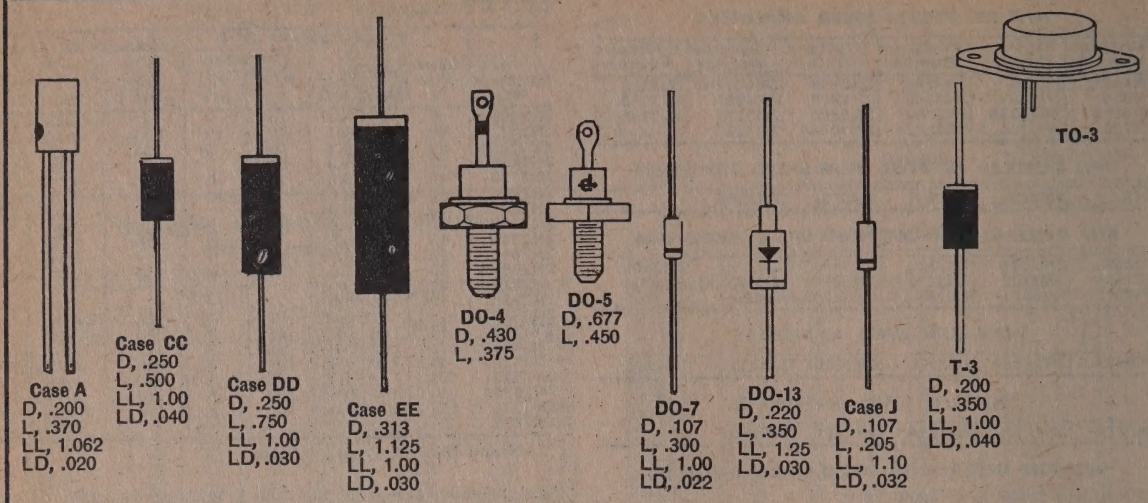
NPN TRANSISTORS

Raytheon Number	Description	Net Ea., Lots 25-99	100-999
BT918	Ultra high frequency amplifier	$0.73	$0.44
BT929	Low level amplifier	.62	.42
BT930	Low level amplifier	.70	.47
BT2221A	General purpose/high speed	.90	.60
BT2222A		1.05	.72
BT2369A	Ultra high speed switch	.62	.42
BT2483	Low level amplifier	.65	.40
BT2484		.70	.43

PNP TRANSISTORS

Raytheon Number	Description	Net Ea., Lots 25-99	100-999
BT2604	Low level amplifier	$0.83	$0.55
BT2605		1.00	.70
BT2906A	General purpose/high speed	1.00	.70
BT2907A		1.25	.85
BT2946	Chopper	1.30	.87

SEE PRECEDING PAGE FOR CASE ILLUSTRATIONS



All dimensions shown are in inches. D = Max. body dia. L = Max. body lgth. LL = Min. lead lgth. LD = Nom. lead dia.

QUICK REFERENCE GUIDE FOR VOLTAGE REFERENCE (TC) DIODES

Siemens voltage reference (TC) diodes are shown in the form of quick reference chart below. To find the proper device, first select the reference voltage associated with the desired test current and operating temperature range and then read across to the appropriate 1N number shown under the selected temperature coefficient. For example, for nominal voltage of 12.8 volts, test current of 0.5 mA, an operating temperature range of −55° C to +100° C at a temp. stability of 0.01%/° C. Siemens number is 1N4896A.

Nom. Voltage V_Z at I_{ZT}	Test Current I_{ZT} mA	Case Type	Operating Temp., ° C	Temperature Stability 0.01%/° C Siemens No.	ΔVz mV	0.005%/° C Siemens No.	ΔVz mV	0.002%/° C Siemens No.	ΔVz mV	0.001%/° C Siemens No.	ΔVz mV	0.0005%/° C Siemens No.	ΔVz No.	0.0002%/° C Siemens No.	ΔVz mV
6.2	7.5	DO-7	−55 to +100	1N821*	96	1N823*	48	1N825	19	1N827*	5	1N829*	5	.....	
6.2	7.5	DO-7	−55 to +100	1N821A	96	1N823A	48	1N825A	19	1N827A	5	1N829A	5	.....	
6.4	0.5	DO-7	0 to + 75	1N4565	48	1N4566	24	1N4567	10	1N4568	5	1N4569	2.2	.....	
	0.5		−55 to +100	1N4565A*	99	1N4566A*	50	1N4567A*	20	1N4568A*	10	1N4569A*	5	.....	
	1.0		0 to + 75	1N4570	48	1N4571	25	1N4572	10	1N4573	5	1N4574	2.2	.....	
	1.0		−55 to +100	1N4570A*	99	1N4571A*	50	1N4572A*	20	1N4573A*	10	1N4574A*	5	.....	
	2.0		0 to + 75	1N4575	48	1N4576	25	1N4577	10	1N4578	5	1N4579	2.2	.....	
	2.0		−55 to +100	1N4575A*	99	1N4576A*	50	1N4577A*	20	1N4578A*	10	1N4579A	5	.....	
	4.0		0 to + 75	1N4580	48	1N4581	25	1N4582	10	1N4583	5	1N4584	2.2	.....	
	4.0		−55 to +100	1N4580A	99	1N4581A	50	1N4582A	20	1N4583A	10	1N4584A	5	.....	
8.4	10.0	DO-7	−55 to +100	1N3154*	130	1N3155*	65	1N3156*	26	1N3157*	13	.....		.....	
8.4	10.0	DO-7	−55 to +150	1N3154A	172	1N3155A	86	1N3156A	34	1N3157A	17	.....		.....	
8.5	0.5	DO-7	0 to + 75	1N4775	64	1N4776	32	1N4777	13	1N4778	6	2N4779	3.2	.....	
	0.5		−55 to +100	1N4775A	132	1N4776A	66	1N4777A	26	1N4778A	13	1N4779A	6.6	.....	
	1.0		0 to + 75	1N4780	64	1N4781	32	1N4782	13	1N4783	6	1N4784	3.2	.....	
	1.0		−55 to +100	1N4780A	132	1N4781A	66	1N4782A	26	1N4783A	13	1N4784A	6.6	.....	
9.0	7.5	DO-7	0 to + 75	1N935	67	1N936	33	1N937	13	1N938	6	1N939	3	1N940	1.3
	7.5		−55 to +100	1N935A	139	1N936A	69	1N937A	27	1N938A	13	1N939A	7	1N940A	2.7
	7.5		−55 to +150	1N935B*	184	1N936B*	92	1N937B*	37	1N938B*	18	1N939B*	9	1N940B*	3.7
9.1	0.5	DO-7	0 to + 75	1N4765	68	1N4766	34	1N4767	14	1N4768	7	1N4769	3	.....	
	0.5		−55 to +100	1N4765A	141	1N4766A	70	1N4767A	28	1N4768A	14	1N4769A	7	.....	
	1.0		0 to + 75	1N4770	68	1N4771	34	1N4772	14	1N4773	7	1N4774	3	.....	
	1.0		−55 to +100	1N4770A	141	1N4771A	70	1N4772A	28	1N4773A	14	1N4774A	7	.....	
9.3	10.0	DO-13	0 to + 75	1N2620	70	1N2621	35	1N2622	14	1N2623	7	1N2624	4	.....	
	10.0		−55 to +100	1N2620A	144	1N2621A	72	1N2622A	29	1N2623A	14	1N2624A	7	.....	
	10.0		−55 to +150	1N2620B	190	1N2621B	95	1N2622B	38	1N2623B	19	1N2624B	10	.....	
9.4	10.0	DO-13	0 to + 70	.....		1N2163†	33	.....		1N2166†	7	1N2169†	4	.....	
±	10.0		−55 to +125	.....		1N2164†	85	.....		1N2167†	17	1N2170†	7	.....	
0.4	10.0		−55 to +185	.....		1N2165†	113	.....		1N2168†	23	1N2171†	10	.....	
11.7	7.5	DO-7	0 to + 75	1N941	88	1N942	44	1N943	18	1N944	9	1N945	4	1N946	1.8
	7.5		−55 to +100	1N941A	181	1N942A	90	1N943A	36	1N944A	18	1N945A	9	1N946A	3.6
	7.5		−55 to +150	1N941B*	239	1N942B*	120	1N943B*	47	1N944B*	24	1N945B*	12	1N946B	4.7
12.8	0.5	DO-7	+25 to +100	1N4896	96	1N4897	48	1N4898	19	1N4899	10	.....		.....	
	0.5		−55 to +100	1N4896A	198	1N4897A	99	1N4898A	40	1N4899A	20	.....		.....	
	1.0		+25 to +100	1N4900	96	1N4901	48	1N4902	19	1N4903	10	.....		.....	
	1.0		−55 to +100	1N4900A	198	1N4901A	99	1N4902A	40	1N4903A	20	.....		.....	
	2.0		+25 to +100	1N4904	96	1N4905	48	1N4906	19	1N4907	10	.....		.....	
	2.0		−55 to +100	1N4904A	198	1N4905A	99	1N4906A	40	1N4907A	20	.....		.....	
	4.0		+25 to +100	2N4908	96	1N4909	48	1N4910	19	1N4911	10	.....		.....	
	4.0		−55 to +100	1N4908A	198	1N4909A	99	1N4910A	40	1N4911A	20	.....		.....	
	7.5		+25 to +100	1N4912	96	1N4913	48	1N4914	19	1N4915	10	.....		.....	
	7.5		−55 to +100	1N4912A	198	1N4913A	99	1N4914A	40	1N4915A	20	.....		.....	
19.2	0.5	DO-7	+25 to +100	1N4916	144	1N4917	72	1N4918	29	.....		.....		.....	
	0.5		−55 to +100	1N4916A	298	1N4917A	149	1N4918A	60	.....		.....		.....	
	1.0		+25 to +100	1N4919	144	1N4920	72	1N4921	29	.....		.....		.....	
	1.0		−55 to +100	1N4919A	298	1N4920A	149	1N4921A	60	.....		.....		.....	
	2.0		+25 to +100	1N4922	144	1N4923	72	1N4924	29	.....		.....		.....	
	2.0		−55 to +100	1N4922A	298	1N4923A	149	1N4924A	60	.....		.....		.....	
	4.0		+25 to +100	1N4925	144	1N4926	72	1N4927	29	1N4928	14	.....		.....	
	4.0		−55 to +100	1N4925A	298	1N4926A	149	1N4927A	60	1N4928A	30	.....		.....	
	7.5		+25 to +100	1N4929	144	1N4930	72	1N4931	29	1N4932	14	.....		.....	
	7.5		−55 to +100	1N4929A	298	1N4930A	149	1N4931A	60	1N4932A	30	.....		.....	
12.4 to 200	10.0 to 12.5	Epoxy Case CC DD, EE	−55 to +100	.....		1N4057 to 1N4085		1N4075A to 1N4085A		.....		.....		.....	

*JAN and/or TX devices. †Available with ±0.2 V, add suffix A to Siemens number.

SEE LAST PAGE OF THIS LISTING FOR COMPLETE PRICING INFORMATION

QUICK REFERENCE GUIDE FOR VOLTAGE REGULATING (ZENER) DIODES

LOW POWER (500 mW)

Nominal Volts V_Z	Siemens Number †	‡	§	#
1.8			1N4614*	1N4678
2.0			1N4615*	1N4679
2.2			1N4616*	1N4680
2.4	1N4370*	1N5221	1N4617*	1N4681
2.5		1N5222		
2.7	1N4371*	1N5223	1N4618*	1N4682
2.8		1N5224		1N4683
3.0	1N4372*	1N5225	1N4619*	1N4683
3.3	1N746*	1N5226	1N4620*	1N4684
3.6	1N747*	1N5227	1N4621*	1N4685
3.9	1N748*	1N5228	1N4622*	1N4686
4.3	1N749*	1N5229	1N4623*	1N4687
4.7	1N750*	1N5230	1N4624*	1N4688
5.1	1N751*	1N5231	1N4625*	1N4689
5.6	1N752*	1N5232	1N4626*	1N4690
6.0		1N5233		
6.2	1N753*	1N5234	1N4627*	1N4691
6.8	1N754*	1N5235	1N4099*	1N4692
6.8	1N957			
7.5	1N755*	1N5236	1N4100*	1N4693
7.5	1N958			
8.2	1N756*	1N5237	1N4101	1N4694
8.2	1N959			
8.7		1N5238	1N4102*	1N4695
9.1	1N757*	1N5239	1N4103	1N4696
9.1	1N960			
10.0	1N758*	1N5240	1N4104*	1N4697
10.0	1N961			
11.0	1N962*	1N5241	1N4105*	1N4698
12.0	1N759*	1N5242	1N4106*	1N4699
12.0	1N963*			
13.0	1N964*	1N5243	1N4107*	1N4700
14.0		1N5244	1N4108*	1N4701
15.0	1N965*	1N5245	1N4109*	1N4702
16.0	1N966*	1N5246	1N4110*	1N4703
17.0		1N5247	1N4111*	1N4704
18.0	1N967*	1N5248	1N4112*	1N4705
19.0		1N5249	1N4113*	1N4706
20.0	1N968*	1N5250	1N4114*	1N4707
22.0	1N969*	1N5251	1N4115*	1N4708
24.0	1N970*	1N5252	1N4116*	1N4709
25.0		1N5253	1N4117*	1N4710
27.0	1N971*	1N5254	1N4118*	1N4711
28.0		1N5255	1N4119*	1N4712
30.0	1N972*	1N5256	1N4120*	1N4713
33.0	1N973*	1N5257	1N4121*	1N4714
36.0	1N974*	1N5258	1N4122*	1N4715
39.0	1N975*	1N5259	1N4123*	1N4716
43.0	1N976*	1N5260	1N4124*	1N4717
47.0	1N977*	1N5261	1N4125*	
51.0	1N978*	1N5262	1N4126*	
56.0	1N979*	1N5263	1N4127*	
60.0		1N5264	1N4128	
62.0	1N980*	1N5265	1N4129*	
68.0	1N981*	1N5266	1N4130*	
75.0	1N982*	1N5267	1N4131*	
82.0	1N983*	1N5268	1N4132*	
87.0		1N5269	1N4133	
91.0	1N984*	1N5270	1N4134*	
100.0	1N985	1N5271	1N4135*	
110.0	1N986	1N5272		
120.0	1N987	1N5273		
130.0	1N988	1N5274		
140.0		1N5275		
150.0	1N989	1N5276		
160.0	1N990	1N5277		
170.0		1N5278		
180.0	1N991	1N5279		
190.0		1N5280		
200.0	1N992	1N5281		

*JAN and/or TX qualifications. †Standard applications. ‡Low leakage applications. §Low leakage, low noise and low operating current applications. #Very low operating current applications.

MEDIUM POWER (1-5 WATT)

Zener diodes with axial leads. See previous page for case illustrations.

Nom. Volts V_Z	Siemens Number 1 Watt DO-13†	1 Watt Case J‡	2 Watt Case J‡	3 Watt Case J‡	5 Watt Case T-3‡
3.3	1N3821*	1N4728	2EZ3.3D5	3EZ3.3D5	1N5333
3.6	1N3822*	1N4729	2EZ3.6D5	3EZ3.6D5	1N5334
3.9	1N3823*	1N4730	2EZ3.9D5	3EZ3.9D5	1N5335
4.3	1N3824*	1N4731	2EZ4.3D5	3EZ4.3D5	1N5336
4.7	1N3825*	1N4732	2EZ4.7D5	3EZ4.7D5	1N5337
5.1	1N3826*	1N4733	2EZ5.1D5	3EZ5.1D5	1N5338
5.6	1N3827*	1N4734	2EZ5.6D5	3EZ5.6D5	1N5339
6.0					1N5340
6.2	1N3828*	1N4735	2EZ6.2D5	3EZ6.2D5	1N5341
6.8	1N3829	1N4736	2EZ6.8D5	3EZ6.8D5	1N5342
6.8	1N3016*				
7.5	1N3830	1N4737	2EZ7.5D5	3EZ7.5D5	1N5343
7.5	1N3017*				
8.2	1N3018*	1N4738	2EZ8.2D5	3EZ8.2D5	1N5344
8.7					1N5345
9.1	1N3019*	1N4739	2EZ9.1D5	3EZ9.1D5	1N5346
10.0	1N3020*	1N4740	2EZ10D5	3EZ10D5	1N5347
11.0	1N3021*	1N4741	2EZ11D5	3EZ11D5	1N5348
12.0	1N3022*	1N4742	2EZ12D5	3EZ12D5	1N5349
13.0	1N3023*	1N4743	2EZ13D5	3EZ13D5	1N5350
14.0			2EZ14D5	3EZ14D5	1N5351
15.0	1N3024*	1N4744	2EZ15D5	3EZ15D5	1N5352
16.0	1N3025*	1N4745	2EZ16D5	3EZ16D5	1N5353
17.0					1N5354
18.0	1N3026*	1N4746	2EZ18D5	3EZ18D5	1N5355
19.0					1N5356
20.0	1N3027*	1N4747	2EZ20D5	3EZ20D5	1N5357
22.0	1N3028*	1N4748	2EZ22D5	3EZ22D5	1N5358
24.0	1N3029*	1N4749	2EZ24D5	3EZ24D5	1N5359
25.0					1N5360
27.0	1N3030*	1N4750	2EZ27D5	3EZ27D5	1N5361
28.0					1N5362
30.0	1N3031*	1N4751	2EZ30D5	3EZ30D5	1N5363
33.0	1N3032*	1N4752	2EZ33D5	3EZ33D5	1N5364
36.0	1N3033*	1N4753	2EZ36D5	3EZ36D5	1N5365
39.0	1N3034*	1N4754	2EZ39D5	3EZ39D5	1N5366
43.0	1N3035*	1N4755	2EZ43D5	3EZ43D5	1N5367
47.0	1N3036*	1N4756	2EZ47D5	3EZ47D5	1N5368
51.0	1N3037*	1N4757	2EZ51D5	3EZ51D5	1N5369
56.0	1N3038*	1N4758	2EZ56D5	3EZ56D5	1N5370
60.0				3EZ60D5	1N5371
62.0	1N3039*	1N4759	2EZ62D5	3EZ62D5	1N5372
68.0	1N3040*	1N4760	2EZ68D5	3EZ68D5	1N5373
75.0	1N3041*	1N4761	2EZ75D5	3EZ75D5	1N5374
82.0	1N3042*	1N4762	2EZ82D5	3EZ82D5	1N5375
87.0					1N5376
91.0	1N3043*	1N4763	2EZ91D5	3EZ91D5	1N5377
100.0	1N3044*	1N4764	1EZ100D5	2EZ100D5	3EZ100D5	1N5378
110.0	1N3045*		1EZ110D5	2EZ110D5	3EZ110D5	1N5379
120.0	1N3046*		1EZ120D5	2EZ120D5	3EZ120D5	1N5380
130.0	1N3047*		1EZ130D5	2EZ130D5	3EZ130D5	1N5381
140.0			1EZ140D5	2EZ140D5	3EZ140D5	1N5382
150.0	1N3048*		1EZ150D5	2EZ150D5	3EZ150D5	1N5383
160.0	1N3049		1EZ160D5	2EZ160D5	3EZ160D5	1N5384
170.0			1EZ170D5	2EZ170D5	3EZ170D5	1N5385
180.0	1N3050		1EZ180D5	2EZ180D5	3EZ180D5	1N5386
190.0			1EZ190D5	2EZ190D5	3EZ190D5	1N5387
200.0	1N3051		1EZ200D5	2EZ200D5	3EZ200D5	1N5388

*JAN and/or TX qualifications. †Hermetically sealed for military applications in metal case. ‡For commercial and industrial applications in epoxy cases as marked.

HIGH POWER (10-15 WATT)

See previous page for case illustrations.

Nom. Volts V_Z	Siemens Number 10 Watt DO-4‡	50 Watt DO-5‡	50 Watt TO-3§
3.9	1N3993*	1N4549*	1N4557
4.3	1N3994*	1N4550*	1N4558
4.7	1N3995*	1N4551*	1N4559
5.1	1N3996*	1N4552*	1N4560
5.6	1N3997*	1N4553*	1N4561
6.2	1N3998*	1N4554*	1N4562
6.8	1N2970*	1N4555	1N4563
6.8	1N3999*	1N3305*	1N2804
7.5	1N2971*	1N4556	1N4564
7.5	1N4000*	1N3306*	1N2805
8.2	1N2972*	1N3307*	1N2806*
9.1	1N2973*	1N3308*	1N2807*
10.0	1N2974*	1N3309*	1N2808*
11.0	1N2975*	1N3310*	1N2809*
12.0	1N2976*	1N3311*	1N2810*
13.0	1N2977*	1N3312*	1N2811*
14.0	1N2978	1N3313*	1N2812*
15.0	1N2979*	1N3314*	1N2813*
16.0	1N2980*	1N3315*	1N2814*
17.0	1N2981	1N3316	1N2815
18.0	1N2982*	1N3317*	1N2816*
19.0	1N2983	1N3318	1N2817
20.0	1N2984*	1N3319*	1N2818*
22.0	1N2985*	1N3320*	1N2819*
24.0	1N2986*	1N3321*	1N2820*
25.0	1N2987	1N3322	1N2821
27.0	1N2988*	1N3323*	1N2822*
30.0	1N2989*	1N3324*	1N2823*
33.0	1N2990*	1N4325*	1N2824*
36.0	1N2991*	1N3326*	1N2825*
39.0	1N2992*	1N3327*	1N2826*
43.0	1N2993*	1N3328*	1N2827
45.0	1N2994	1N3329	1N2828*
47.0	1N2995*	1N3330*	1N2829*
50.0	1N2996	1N3331	1N2830
51.0	1N2997*	1N3332*	1N2831*
52.0	1N2998	1N3333	
56.0	1N2999*	1N3334*	1N2832*
62.0	1N3000*	1N3335*	1N2833*
68.0	1N3001*	1N3336*	1N2834*
75.0	1N3002*	1N3337*	1N2835*
82.0	1N3003*	1N3338*	1N2836*
91.0	1N3004*	1N3339*	1N2837*
100.0	1N3005*	1N3340*	1N2838
105.0	1N3006*	1N3341	1N2839
110.0	1N3007*	1N3342*	1N2840
120.0	1N3008*	1N3343*	1N2841
130.0	1N3009*	1N3344*	1N2842
140.0	1N3010*	1N3345	
150.0	1N3011*	1N3346*	1N2843
160.0	1N3012	1N3347*	1N2844
175.0	1N3013	1N3348	
180.0	1N3014	1N3349*	1N2845
200.0	1N3015	1N3350*	1N2846

*JAN and/or TX qualifications. †Stud package DO-4 for industrial and military applications. ‡Stud package DO-5 for industrial and military applications. §Diamond package TO-3 for industrial and military applications.

SEE FOLLOWING PAGE FOR COMPLETE PRICING INFORMATION

SIEMENS CORPORATION Semiconductor Pricing

Listed below are the prices for Siemens voltage reference (TC) diodes and voltage regulator (zener) diodes. **Prices on request** on items not listed in the tables below. Reel packaging also available, specify and add **$0.02** per unit—minimum order of 1000 units. Zener diodes also available in tight tolerance. **For ±2% tolerance,** multiply the price shown by **2** and for **±1% tolerance,** multiply the price shown by **3.**

TEMPERATURE COMPENSATED ZENER REFERENCE DIODES

6.2 VOLT, 400 mW (GLASS)

Siemens Number	Tol. %	Net Each, Lots of* 1-24	25-99	100-249
1N821	5	$ 2.75	$ 2.20	$ 1.65
1N821A	5	2.90	2.30	1.70
JAN1N821	5	2.95	2.35	1.75
TX1N821	5	7.60	6.10	4.55
1N822	5	10.00	8.00	6.00
1N823	5	3.60	2.90	2.15
1N823A	5	3.90	3.10	2.35
JAN1N823	5	4.35	3.50	2.60
TX1N823	5	8.70	6.95	5.20
1N824	5	14.00	11.20	8.40
1N825	5	5.80	4.65	3.50
1N825A	5	6.50	5.20	3.90
JAN1N825	5	7.10	5.70	4.25
TX1N825	5	11.30	9.05	6.80
1N826	5	10.00	8.00	6.00
1N827	5	10.85	8.70	6.50
1N827A	5	13.05	10.45	7.85
JAN1N827	5	14.50	11.60	8.70
TX1N827	5	18.50	14.80	11.10
1N828	5	11.00	8.80	6.60
1N829	5	16.30	13.05	9.80
1N829A	5	19.55	15.65	11.75
JAN1N829	5	28.25	22.60	16.95
TX1N829	5	33.00	26.40	19.80

9.0 VOLT, 500 mW (GLASS)

1N935	5	$ 2.30	$ 1.85	$ 1.40
1N935A	5	2.60	2.10	1.55
1N935B	5	3.55	2.85	2.15
JAN1N935B	5	5.30	4.25	3.20
TX1N935B	5	9.30	7.45	5.60
1N936	5	2.75	2.20	1.65
1N936A	5	3.55	2.85	2.15
1N936B	5	4.20	3.35	2.50
1N937	5	5.35	4.30	3.20
1N937A	5	6.15	4.90	3.70
1N937B	5	7.10	5.70	4.25
JAN1N937B	5	9.30	7.45	5.60
TX1N937B	5	13.25	10.60	7.95
1N938	5	6.95	5.55	4.15
1N938A	5	7.55	6.05	4.55
1N938B	5	10.00	8.00	6.00
JAN1N938B	5	13.35	10.70	8.00
TX1N938B	5	18.75	15.00	11.25
1N939	5	18.00	14.40	10.80
1N939A	5	25.35	20.30	15.20
1N939B	5	27.35	21.90	16.40
JAN1N939B	5	29.80	23.85	17.90
TX1N939B	5	37.25	29.80	22.35
1N940	5	34.80	31.30	27.80
1N940A	5	40.60	35.00	28.00
1N940B	5	45.00	40.00	32.00
JAN1N940B	5	70.00	56.00	42.00
TX1N940B	5	80.00	64.00	48.00

11.7 VOLT, 500 mW (GLASS)

1N941	5	$ 3.20	$ 2.55	$ 1.90
1N941A	5	3.40	2.70	2.05
1N941B	5	3.60	2.90	2.15
JAN1N941B	5	7.45	5.95	4.45
TX1N941B	5	11.50	9.20	6.90
1N942	5	3.50	2.80	2.10
1N942A	5	4.35	3.50	2.60
1N942B	5	4.95	3.95	2.95
1N943	5	6.90	5.50	4.15
1N943A	5	6.95	5.55	4.15
1N943B	5	7.15	5.70	4.30
JAN1N943B	5	12.80	10.25	7.70
TX1N943B	5	17.05	13.65	10.25
1N944	5	10.15	8.10	6.10
1N944A	5	13.05	10.45	7.85
1N944B	5	16.60	13.30	10.00
JAN1N944B	5	17.30	13.85	10.40
TX1N944B	5	25.25	20.20	15.15
1N945	5	26.70	21.35	16.00
1N945A	5	36.40	29.10	21.85
1N945B	5	40.90	32.70	24.55
JAN1N945B	5	41.70	36.00	30.00
TX1N945B	5	49.90	42.00	35.00
1N946	5	60.00	48.00	36.00
1N946A	5	65.00	52.00	39.00
1N946B	5	70.00	56.00	42.00

VOLTAGE REGULATING ZENER DIODES

400 mW (GLASS)

Siemens Number	Tol. %	Net Each, Lots of* 1-24	25-99	100-249
1N746–759	10	$ 1.00	$ 0.80	$ 0.60
1N746A–759A	5	1.20	1.10	.90
JAN1N746A–759A	5	1.50	1.15	.85
TX1N746A–759A	5	2.90	2.25	1.70
1N957–984	20	.95	.75	.50
1N957A–984A	10	1.00	.80	.60
1N957B–984B	5	1.20	1.10	.85
1N985–992	20	1.30	1.05	.78
1N985A–992A	10	1.50	1.20	.90
1N985B–992B	5	1.83	1.45	1.10
JAN1N962B–985B	5	1.75	1.40	1.05
TX1N962B–985B	5	3.35	2.68	2.00
1N4370–4372	10	1.00	.80	.60
1N4370A–4372A	5	1.20	1.10	.90
JAN1N4370A–4372A	5	1.50	1.15	.85
TX1N4370A–4372A	5	3.00	2.40	1.80

500 mW (GLASS)

1N5221–5270	20	1.05	0.85	0.65
1N5221A–5270A	10	1.20	.95	.70
1N5221B–5270B	5	1.40	1.15	.85
1N5271–5281	20	1.30	1.05	.78
1N5271A–5281A	10	1.50	1.20	.90
1N5271B–5281B	5	1.83	1.45	1.10

1 WATT (METAL)†

1N3016–3043	20	$ 2.85	$2.30	$1.70
1N3016A–3043A	10	3.20	2.55	1.90
1N3016B–3043B	5	3.70	2.95	2.20
1N3044–3051	20	2.95	2.35	1.75
1N3044A–3051A	10	3.25	2.60	1.95
1N3044B–3051B	5	4.65	3.70	2.80
JAN1N3016B–3043B	5	4.00	3.20	2.40
JAN1N3044B–3048B	5	6.90	5.50	4.15
TX1N3016B–3043B	5	7.90	6.30	4.75
TX1N3044B–3048B	5	10.55	8.45	6.35

1 WATT (MOLDED)

1N4728–4752	10	$1.26	$1.00	$0.75
1N4728A–4764A	5	1.50	1.20	.90
1EZ100D5–200D5	5	2.25	1.80	1.30

2 WATT (MOLDED)

2EZ3.6D5–91D5	5	$1.65	$1.30	$1.00
2EZ100D5–200D5	5	2.20	1.75	1.30

3 WATT (MOLDED)

3EZ3.9D5–91D5	5	$1.85	$1.50	$1.10
3EZ100D5–200D5	5	2.60	2.10	1.55

10 WATT (METAL STUD)†

1N2970–3004	20	5.45	4.35	3.25
1N2970A–3004A	10	5.85	4.70	3.50
1N2970B–3004B	5	7.30	5.85	4.40
1N3005–3015	20	6.00	4.80	3.60
1N3005A–3015A	10	9.00	7.20	5.40
1N3005B–3015B	5	9.95	7.95	5.95
JAN1N2970B–3004B	5	7.80	6.25	4.70
JAN1N3005B–3011B	5	13.75	9.95	7.95
TX1N2970B–3004B	5	13.65	10.90	8.20
TX1N3005B–3011B	5	22.00	17.60	13.20
1N3993–4000	10	5.85	4.70	3.50
1N3993A–4000A	5	7.30	5.85	4.40
JAN1N3993A–4000A	5	7.70	6.25	4.70
TX1N3993A–4000A	5	13.65	10.90	8.20

50 WATT (DIAMOND PACKAGE)

1N2804–2837†	20	5.65	4.50	3.40
1N2804A–2837A†	10	7.65	6.10	4.60
1N2804B–2837B†	5	10.65	8.50	6.40
1N2838–2846†	20	6.80	5.45	4.10
1N2838A–2846A†	10	11.30	9.05	6.80
1N2838B–2846B†	5	17.95	14.35	10.75
JAN1N2806B–2837B†	5	14.65	11.70	8.80
TX1N2806B–2837B†	5	21.98	17.55	13.20
1N4557–4564	20	5.65	4.50	3.40
1N4557A–4564A	10	7.65	6.10	4.60
1N4557B–4564B	5	10.65	8.50	6.40

50 WATT (METAL STUD)†

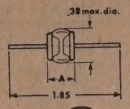
1N4549–4556	20	5.65	4.50	3.40
1N4549A–4556A	10	7.65	6.10	4.60
1N4549B–4556B	5	10.65	8.50	6.40
JAN1N4549B–4554B	5	14.65	11.70	8.80
TX1N4549B–4554B	5	21.98	17.55	13.20

*Prices on request. †Reverse polarity available, add suffix **R** to the number; prices on request.

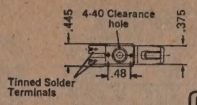
★LARGER QUANTITY PRICES ON REQUEST

SIEMENS SVP® GAS-FILLED SURGE VOLTAGE PROTECTORS
FOR PROTECTION AGAINST LIGHTNING AND OTHER TRANSIENTS

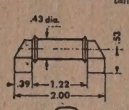
Button Type



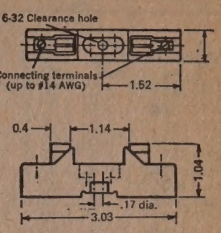
A



D



B



E

SVP tubes consist of two main electrodes, properly spaced by a glass or ceramic insulator. The main electrodes are bonded to the insulator and form a hermetically sealed discharge chamber which contains an inert gas. Provides effective protection against overvoltage transients, increasing reliability and reducing maintenance and down-time costs. Features fast response time in the nanosecond range, high current carrying capability, accurate breakdown voltage, low capacitance (2 to 6.8 pF depending upon type) and high insulation resistance (greater than 10^{10} ohms). Should be used in all types of electronic equipment where solid-state devices or other sensitive components are used, such as: instrumentation, communications, data processing, electric and electronic counters. Button Type is for transient protection in most applications. Power Type is for applications where especially severe current surges are anticipated.

SPECIFICATIONS

Rated Surge Discharge Current: Peak value of a current pulse with 8 μsec rise time and 20 μsec decay to half value, to which the protector will be subjected 10 times at intervals of 30 seconds, is 5000 amps; power types, 20,000 amps. **Capacitance:** Less than 2 pF between main electrodes except type L2-A230, less than 6.8 pF; L2-A350 and L2-A600; less than 4.5 pF.

BUTTON TYPE WITH WIRE LEADS (FIG. A)

Size, .38″ dia. x 1.85″ long (including leads).

Siemens Number	DC Striking Volts*	Dim. "A"	Net Each, Lots of 1-24	25-99	100-499	500-999
B1-C90/20	90 (±20%)	.272	$2.50	$2.00	$1.40	$1.30
B1-C145	145 (±20%)	.272	2.45	1.96	1.37	1.27
B1-A230	230 (±15%)	.238	2.20	1.76	1.23	1.14
B2-B270	270 (±15%)	.238	2.50	2.00	1.40	1.30
B1-A350	350 (±15%)	.238	2.20	1.76	1.23	1.14
B2-B470	470 (±15%)	.295	2.25	1.80	1.26	1.17
B2-B800	800 (±15%)	.335	2.50	2.00	1.40	1.30
B2-H10	1000 (±15%)	.276	3.00	2.40	1.68	1.56

*Voltage at which the protector will ignite if subjected to a slowly rising DC voltage (less than 100 V/second).

BUTTON TYPE WITHOUT LEADS

Size, .38″ dia.; length (A) shown in table below.

Siemens Number	DC Striking Volts*	Dim. "A"	Net Each, Lots of 1-24	25-99	100-499	500-999
A1-C90/20	90 (±20%)	.272	$2.35	$1.88	$1.32	$1.22
A1-C145	145 (±20%)	.272	2.30	1.84	1.29	1.20
A1-A230	230 (±15%)	.238	2.05	1.64	1.15	1.06
A1-A350	350 (±15%)	.238	2.05	1.64	1.15	1.06
A2-B470	470 (±15%)	.295	2.10	1.68	1.18	1.09
A2-B800	800 (±15%)	.....	2.35	1.88	1.32	1.22

POWER TYPE (FIG. B)

Knife blade contacts. Size, .43″ dia. x 2.00″ overall.

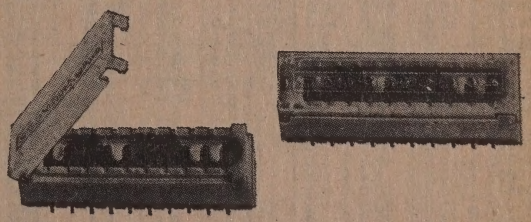
Siemens Number	DC Striking Volts*	Net Each, Lots of 1-24	25-99	100-499	500-999
L2-A230	230 (±15%)	$5.60	$4.75	$3.92	$3.47
L2-A350	350 (±15%)	4.80	4.10	3.36	2.97
L2-A600	600 (±15%)	4.80	4.10	3.36	2.97

HOLDERS

Siemens Number	Fig.	For Protector Type	Net Each, Lots of 1-24	25-99	100-499	500-999
A1-A1	D	Button	$0.90	$0.72	$0.50	$0.47
A2-L1	E	Power	2.25	1.90	1.58	1.40

PROGRAMMING SWITCHES FOR PC BOARDS

Low profile switch for printed circuit boards consists of two rows of 10 in-line terminals, on 0.1″ x 0.2″ grid spacing, connected by double-spring gold-plated contacts. Replaces the function of up to three rotary or slide switches, saving space and permitting economical dense packaging. Eliminates the labor of cross-wiring where occasional changes in operating conditions are required. A rotor is turned by a small screwdriver, 180° sequentially from one detented position to another. Overall mounting area is less than .350 sq. in.; housing is only .35″ high x .295″ wide x 1.19″ long. Snap-open dust cover has engraved position numbers. Materials are not affected by immersion in cleaning solutions such as Freon TE, alcohol, or soap and water.



Siemens Number	Rotors	Mounting	Net Each, Lots of 1-9	10-49	50-99	100-499
C42315-A61-A1	1	Straight pin	$4.16	$3.22	$2.60	$2.29
C42315-A61-A2	2	Straight pin	5.19	4.03	3.23	2.86
C42315-A61-A3	3	Straight pin	6.26	4.86	3.89	3.46
C42315-A61-C9	Stop*	.....	.15	.12	.10	.09

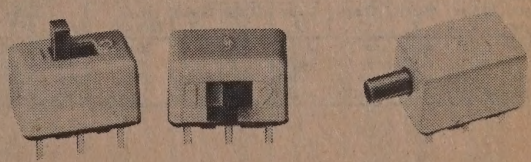
*When using more than one rotor, a stop is needed between each rotor to prevent contacts from shorting each other.

SPECIFICATIONS

Voltage: 60 volts maximum, AC/DC. **Current:** Switching, 0.5 amp maximum; carrying, 1 amp maximum. **Operating Temperature:** −40° to +85° C. **Contact Resistance:** Less than 50 milliohms. **Dielectric:** 500 volts rms. **Capacitance:** 0.3 pF between contacts. **Contacts:** Non-shorting gold plated. **Terminals:** Gold plated.

SLIDE AND PUSHBUTTON PC BOARD SWITCHES

For printed circuit board manual switching applications where high reliability, low profile and high packaging density are required. Siemens has developed three new switches—two slide and one momentary pushbutton. These switches are built to conform to the material specifications of MIL Std. 202C with regard to shock, vibration, humidity and temperature. Gold plated terminals on 0.2″ grid spacing. Gold plated contacts have low contact resistance. Size, .350″ above board x .579″ l. x .390″ w. (actuators not included). DPDT contact configuration. Plastic parts of switch are made of Lexan*.



Siemens Number	Type	Net Each, Lots of 1-9	10-49	50-99	100-499
C42315-A60-A1	Top handle	$2.75	$2.22	$1.87	$1.64
C42315-A60-A2	Side handle	2.75	2.22	1.87	1.64
C42315-A60-A3	Momentary pushbutton	2.75	2.22	1.87	1.64

*Reg. GE trademark.

SPECIFICATIONS

Voltage: 60 VDC/VAC max. **Current:** Switching, 0.5 amps max.; carry, 1 amp max. **Operating Temperature:** −40° C to +85° C. **Contact Resistance:** Less than 20 milliohms. **Contacts:** Non-shorting DPDT gold plated. **Dielectric:** 500 volts rms.

DUAL CHANNEL FETs (TO-71)

BV_{GSS} = 50 V min. except U257, 2N5911, 2N5912, 25 V; 2N5515–2N5523, 2N5564, 40 V. Ratings given are maximum.

Siliconix Type	V_{GS1}-V_{GS2} mV	V_{GS}/T µV/°C	I_{GS1}-I_{G2}* nA	I_G pA	V_P V	I_{DSS} mA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
SU2365	5.0	10.0	5.0	–100	–2.5	10.0	$ 5.70	$ 4.00
SU2365A	5.0	10.0	0.5	–20	–2.5	10.0	6.20	4.35
SU2366	5.0	10.0	5.0	–100	–2.5	10.0	5.00	3.50
SU2366A	10.0	10.0	0.5	–20	–2.5	10.0	5.50	3.85
SU2367	5.0	25.0	5.0	–100	–2.5	10.0	4.60	3.20
SU2367A	10.0	25.0	0.5	–20	–2.5	10.0	5.00	3.50
SU2368	5.0	25.0	5.0	–100	–2.5	10.0	3.95	2.75
SU2368A	15.0	25.0	0.5	–20	–2.5	10.0	4.35	3.05
SU2369	5.0	40.0	5.0	–100	–2.5	10.0	3.15	2.20
SU2369A	20.0	40.0	0.5	–20	–2.5	10.0	3.50	2.45
U231†	5.0	10.0	10.0	50	4.5	5.0	5.50	3.85
U232†	10.0	25.0	10.0	50	4.5	5.0	4.50	2.15
U233†	15.0	50.0	10.0	50	4.5	5.0	4.00	2.80
U234†	20.0	75.0	10.0	50	4.5	5.0	3.20	2.25
U235†	25.0	100.0	10.0	50	4.5	5.0	2.90	2.05
U257‡	100.0	.....	.....	.....	5.0	40.0	3.55	2.50
U401	5.0	10.0	.....	–15	–2.3	10.0	5.70	4.00
U402	10.0	10.0	.....	–15	–2.3	10.0	5.00	3.50
U403	10.0	25.0	.....	–15	–2.3	10.0	4.55	3.20
U404	15.0	25.0	.....	–15	–2.3	10.0	3.75	2.90
U405	20.0	40.0	.....	–15	–2.3	10.0	3.15	2.20
U406	40.0	80.0	.....	–15	–2.3	10.0	2.70	1.90
U421‡	10.0	10.0	.....	–0.1	–2.0	10.0	14.00	9.80
U422‡	15.0	25.0	.....	–0.1	–2.0	10.0	11.70	8.20
U423‡	25.0	40.0	.....	–0.1	–2.0	10.0	8.00	5.60
U424‡	10.0	10.0	.....	–0.5	–3.0	18.0	11.45	8.00
U425‡	15.0	25.0	.....	–0.5	–3.0	18.0	7.60	5.30
U426‡	25.0	40.0	.....	–0.5	–3.0	18.0	5.85	4.10
U430#	1.0	.....	1.0	–150	–4.0	30.0	8.05	5.65
U431#	1.0	.....	1.0	–150	–6.0	60.0	8.05	5.65
2N3921	5.0	10.0	.....	250	2.7	10.0	9.70	6.80
2N3922	5.0	25.0	.....	250	2.7	10.0	6.60	4.60
2N3954	5.0	0.8	10	–50	–2.0	5.0	5.30	3.70
2N3954A	5.0	0.4	10	–50	–2.0	5.0	6.05	4.25
2N3955	10.0	2.0	10	–50	–2.0	5.0	3.85	2.70
2N3955A	5.0	1.2	10	–50	–2.0	5.0	4.50	3.15
2N3956	15.0	4.0	10	–50	–2.0	5.0	3.45	2.40
2N3957	20.0	6.0	10	–50	–2.0	5.0	2.55	1.80
2N3958	25.0	8.0	10	–50	–2.0	5.0	2.00	1.40
2N4084	15.0	10.0	.....	250	2.7	10.0	6.00	4.20
2N4085	15.0	25.0	.....	250	2.7	10.0	5.30	3.70
2N5045	5.0	5.0	10	–25	–4.5	8.0	7.15	5.00
2N5046	10.0	10.0	10	–25	–4.5	8.0	6.35	4.45
2N5047	15.0	15.0	10	–25	–4.5	8.0	5.15	3.60
2N5196	5.0	5.0	5.0	15	4.0	7.0	9.85	6.90
2N5197	5.0	10.0	5.0	15	4.0	7.0	7.55	5.30
2N5198	10.0	20.0	5.0	15	4.0	7.0	6.15	4.30
2N5199	15.0	40.0	5.0	15	4.0	7.0	5.35	3.75
2N5452	5.0	0.4	1.0	–100	–4.5	5.0	9.20	6.45
2N5453	10.0	0.8	1.0	–100	–4.5	5.0	7.80	5.45
2N5454	15.0	2.0	1.0	–100	–4.5	5.0	4.85	3.40
2N5515	5.0	5.0	10.0	100	4.0	7.5	12.07	8.55
2N5516	5.0	10.0	10.0	100	4.0	7.5	9.85	6.90
2N5517	10.0	20.0	10.0	100	4.0	7.5	7.45	5.20
2N5518	15.0	40.0	10.0	100	4.0	7.5	5.50	3.90
2N5519	5.0	5.0	10.0	100	4.0	7.5	5.15	3.60
2N5520	5.0	5.0	10.0	100	4.0	7.5	16.15	11.30
2N5521	5.0	10.0	10.0	100	4.0	7.5	14.15	9.90
2N5522	10.0	20.0	10.0	100	4.0	7.5	10.20	7.15
2N5523	15.0	40.0	10.0	100	4.0	7.5	8.15	5.70
2N5545	5.0	10.0	5.0	50	4.5	8.0	7.15	5.00
2N5546	10.0	20.0	5.0	50	4.5	8.0	6.35	4.45
2N5547	15.0	40.0	5.0	50	4.5	8.0	5.00	3.50
2N5564	5.0	10.0	.....	.....	3.0	30.0	8.45	5.90
2N5565	25.0	25.0	.....	.....	3.0	30.0	7.05	4.95
2N5902‡	5.0	5.0	2.0	3	4.5	0.5	15.35	10.75
2N5903‡	5.0	10.0	2.0	3	4.5	0.5	10.80	7.55
2N5904‡	10.0	20.0	2.0	3	4.5	0.5	7.35	5.15
2N5905‡	15.0	40.0	2.0	1	4.5	0.5	5.05	3.55
2N5906‡	5.0	5.0	0.2	1	4.5	0.5	18.50	12.95
2N5907‡	5.0	10.0	0.2	1	4.5	0.5	12.80	8.95
2N5908‡	10.0	20.0	0.2	3	4.5	0.5	8.80	6.15
2N5909‡	15.0	40.0	0.2	1	4.5	0.5	6.05	4.25
2N5911‡	10.0	20.0	20.0	100	5.0	40.0	9.85	6.90
2N5912‡	15.0	40.0	20.0	100	5.0	40.0	5.95	4.15
DU4340	Two 2N4340's						3.90	3.10

*At 125° C. †SI-71 case. ‡TO-78 case.

N-CHANNEL DUAL GATE MOS FETs

Siliconix Type	I_{GSS} (nA Max) Gate 1	I_{GSS} (nA Max) Gate 2	BV_{GSS} (V Max) Gate 1	BV_{GSS} (V Max) Gate 2	$V_{GS(OFF)}$ (V Max) Gate 1	$V_{GS(OFF)}$ (V Max) Gate 2	I_{DS} (mA Max)	Net Each, Lots of 1-99	Net Each, Lots of 100-999
3N187	±50	±50	±13	±13	–4	–4	30	$2.55	$1.80
3N201	±10	±10	±30	±30	–5	–5	30	1.55	1.10
3N202	±10	±10	±30	±30	–5	–5	30	1.45	1.00
3N203	±10	±10	±30	±30	–5	–5	15	1.45	1.00

VOLTAGE CONTROLLED RESISTORS

Suffix denotes channel material.

Siliconix Type	Min.-Max. V_P Volts	Typ. r_{DS} at V_{GS} = 0 Ohms	Typ. r_{DS} at V_{GS} = 0.8 V_P Ohms	Typ. r_{DS} at V_{GS} = V_P Megohms	Net Each, Lots of 1-99	Net Each, Lots of 100-999
VCR2N	3.5–7	40	300	>50	$ 1.45	$ 1.00
VCR3P	3.5–7	120	500	>50	1.80	1.25
VCR4N	3.5–7	400	3000	>50	1.45	1.00
VCR5P	3.5–7	600	4500	>50	1.80	1.25
VCR6P	2–4	650	4200	>50	1.80	1.25
VCR7N	2.5–5	6K	42K	>50	1.45	1.00
VCR10N	8–12	150	.....	.....	5.00	3.50
VCR11N	Dual VCR10N 5%*			200‡	18.20	12.75
VCR12N	Quad VCR10N 10%*			200‡	48.05	38.45
VCR13N	Quad VCR10N 5%*			200‡	60.00	48.00
VCR20N	15–25	80	160	>50	10.00	8.00

*Max. r_{RD} match to 2 Kohms. ‡Ohms.

CURRENT REGULATOR DIODES (TO-18)

Siliconix Type	I_{F2} (Nom mA ±10%)	Z_D (MΩ Min)	Z_K (MΩ Min)	V_L (V Max)	θ_j (Typ %/°C)	Net Each, Lots of 1-99	Net Each, Lots of 100-999
CR022	0.22	13.0	2.75	1.0	+.075	$3.50	$2.45
CR024	0.24	10.0	2.35	1.0	+.060	3.50	2.45
CR027	0.27	9.0	1.95	1.0	+.040	4.25	2.95
CR030	0.30	8.0	1.60	1.0	+.020	3.50	2.45
CR033	0.33	6.6	1.35	1.0	0	3.90	2.75
CR039	0.39	4.10	1.00	1.05	–.027	3.50	2.45
CR043	0.43	3.30	0.87	1.05	–.045	3.90	2.75
CR047	0.47	2.70	0.75	1.20	–.060	3.50	2.45
CR056	0.56	1.90	0.56	1.30	–.090	3.50	2.45
CR062	0.62	1.55	0.47	1.15	–.110	2.80	1.95
CR068	0.68	1.35	0.400	1.20	–.010	2.80	1.95
CR075	0.75	1.15	0.335	1.25	–.025	2.80	1.95
CR082	0.82	1.00	0.240	1.29	–.040	2.80	1.95
CR091	0.91	0.88	0.115	1.35	–.060	2.50	1.75
CR100	1.00	0.80	0.205	1.40	–.075	2.50	1.75
CR110	1.10	0.70	0.180	1.45	–.090	2.50	1.75
CR120	1.20	0.64	0.155	1.50	–.105	2.50	1.75
CR130	1.30	0.58	0.135	1.55	–.120	2.30	1.60
CR140	1.40	0.54	0.115	1.60	–.130	2.30	1.60
CR150	1.50	0.51	0.105	1.65	–.040	2.30	1.60
CR160	1.60	0.475	0.092	1.75	0	2.30	1.60
CR180	1.80	0.420	0.074	1.85	–.010	2.30	1.60
CR200	2.00	0.395	0.061	1.95	–.025	2.30	1.60
CR220	2.20	0.370	0.052	2.00	–.035	2.30	1.60
CR240	2.40	0.345	0.044	2.15	–.045	2.30	1.60
CR270	2.70	0.320	0.035	2.25	–.055	2.30	1.60
CR300	3.00	0.300	0.029	2.35	–.070	2.30	1.60
CR330	3.30	0.280	0.024	2.50	–.080	2.30	1.60
CR360	3.60	0.265	0.020	2.60	–.085	2.30	1.60
CR390	3.90	0.255	0.017	2.75	–.095	2.30	1.60
CR430	4.30	0.245	0.014	2.90	–.110	2.30	1.60
CR470	4.70	0.235	0.012	2.90	–.120	2.30	1.60

LOW-LEAKAGE PICO AMPERE DIODES

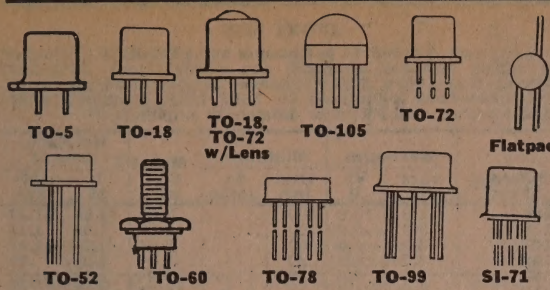
Siliconix Type	TO	IR (pA Max)	BVR (V Min)	V_F (V Max)	C (pF)	I_{R1}-I_{R2} (pA Max)	C_1-C_2 (pF Max)	Net Each, Lots of 1-99	Net Each, Lots of 100-999
DPAD1*	78	–1.0	–45	1.5	0.8	0.1	0.2	$4.80	$3.35
DPAD2*	72	–2.0	–45	1.5	0.8	0.2	0.2	4.15	2.90
DPAD5*	72	–5.0	–45	1.5	0.8	0.5	0.2	3.85	2.70
DPAD10*	72	–10.0	–35	1.5	2.0	1.0	0.2	3.20	2.25
DPAD20*	72	–20.0	–35	1.5	2.0	2.0	0.2	2.15	1.50
DPAD50*	72	–50.0	–35	1.5	2.0	5.0	0.2	1.85	1.30
DPAD100*	72	–100.0	–35	1.5	2.0	10.0	0.2	1.70	1.20
PAD1	18	–1.0	–45	1.5	0.8	.....	.....	2.20	1.55
PAD2	18	–2.0	–45	1.5	0.8	.....	.....	1.95	1.35
PAD5	18	–5.0	–45	1.5	0.8	.....	.....	1.80	1.25
PAD10	18	–10.0	–35	1.5	2.0	.....	.....	1.50	1.05
PAD20	18	–20.0	–35	1.5	2.0	.....	.....	1.00	.70
PAD50	18	–50.0	–35	1.5	2.0	.....	.....	.86	.60
PAD100	18	–100.0	–35	1.5	2.0	.....	.....	.79	.55

*Dual

OUR STOCK IS COMPLETE AND UP TO DATE.

WRITE FOR ADDITIONAL INFORMATION ON

ANY NEW OR UNLISTED ITEMS



N-CHANNEL AF-RF-UHF, RF POWER

RF—U183, U184: NF = 2.5 dB at 100 MHz. **RF Power**—U221, U222, U244 and U266. **General Purpose RF**—2N3823: NF = 200 dB at 10 Hz (2N3823, 2.5 dB at 100 MHz). **AF-RF**—2N4220–2N4224. **UHF**—2N4416–2N4417: UHF = 400 MHz; G_{PS} = 10 dB. 2N5397, 2N5398: UHF = 450 MHz; g_{ps} = 15 dB.

Siliconix Type	Case TO-	Maximum C_{rss} pF	Maximum I_{DSS} mA	Minimum I_{GSS} nA	Minimum BV_{GSS} V	Minimum g_{fs} µmho	Net Each, Lots of 1-99	Net Each, Lots of 100-999
U183	72	4.0	20.0	2.0	25	2000	$ 1.20	$ 0.85
U184	72	1.0	30.0	1.0	25	3000	1.35	.95
U221	5	6.0	110.0	1.0	50	15,000	11.00	7.70
U222	5	6.0	250.0	1.0	50	20,000	13.85	9.70
2N3821	72	3.0	2.5	0.1	50	1500	1.95	1.35
2N3822	72	3.0	10.0	0.1	50	3000	1.70	1.20
2N3823	72	2.0	20.0	0.5	50	3500	1.45	1.00
2N4220	72	2.0	3.0	0.1	30	1000	1.20	.85
2N4220A*	72	2.0	3.0	0.1	30	1000	1.45	1.00
2N4221	72	6.0	6.0	0.1	30	2000	1.20	.85
2N4221A*	72	2.0	6.0	0.1	30	2000	1.45	1.00
2N4222	72	2.0	15.0	0.1	30	2500	1.20	.85
2N4222A*	72	2.0	15.0	0.1	30	2500	1.45	1.00
2N4223†	72	2.0	18.0	2.5	30	3000	1.05	.75
2N4224†	72	2.0	20.0	0.5	30	2000	1.05	.75
2N4416	72	0.8	15.0	0.1	30	4500	1.45	1.00
2N4416A	72	0.8	15.0	0.1	35	4500	1.70	1.20
2N4417	‡	.....	15.0	.01	30	4500	3.80	2.65
2N5397	72	1.2	30.0	0.1	25	6000	2.35	1.65
2N5398	72	1.3	40.0	0.1	25	5500	2.20	1.55

*NF = 2.5 dB at 100 Hz. †NF = 5.0 dB at 200 MHz. ‡OD81 case.

N-CHANNEL LOW NOISE

Siliconix Type	Case TO-	Max. NF# dB	Max. I_{GSS} nA	Min. BV_{GSS} V	Max. I_{DSS} mA	Min. g_{fs} µmho	Net Each, Lots of 1-99	Net Each, Lots of 100-999
2N3089*	18	3.0†	1.0	30	0.5	300	$ 2.80	$ 1.95
2N3089A*	18	0.5‡	1.0	30	0.5	300	6.45	4.50
2N4338	18	1	0.1	50	0.6	600	1.45	1.00
2N4339§	18	1	0.1	50	1.5	800	1.30	.90
2N4340§	18	1	0.1	50	3.6	1300	1.30	.90
2N4341	18	1	0.1	50	9.0	2000	1.70	1.20
2N4867	72	10.0	0.25	40	1.2	700	4.85	3.40
2N4867A	72	5.0	0.25	40	1.2	700	10.15	7.10
2N4868	72	10.0	0.25	40	3.0	1000	4.55	3.20
2N4868A	72	5.0	0.25	40	3.0	1000	9.50	6.65
2N4869	72	10.0	0.25	40	7.5	1300	3.50	2.45
2N4869A	72	5.0	0.25	40	7.5	1300	9.20	6.45

P-CHANNEL LOW NOISE

U168	18	25	30	20	6.0	800	$ 2.95	$ 2.05
2N3578	18	18	15	20	2.5	1500	5.50	3.85

*Low noise amplifier. †At f = 10 Hz. ‡At f = 15 kHz. §Also available in Flatpac. #At f = 1 kHz.

P-CHANNEL ANALOG SWITCHING

BV_{GSS} = 30 V min.

Siliconix Type	Case TO-	Maximum r_{DS} Ohm	Maximum C_{rss} pF	Maximum I_{DSS} mA	Min. g_{fs} µmho	Max. I_{GSS} nA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
P1086E	106	75	10	−10	.....	2	$ 0.89	$ 0.62
P1087E	106	150	10	−5	.....	2	.94	.66
2N3376	72	1500	3	6	800	3	3.00	2.10
2N3378	72	750	3	20	1500	3	6.15	4.30
2N3380	72	600	3	20	1500	3	3.85	2.70
2N3382	72	300	6	30	4500	15	3.95	2.75
2N3384	72	180	6	30	7500	15	7.05	4.95
2N3386	72	150	6	30	7500	15	3.95	2.75
2N5114	18	75	7	15	.....	0.5	3.35	2.35
2N5115	18	100	7	60	.....	0.5	3.30	2.30
2N5116	18	150	7	25	.....	0.5	3.15	2.20

N-CHANNEL ANALOG SWITCHING (TO-18)

Maximum ratings except as otherwise noted.

Siliconix Type	r_{DS} Ohms	ID (OFF) nA	C_{rss} pF	Min. BV_{GSS} V	I_{DSS} mA	I_{SGSS} nA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
U200	150	1	8	30	25	1	$ 2.65	$1.85
U201	75	1	8	30	75	1	2.50	1.75
U202	50	1	8	30	150	1	2.85	2.00
U290*	2.5	0.5	30	30	500†	0.5	13.25	9.30

*TO-52 case. †Minimum.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

N-CHANNEL ANALOG SWITCHING (CONT'D)

Siliconix Type	r_{DS} Ohms	ID (OFF) nA	C_{rss} pF	Min. BV_{GSS} V	I_{DSS} mA	I_{GGSS} nA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
U291§	4.0	0.5	30	30	300‡	0.5	$14.25	$10.00
2N3684†	600	150	1.2	50	7.5	0.1	1.65	1.15
2N3685†	800	150	1.2	50	3.0	0.1	1.65	1.15
2N3686†	1200	150	1.2	50	1.2	0.1	2.00	1.40
2N3687†	2400	150	1.2	50	0.5	0.1	2.15	1.50
2N3824†	250	0.1	3	50	.....	0.1	1.30	.90
2N3966	220	1.0	1.5	−30	20	0.1	3.15	2.20
2N3970	30	0.25	6	40	150	0.25*	2.55	1.80
2N3971	60	0.25	6	40	75	0.25*	1.45	1.00
2N3972	100	0.25	6	40	30	0.25*	1.45	1.00
2N4091	30	0.2	5	40	30‡	0.2*	1.10	.77
2N4092	50	0.2	5	40	15‡	0.2*	1.07	.75
2N4093	80	0.2	5	40	8‡	0.2*	1.10	.77
2N4391	30	0.1	3.5	40	150	0.1	1.10	.77
2N4392	60	0.1	3.5	40	75	0.1	1.07	.75
2N4393	100	0.1	3.5	40	30	0.1	1.10	.77
2N4445	5.0	3.0	35	−25	150	−3.0	7.05	4.95
2N4446	10	3.0	35	−25	100	−3.0	6.50	4.55
2N4447	6.0	3.0	35	−20	150	−3.0	6.70	4.70
2N4448	12	3.0	35	−20	100	−3.0	6.05	4.25
2N4856*	25	0.25	0.8	40	50‡	0.25	2.70	1.90
2N4856A	25	0.25	0.8	40	50‡	50‡	4.15	2.90
2N4857*	40	0.25	0.8	40	100	0.25	2.30	1.60
2N4857A	40	0.25	0.8	40	100	0.25	2.55	1.80
2N4858*	60	0.25	0.8	40	80	0.25	1.85	1.30
2N4858A	60	0.25	0.8	40	80	0.25	2.20	1.55
2N4859*	25	0.25	0.8	30	50‡	0.25	2.20	1.55
2N4859A	25	0.25	0.8	30	50‡	0.25	2.30	1.60
2N4860*	40	0.25	0.8	30	100	0.25	2.00	1.40
2N4860A	40	0.25	0.8	30	100	0.25	2.45	1.70
2N4861*	60	0.25	0.8	30	80	0.25	1.85	1.30
2N4861A	60	0.25	0.8	30	80	0.25	2.05	1.45
2N5432§	5	0.2	15	25	150‡	0.2	7.45	5.20
2N5433§	7	0.2	15	25	100‡	0.2	7.15	5.00
2N5434§	10	0.2	15	25	30‡	0.2	7.80	5.45

*I_{DGO} rating. †TO-72 case. ‡Minimum. §TO-52 case. *JAN and JANTX types available.

P-CHANNEL GENERAL PURPOSE FETs

Siliconix Type	Case TO-	Max. I_{GSS} nA	Min. BV_{GSS} V	Max. I_{DSS} mA	Min. g_{fs} µmho	Max. C_{iss} pF	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
U110	18	4	20	1	110	6	$2.80	$1.95
U112	18	10	20	9	1000	17	1.55	1.10
U146	18	10	20	0.025*	60	6	2.05	1.45
U147	18	20	20	0.065*	180	10	1.80	1.25
U148	18	60	20	0.2*	540	17	1.35	.95
U149	18	200	20	0.44*	1400	30	1.35	.95
2N2606†	18	1	30	0.5	110	6	3.95	2.75
2N2607†	18	3	30	1.5	330	10	2.50	1.75
2N2608†	18	10	30	4.5	1000	17	2.05	1.45
2N2609†	18	30	30	10	2500	30	2.20	1.55
2N2841	18	1	30	0.125	60	6	3.20	2.25
2N2842	18	3	30	0.325	180	10	2.80	1.95
2N2843	18	10	30	1	540	17	1.35	.95
2N2844	18	30	30	2.2	1400	30	2.80	1.95
2N3328	72	1	20	1	100	4	4.20	2.95
2N3329	72	10	20	3	1000	32	2.20	1.55
2N3330	72	10	20	6	1500	32	2.05	1.45
2N3331	72	10	20	15	2000	32	2.50	1.75
2N3332	72	10	20	−6	1000	32	2.00	1.40
2N3909	72	10	20	15	1000	32	1.20	.85

*Minimum. †JAN type available.

N-CHANNEL GENERAL PURPOSE FETs

NF4445	52	3	25	150	—	50	$6.70	$4.70
NF4446	52	3	25	100	—	50	6.00	4.20
NF4447	52	3	20	150	—	50	6.35	4.45
NF4448	52	3	20	100	—	50	5.70	4.00
NF580	52	1	25	—	—	25	16.00	11.20
NF581	52	1	25	—	—	35	11.50	7.75
NF582	52	1	25	—	—	30	10.35	7.25
NF583	52	1	25	—	—	30	8.00	5.60
NF584	52	30	15	—	—	35	8.80	6.15
NF585	52	30	15	—	—	25	7.05	4.95
U197	18	0.5	30	1	200	7	1.80	1.25
U198	18	0.5	30	6	600	7	1.55	1.10
U199	18	0.5	30	20	1500	7	1.30	.90
U1715	39	5	125	50	—	25	9.35	6.55
U328	39	2	275	60	2500	25	4.50	3.15
U329	39	2	200	60	2500	25	3.50	2.45
U330	39	2	275	20	1500	25	3.80	2.65
U331	39	2	200	20	1500	25	3.00	2.10
2N3066	18	1	50	4	400	10	1.70	1.20
2N3067	18	1	50	1	300	10	1.35	.95
2N3068	18	1	50	0.25	200	10	2.00	1.40
2N3069	18	1	50	10	1000	15	3.55	2.50
2N3070	18	1	50	2.5	750	15	1.55	1.10
2N3071	18	1	50	0.6	500	15	2.85	2.00
2N3365	18	5	40	4	400	15	1.35	.95
2N3366	18	5	40	1	250	15	1.20	.85
2N3367	18	5	40	0.25	100	15	1.70	1.20
2N3368	18	5	40	12	1000	20	1.00	.70
2N3369	18	5	40	2.5	600	20	1.15	.80
2N3370	18	5	40	0.6	300	20	1.35	.95
2N3436	18	0.5	50	15	2500	18	1.50	1.05
2N3437	18	0.5	50	50	1500	18	1.35	.95
2N3438	18	0.5	50	1	800	18	1.85	1.30

N-CHANNEL GENERAL PURPOSE FETs CONTINUED ON FOLLOWING PAGE

N-CHANNEL GENERAL PURPOSE FETs (Cont'd.)

Siliconix Type	Case TO-	Max. I_{GSS} nA	Min. BV_{GSS} V	Max. g_{fs} μmho	Min. g_{fs} μmho	Max. C_{iss} pF	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3452	72	0.1	50	4	200	6	$2.20	$1.55
2N3453	72	0.1	50	1	150	6	2.00	1.40
2N3454	72	0.1	50	0.25	100	6	2.35	1.65
2N3455	72	0.04	50	4	400	5	2.35	1.65
2N3456	72	0.04	50	1	300	5	2.20	1.55
2N3457	72	0.25	50	0.25	150	5	2.65	1.85
2N3458	18	0.25	50	15	2500	18	1.45	1.00
2N3459	18	0.25	50	4	1500	18	1.45	1.00
2N3460	18	0.25	50	1	800	18	1.80	1.25
2N4117	72	0.01	40	0.09	70	3	2.45	1.70
2N4117A	72	0.001	40	0.09	70	3	2.70	1.90
2N4118	72	0.01	40	0.24	80	3	1.95	1.35
2N4118A	72	0.001	40	0.24	80	3	3.20	2.25
2N4119	72	0.01	40	0.6	100	3	1.70	1 20
2N4119A	72	0.001	40	0.6	100	3	3.00	2.10
2N5358	72	100	40	1	1000	6	2.15	1.50
2N5359	72	100	40	1	1200	6	2.05	1.45
2N5360	72	100	40	3	1400	6	2.05	1.45
2N5361	72	100	40	5	1500	6	1.85	1.30
2N5362	72	100	40	8	2000	6	2.05	1.45
2N5363	72	100	40	14	2500	6	2.05	1.45
2N5364	72	100	40	18	2700	6	2.55	1.80
2N5556	72	0.1	30	2	1500	6	2.00	1.40
2N5557	72	0.1	30	5	1500	6	1.85	1.30
2N5558	72	0.1	30	10	1500	6	1.70	1.20
2N5647	72	0.01	50	0.6	300	3	5.00	3.50
2N5648	72	0.01	50	1.0	400	3	4.45	3.10
2N5649	72	0.01	50	1.6	450	3	4.70	3.30

N-CHANNEL WIDEBAND AMPLIFIERS (TO-72)

BV_{GSS} = 30 volts min. C_{iss} = 2.0 pF max. C_{rss} = 0.5 pF max.

Siliconix Type	Maximum I_{GSS} nA	Maximum V_P V	Minimum I_{DSS} mA	Minimum g_{fs} μmho	Maximum r_{DS} Ohms	Maximum I_D (OFF) nA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
U273	0.005	3	0.5	500	.....	.....	$3.20	$2.25
U273A	0.002	3	0.5	500	.....	.....	3.80	2.65
U274	0.005	5	1.0	600	.....	.....	3.00	2.10
U274A	0.002	5	1.0	600	.....	.....	3.55	2.50
U275	0.005	7	3.0	800	.....	.....	3.20	2.25
U275A	0.002	7	3.0	800	.....	.....	3.80	2.65

P-CHANNEL CONSUMER-INDUSTRIAL (TO-18)

BV_{GSS} = 40 V min. C_{iss} = 20 pF max. C_{rss} = 5.5 pF max.

U300	0.1	10	30.0	8000	60	0.1	$4.15	$2.90
U301	0.1	6	15.0	8000	100	0.1	3.55	2.50

P-CHANNEL SWITCHES, CHOPPERS, COMMUTATORS (TO-18)

BV_{GSS} = 30 V min. C_{iss} = 27.0 pF max. C_{rss} = 7.0 pF max.

U304	0.5	10	30.0	.....	85	0.5	$3.35	$2.35
U305	0.5	6	15.0	.....	110	0.5	3.30	2.30
U306	0.5	4	5.0	.....	175	0.5	3.15	2.20

N-CHANNEL VHF-UHF

BV_{GSS} = 25 V max. V_P = 6.0 V max. I_{GSS} = 0.1 nA max. (U310, 0.5 nA).

Siliconix Type	Case	Minimum I_{DSS} mA	Minimum g_{fs} μmho	Maximum C_{iss} pF	Maximum C_{rss} pF	Net Each, Lots of 1-99	Net Each, Lots of 100-999
U310	TO-52	20.0	10,000	7.5	2.5	$ 4.20	$2.95
U312	TO-52	10.0	6000	5.0	1.5	3.45	2.40
U314	OD-81	1.0	6000	5.0	1.2	3.95	2.75
U315	OD-82	1.0	6000	5.0	1.2	4.30	3.00
U316	OD-81	30	20	3.0	3.0	6.45	4.50
U317	OD-81	60	18	3.0	3.0	6.45	4.50
U320	TO-5	100.0	5500	30.0	15.0	10.35	7.25
U321	TO-5	80.0	5500	30.0	15.0	10.85	7.60
U322	TO-5	200.0	5500	20.0	15.0	10.35	7.25

N-CHANNEL PHOTOFETS

In TO-72 case with lens. S_{IN} = 1.0 μA/mW/cm² min. I_{GSS} = 0.25 nA max. at 40 volts. Spectral response = 0.4–1.1 microns.

P-236—Net Ea., Lots of 1–99..... **$4.65**; 100–999.... **$3.25**
P-237—Net Ea., Lots of 1–99..... **4.30**; 100–999.... **3.00**
P-238—Net Ea., Lots of 1–99..... **3.95**; 100–999.... **2.75**

P-CHANNEL PHOTOFET P102

In TO-18 case with lens. S_{IN} = 0.4 μA/mW/cm² min. I_{GSS} = 10 nA max. at 30 volts. Spectral response = 0.4–1.1 microns.

P-102—Net Ea., Lots of 1–99..... **$3.20**; 100–999.... **$2.25**

N-CHANNEL MOS FETS (TO-18)

Depletion except M116 and M117 are enhancement types. BV_{DSS} = 20 V min. (M116, M117, 30 V min.).

Siliconix Type	Typical $V_{GS(th)}$ V	Typical r_{DS} (ON) Ohms	Typical I_D (OFF) nA	Maximum I_{GSS} nA	Maximum C_{gd} pF	Net Each, Lots of 1-99	Net Each, Lots of 100-999
M100	5.0*	150	1.0	1.5	1.6†	$ 2.95	$ 2.05
M101	8.0*	300	1.0	.....	1.6†	2.95	2.05
M116§•	2.0	95	10.0	0.1	2.5‡	2.80	1.95
M117•	2.0	95	10.0	0.001	2.5‡	2.85	2.00
2N3631	6.0*	100	0.1	.....	1.6†	3.00	2.10

EPOXY FETS

In epoxy case. **E105–E114 N-Channel** and **E174–E176 P-Channel** for analog switches, choppers and commutators. **E201–E232 N-Channel** and **E270, E271 P-Channel** for general-purpose amplifiers. **E300–E305 N-Channel** for VHF/UHF amplifiers. **E400–E421,** matched dual FETs for differential amplifiers.

Siliconix Type	Maximum I_{GSS} nA	Maximum V_P V	Minimum I_{DSS} mA	Minimum g_{fs} μmho	Max. C_{iss} pF	Net Each, Lots of 1-99	Net Each, Lots of 100-999
E105	3.0	10.0	500	.....	3.0*	$2.05	$1.47
E106	3.0	6.0	200	.....	6.0*	1.90	1.35
E107	3.0	4.5	100	.....	8.0*	2.05	1.47
E108	3.0	10.0	80	.....	8.0*	1.20	.85
E109	3.0	6.0	40	.....	12.0*	1.15	.82
E110	3.0	4.0	10	.....	18.0*	1.25	.87
E111	1.0	3.0	50	.....	30.0*	.43	.30
E112	1.0	1.0	5.0	.....	50.0*	.41	.29
E113	1.0	0.5	2.0	.....	100.0*	.43	.30
E114	1.0	10.0	15.0	.....	150.0*	.43	.30
E174	1.0	10.0	20.0	.....	85.0*	.74	.52
E175	1.0	6.0	7.0	.....	125.0*	.70	.49
E176	1.0	4.0	2.0	.....	250.0*	.77	.54
E201	100.0	1.5	0.2	500	5.0	.50	.35
E202	100.0	4.0	0.9	1000	5.0	.46	.32
E203	100.0	10.0	4.0	1500	5.0	.49	.34
E210	100.0	3.0	2.0	4000	5.0	.57	.40
E211	100.0	4.5	7.0	7000	5.0	.57	.40
E212	100.0	6.0	15.0	7000	5.0	.57	.40
E230	250.0	3.0	0.7	1000	15.0	.57	.40
E231	250.0	5.0	2.0	1500	15.0	.53	.37
E232	250.0	5.0	10.0	2500	15.0	.60	.42
E270	200.0	2.0	2.0	6000	20.0	.83	.58
E271	200.0	4.5	6.0	8000	20.0	.83	.58
E300	500.0	6.0	6.0	4500	5.5	.46	.32
E304	100.0	6.0	5.0	4500	3.0	.46	.32
E305	100.0	3.0	1.0	3000	3.0	.43	.30
E400	200.0	4.5	0.5	1000	4.5	3.75	2.60
E401	200.0	4.5	0.5	1000	4.5	2.45	1.70
E402	200.0	4.5	0.5	1000	4.5	1.45	1.00
E420	500.0	6.0	6.0	4500	3.5	1.80	1.25
F421	500.0	6.0	6.0	4500	3.5	1.45	1.00
E430	150	4.0	30.0	2000	.....	1.55	1.10
E431	150	6.0	60.0	2000	.....	1.55	1.10
J308†	1.0	6.5	12.0	8000	5.0	.67	.47
J309†	1.0	4.0	12.0	10,000	5.0	.79	.55
J310†	1.0	6.5	24.0	8000	5.0	.79	.55
MPF102†	2.0	8.0	20.0	2000	7.0	.56	.39
MPF108†	1.0	8.0	24.0	2000	6.5	.86	.60
MPF109†	1.0	8.0	24.0	800	7.0	.64	.45
MPF111†	100	10.0	100	1000	4.5	.33	.23
MPF112†	50	10.0	100	500	8.0	.33	.23
U1837E	0.25	30.0	25.0	4000	6.0	.57	.40
U1897E	0.2	40.0	30.0	.....	16.0	.57	.40
U1898E	0.2	40.0	15.0	.....	16.0	.50	.35
U1899E	0.2	40.0	8.0	.....	16.0	.57	.40
U1994E	0.1	30.0	15.0	4500	4.0	.71	.50
2N5457†	5.0	6.0	1.0	1000	7.0	.64	.45
2N5458†	9.0	7.0	2.0	1500	7.0	.71	.50
2N5459†	16.0	8.0	4.0	2000	7.0	.71	.50
2N5484†	1.0	3.0	1.0	3000	5.0	.83	.58
2N5485†	1.0	4.0	4.0	3500	5.0	.87	.61
2N5486†	1.0	6.0	8.0	4000	5.0	.87	.61
2N5555†	1.0	1.0	15.0	.....	5.0*	1.00	.70
2N5638†	1.0	0.5	50.0	.....	30.0*	1.30	.92
2N5639†	1.0	0.5	25.0	.....	60.0*	.83	.58
2N5640†	1.0	0.5	5.0	.....	100.0*	1.05	.75
2N5653†	1.0	.....	40.0	.....	10.0	1.20	.83
2N5654†	1.0	.....	15.0	.....	10.0	1.00	.70
2N5668†	2.0	4.0	5.0	1500	7.0	.74	.52
2N5669†	2.0	6.0	10.0	2000	7.0	.67	.47
2N5670†	2.0	8.0	20.0	3000	7.0	.70	.49

*Maximum rps, ohms. †TO-78.

P-CHANNEL MOS FETS (TO-72)

Enhancement except M106, common source, dual and M107, M108, separate sources, dual.

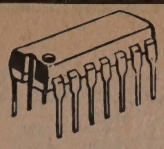
Siliconix Type	Typical $V_{GS(th)}$ V	Typical r_{DS} (ON) Ohms	Maximum I_D (OFF) nA	Maximum I_{GSS} nA	Maximum C_{gd} pF	Net Each, Lots of 1-99	Net Each, Lots of 100-999
M103§	4.2	150	0.2	0.1	4.0‡	$ 2.80	$ 1.95
M104§	4.2	1500	0.1	0.1	0.5‡	2.75	1.90
M106§#	3.7	130	0.2	0.1	4.0‡	6.50	4.55
M107§#	3.7	130	0.2	0.1	4.0‡	6.50	4.55
M108#	3.0	140	0.2	0.001	4.0‡	7.00	4.90
M113§	2.5	90	0.2	0.1	4.0‡	2.70	1.90
M114§	3.0	200	0.2	0.1	4.0‡	2.70	1.90
M119§	3.8	210	0.8	0.25	8.0‡	4.00	2.80
M163	3.2	450	0.2	0.01	0.7†	2.55	1.80
M164	3.2	450	0.4	0.01	0.7	2.30	1.60
MEMS11	6.0	300	.....	−1.0	2.5	4.55	3.20
MEM511C	6.0	150	.....	−1.0	4.0	2.15	1.50
3N163	3.2	450	0.2	0.010	0.7†	2.55	1.80
3N164	3.2	450	0.4	0.010	0.7†	2.30	1.60
3N167§	3.8	18	0.5	0.1	12.0†	12.95	9.05
3N168§	4.0	28	1.0	0.5	12.0†	11.65	8.15

*V_P. †C_{iss} ‡Body guarded. §Gate protected. #TO-99; •TO-72 case.

LARGER QUANTITY PRICES AVAILABLE

Siliconix incorporated Analog Switching Circuits

Flatpac



DIP

TO-5

Siliconix integrated circuit part numbers include letter prefix which denotes function and letter suffixes denote temperature range and package style. Function Letter Prefix: **D**, driver for FET switch; **DG, DGM**, drivers with FET switches; **G**, multiple FET switch; **SI**, second source item. First Letter Suffix: **A**, −55° C to +125° C military service; **B**, −20° C to +85° C industrial service; **C**, 0° C to +70° C industrial service; **D**, −55° C to +85° C industrial service. Final Letter Suffix: **A**, round TO-5; **F**, TO-84, TO-89 Flatpac; **K**, TO-116 ceramic DIP; **L**, TO-86 Flatpac; **P**, metal-ceramic TO-116 DIP; **R**, 24-32 lead DIP.

DRIVERS WITH FET SWITCHES

Siliconix Type	*	†	Switch Configuration and Control	FET Type Switch	Standard Supply Voltages V	Switch Time t_{ON} µs	Switch Time t_{OFF} µs	Input Logic Level for ON Switch	Net Each, Lots of 1-29	30-99	100-999
DGM111AL, P	2	2	SPST 2-channel	PMOS	+10, −20, +5	0.3	1.0	0	$23.00	$18.40	$16.10
DG116AL, P	4	1	4-channel multiplexer	PMOS	+10, −20, 0	0.3	1.0	1	33.25	26.60	23.30
DGM122AL, P	4	2	2-channel double-pole multiplexer	PMOS	+10, −20, +5, 0	0.3	2.0	1	35.60	28.45	24.90
DG123AL, P	5	1	5-channel separate control	PMOS	+10, −20, 0	0.3	1.0	1	36.00	28.80	25.20
DG125AL, P	5	1	5-channel multiplexer	PMOS	+10, −20, +5	0.3	1.0	0	36.00	28.80	25.20
DG126AL, P	4	4	DPST 2-channel	N-JFET	+12, −18, 0	0.6	1.6	1	22.50	18.50	15.95
DG129AL, P	4	4	DPST 2-channel	N-JFET	+12, −18, 0	0.6	1.6	1	28.50	22.80	19.95
DG133AL, P	2	2	SPST 2-channel	N-JFET	+12, −18, 0	0.6	1.6	1	14.20	11.40	9.95
DG134AL, P	2	2	SPST 2-channel	N-JFET	+12, −18, 0	0.6	1.6	1	14.20	11.40	9.95
DG139AL, P	4	4	DPDT	N-JFET	+12, −18, 0	0.8	1.6	.....	28.50	22.80	19.95
DG140AL	4	4	DPST 2-channel	N-JFET	+12, −18, 0	1.0	2.5	1	35.65	28.50	24.95
DG141AL, P	2	2	SPST 2-channel	N-JFET	+12, −18, 0	1.0	2.5	1	27.10	21.60	18.95
DG142AL, P	4	4	DPDT	N-JFET	+12, −18, 0	0.8	1.6	.....	22.50	18.50	15.95
DG143AL, P	2	2	SPDT	N-JFET	+12, −18, 0	0.8	1.6	.....	21.35	17.10	14.95
DG144AL, P	2	2	SPDT	N-JFET	+12, −18, 0	0.8	1.6	.....	20.95	17.25	14.95
DG145AL	4	4	DPDT	N-JFET	+12, −18, 0	1.0	2.5	.....	35.65	28.50	24.95
DG146AL, P	2	2	SPDT	N-JFET	+12, −18, 0	1.0	2.5	.....	27.10	21.65	18.95
DG151AL, P	2	2	SPST 2-channel	N-JFET	+15, −15, 0	1.0	2.5	1	25.10	20.05	17.55
DG152AL, P	2	2	SPST 2-channel	N-JFET	+15, −15, 0	0.6	1.5	1	13.95	11.50	9.95
DG153AL	4	4	DPST 2-channel	N-JFET	+15, −15, 0	1.0	2.5	1	27.20	21.75	19.05
DG154AL, P	4	4	DPST 2-channel	N-JFET	+15, −15, 0	0.6	1.5	1	19.95	15.95	13.95
DG161AL, P	2	2	SPDT	N-JFET	+15, −15, 0	1.0	2.5	.....	23.75	19.50	16.95
DG162AL, P	2	2	SPDT	N-JFET	+15, −15, 0	0.8	1.5	.....	21.35	17.10	14.95
DG163AL	4	4	DPDT	N-JFET	+15, −15, 0	1.0	2.5	.....	27.70	21.75	19.05
DG164AL, P	4	4	DPDT	N-JFET	+15, −15, 0	0.8	1.5	.....	22.50	18.50	15.95
DG171AA	1	1	SPST gate output for RF bypass	PMOS	+10, −20, +5, 0	0.2	0.7	1	13.45	10.75	9.40
DG172AL, P	4	1	4-channel multiplexer	PMOS	+10, −20, +5, 0	0.3	0.75	0	30.80	24.65	21.55
DG173AL, P	4	2	DPDT 2-input "OR" control	PMOS	+10, −20, +5, 0	0.3	0.75	.....	26.45	21.15	18.50
DG175AA	2	2	SPDT	PMOS	+10, −20, +5, 0	0.2	0.4	.....	15.20	12.15	10.65
DG180AA	2	2	SPST 2-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	0	27.50	22.00	19.25
DG180AL, P	2	2	SPST 2-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	0	34.00	27.20	23.80
DG181AA‡	2	2	SPST 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	0	25.00	20.00	17.50
DG182AA‡	2	2	SPST 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	0	25.00	20.00	17.50
DG183AL, P	4	4	DPST 2-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	1	45.60	36.50	31.95
DG184AP‡	4	4	DPST 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	1	41.45	33.15	29.00
DG185AP‡	4	4	DPST 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	1	41.45	33.15	29.00
DG186AA	2	2	SPDT 1-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	1	27.50	22.00	19.25
DG186AL, P	2	2	SPDT 1-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	1	34.00	27.20	23.80
DG187AA‡	2	2	SPDT	N-JFET	+10, −20, +5, 0	0.15	0.08	.....	25.00	20.00	17.50
DG188AA‡	2	2	SPDT	N-JFET	+10, −20, +5, 0	0.15	0.08	.....	25.00	20.00	17.50
DG189AL, P	2	2	SPDT 2-channel	N-JFET	+20, −10, +5, 0	0.30	0.25	1	45.60	36.50	31.90
DG190AP‡	4	4	SPDT 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	.....	41.45	33.15	29.00
DG191AP‡	4	4	SPDT 2-channel	N-JFET	+10, −20, +5, 0	0.15	0.08	.....	41.45	33.15	29.00
DG200AA♯	2	2	SPST 2-channel	CMOS	+15, −15, 0	1.0	0.5	0	12.50	10.00	8.75
DG200AL, P	2	2	SPST 2-channel	CMOS	+15, −15, 0	1.5	1.0	1	18.50	14.80	13.95
DG201AP	4	4	SPST 4-channel	CMOS	+15, −15, 0	1.5	1.0	1	25.00	20.00	17.50
DG501AP	8	1	8-channel MUX, binary decode plus enable	PMOS	+5, −22	1.0	0.6	1	31.50	25.20	22.05
DG503AP	8	1		PMOS	+10, −20	1.0	0.6	1	36.00	28.80	25.20
DG506AR♯•	16	1	16-channel DG501	CMOS	+15, −15, 0	1.5	1.0	1	80.00	64.00	56.00
DG507AR♯•	16	2	8-channel MUX, binary decode plus enable	CMOS	+15, −15, 0	1.5	1.0	1	80.00	64.00	56.00
DG508AP♯•	8	1		CMOS	+15, −15, 0	1.5	1.0	1	40.00	32.00	28.00
DG509AP♯•	8	2	4-channel SPST MUX, binary decode plus enable	CMOS	+15, −15, 0	1.5	1.0	1	40.00	32.00	28.00
DG511AP•	8	2	4-channel DPST MUX	PMOS	+10, −20, 0	1.2	0.4	1	40.00	32.00	28.00

*Sources. †Drains. ‡Low power; fast break-before-make; constant "on" resistance. §Break-before-make-operation; 0.25 µs typical. ♯Complementary MOS; low power. •Break-before-make-operation. **Prices on request.

Same as above except **B** temperature range (−20° C to +85° C). (*) Indicates **P** package available; prices on request.

Siliconix Type	Net Each, Lots of 1-29	30-99	100-999	Siliconix Type	Net Each, Lots of 1-29	30-99	100-999	Siliconix Type	Net Each, Lots of 1-29	30-99	100-999
DGM111BK	$ 7.20	$ 5.75	$ 5.05	DG146BL*	$20.50	$16.40	$14.35	DG183BL*	$22.75	$18.00	$15.90
DGM111BL	11.50	9.20	8.05	DG151BL*	16.45	13.15	11.50	DG184BP	20.70	16.55	14.50
DG116BL*	22.60	18.10	15.80	DG152BL*	10.50	8.65	7.50	DG185BP	20.70	16.55	14.50
DGM122BK	9.00	7.20	6.30	DG153BL	19.10	15.25	13.35	DG186BA	13.75	11.00	9.60
DGM122BL	17.80	14.25	12.45	DG154BL*	14.20	11.35	9.95	DG186BL*	18.15	14.50	12.70
DG123BL	24.00	19.20	16.80	DG161BL*	16.45	13.15	11.50	DG187BA	12.50	10.00	8.75
DG125BL*	24.00	19.20	16.80	DG162BL*	19.10	15.25	13.35	DG188BA	12.50	10.00	8.75
DG126BL	15.00	12.35	10.75	DG163BL	19.10	15.25	13.35	DG189BP	22.75	18.00	15.90
DG129BL	20.80	16.65	14.55	DG164BL*	15.00	12.35	10.75	DG190BP	20.70	16.55	14.50
DG133BL	10.70	8.60	7.50	DG171BA	6.70	5.35	4.70	DG191BP	20.70	16.55	14.50
DG134BL	10.70	8.60	7.50	DG172BK	11.40	9.10	7.45	DG200BA	5.00	4.00	3.50
DG139BL	20.80	16.65	14.55	DG172BL	15.45	12.35	10.80	DG501BK	18.30	14.65	11.00
DG140BL	24.20	19.35	16.95	DG173BK	9.00	7.20	6.30	DG503BK	20.00	16.00	14.00
DG141BL	20.50	16.40	14.35	DG173BL	13.20	10.55	9.20	DG506BR	40.00	32.00	28.00
DG142BL	15.00	12.35	10.75	DG175BA	6.70	5.35	4.70	DG507BR	40.00	32.00	28.00
DG143BL*	15.35	12.30	10.75	DG180BA	13.75	11.00	9.60	DG508BP	20.00	16.00	14.00
DG144BL	15.00	12.35	10.75	DG181BA	12.50	10.00	8.75	DG509BP	20.00	16.00	14.00
DG145BL	27.10	21.65	18.95	DG182BA	12.50	10.00	8.75	DG511BP	20.00	16.00	14.00

See preceding page for integrated circuit ordering information.

DRIVERS WITH PMOS FET SWITCHES

DTL, RTL and TTL compatible. MOS type SI3705 break-before-make switching.

Siliconix Type	Sources	Drains	Switch Configuration and Control	Standard Supply Voltage V	Switch Time t_{ON} µs	Switch Time t_{OFF} µs	Input Logic Level For ON Switch	Net Each, Lots of 1-29	Net Each, Lots of 30-99	Net Each, Lots of 100-999
SI3002AA	2	1	SPDT	+10, −20, 0	1.0	1.5	.....	$22.80	$18.25	$15.95
SI3002BK								7.20	5.75	5.05
SI3705142K*	8	1	SP8T and all OFF binary decode + enable	+5, −22	1.0	1.0	1	21.40	17.10	15.00
SI3705143K*								18.40	14.70	12.90
SI3705192K†								10.70	8.55	7.50
SI3705193K†								9.20	7.35	6.45

*−55° C to +85° C. †0° C to +70° C.

MULTIPLE CHANNEL PMOS SWITCHES

For applications such as sequential switching (commutation), signal processing, modulation and A-to-D converters. The MOS FET is normally OFF and performs a SPST function. **A** Operating Temperature: −55° C to +125° C; BV_{DSS} = −30 V min.; $I_{S(OFF)}$ and I_{GSS} = −0.5 nA max.; $V_{GS(th)}$ = −2 V to −6 V; C_{gs} = 3.0 pF max.; C_{ds} = 0.4 pF max.; C_{sb} = 3.5 pF max. **B** Operating Temperature: −25° C to +85° C; BV_{DSS} = −25 V min.; $I_{S(OFF)}$ and I_{GSS} = −5.0 nA max.; $V_{GS(th)}$ = −2 V to −6 V; C_{ds} = 0.4 pF typ.; C_{sb} = 3.5 pF typ.

Siliconix Type	Sources	Drains	Gates	Switch Type and Description	Pull Up On Gate	Max. r_{DS} at 25° C Condition Best Ohms	Max. r_{DS} at 25° C Condition Worst Ohms	Net Each, Lots of 1-29	Net Each, Lots of 30-99	Net Each, Lots of 100-999
G115AP	6	1	6	SP6T	Yes	100	450	$18.45	$14.75	$12.90
G115BK						125	500	7.50	6.00	5.25
G116AL, P	5	1	5	SPST	Yes	100	450	18.45	14.75	12.90
G116BL						125	500	12.30	9.85	8.60
G118AL, P	6	1	6	SP6T	No	100	450	18.45	14.75	12.90
G118BL						125	500	12.30	9.85	8.60
G119AL	6	2	3	DP3T, 3-channel differential	Yes	100	450	18.45	14.75	12.90
G119BL						125	500	12.30	9.85	8.60
G122AL	4	2	2	DPDT, 2-channel differential	Yes	100	450	15.15	12.10	10.60
G122BL						125	500	11.20	8.95	7.85
G123AL	4	2	4	2 x SPDT	Yes	100	450	15.15	12.10	10.60
G123AP						100	450	15.15	12.10	10.60
G123BK						125	500	7.20	5.75	5.05
G123BL						125	500	11.20	8.95	7.85
G124AL	4	1	4	SP4T	Yes	100	450	15.15	12.10	10.60
G124BL						125	500	11.20	8.95	7.85

DRIVERS FOR FET SWITCHES, LAMPS AND RELAYS

Siliconix Type	Function and Uses	Standard Supply Voltages	Net Each, Lots of 1-29	Net Each, Lots of 30-99	Net Each, Lots of 100-999
D123AL, P	6 separate MOSFET drivers	−20.0	$16.75	$13.40	$11.75
D123BL, P			14.00	11.20	9.80
D125AL, P		−20, +5	16.75	13.40	11.75
D125BK		−20, +2.8	7.00	5.60	3.80
D125BL		−20, +2.8	12.60	10.05	8.80
D129AL, P	4-channel 50 V MOSFET driver w/ decode*	−30, +5,0	25.20	20.15	17.65
D129BK		−20, +5,0	8.55	6.85	6.00
D129BL			12.60	10.05	8.80
D130AA, L	Dual high-speed MOSFET driver	+10, −20,0	24.30	19.45	17.00
D130BA, L			15.10	12.05	10.55
D132AL, P	4-channel 50 V driver w/ decode	+5,0	17.95	14.35	12.55
D132BL, P			11.80	9.45	8.25

*B_V = 40 V. †With latch.

CONSULT OUR STAFF OF ELECTRONICS EXPERTS ON ALL YOUR SPECIAL EQUIPMENT OR COMPONENT NEEDS.

MULTIPLE N- AND P-CHANNEL JEFT SWITCHES

Four sources and four gates. BV_{GSS} = −40 V min. (N-channel); 30 V min. (P-channel). Ratings given are maximum values.

Siliconix Type	†	Switch Type	r_{DS} Ohms	V_P V	I_S (OFF) nA	I_{GSS} nA	$C_{dg}+C_{sg}$ (ON) pF	C_{dg} (OFF) pF
G125AF	4	4XSPST	500	−5	0.05	−0.1	10	2
G126AF	4	4XSPST	250	−10	0.05	−0.1	10	2
G127AF	4	4XSPST	90	−5	0.1	−0.2	40	7
G128AF, P	4	4XSPST	45	−10	0.1	−0.2	40	7
G128BF, P	4	4XSPST	45	−10	0.1	−0.2	40	7
G129AF	1	SP4T	500	−5	0.05	−0.1	10	2
G130AF	1	SP4T	250	−10	0.05	−0.1	10	2
G131AF	1	SP4T	90	−5	0.1	−0.2	40	7
G132AF	1	SP4T	45	−10	0.1	−0.2	40	7
G134AF*	4	4XSPST	1000	8	−0.5	3.0	8	2
G135AF*	4	4XSPST	300	8	−2.5	15.0	80	5

*P-channel; all others are N-channel. †Drains.

PRICES FOR ABOVE SWITCHES

Siliconix Type	Net Each, Lots of 1-29	Net Each, Lots of 30-99	Net Each, Lots of 100-999	Siliconix Type	Net Each, Lots of 1-29	Net Each, Lots of 30-99	Net Each, Lots of 100-999
G125AF	$23.00	$18.40	$16.10	G129AF	$23.00	$18.40	$16.10
G126AF	23.00	18.40	16.10	G130AF	23.00	18.40	16.10
G127AF	29.30	23.45	20.50	G131AF	29.30	23.45	20.50
G128AF	29.30	23.45	20.50	G132AF	29.30	23.45	20.50
G128AP	29.30	23.45	20.50	G134AF	**	**	**
G128BF	14.60	11.65	10.20	G135AF	**	**	**
G128BP	14.60	11.65	10.20				

**Prices on request.

A

I

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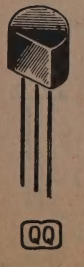
M3


QQ

SILICON TRANSISTORS

NPN MEMORY DRIVER (CASE I)

Collector in electrical contact with case. P_D = 1000 mW at 25° C free air except as otherwise noted. Storage time given is maximum.

TI Type	Min. f_T MHz	Storage Time at I_C nsec	mA	Net Each, Lots of 1-99	100-499	500-999	TI Type	Min. f_T MHz	Storage Time at I_C nsec	mA	Net Each, Lots of 1-99	100-499	500-999
2N2537†	250	20	20	*	*	*	2N3444†	150	40	1000	*	*	*
2N2538†	250	20	20	*	*	*	2N3467**	175	60	500	*	*	*
2N2539‡	250	20	20	*	*	*	2N3468*	150	60	500	*	*	*
2N2540‡	250	20	20	*	*	*	2N3554†	150	65	1000	*	*	*
2N3015†	250	60§	500	*	*	*	2N3724†	300	60	500	*	*	*
2N3244*	175	140	500	*	*	*	2N3724A	300	60	500	*	*	*
2N3245*	150	120	500	*	*	*	2N3725†	300	60	500	*	*	*
2N3252†	200	40	1000	*	*	*	2N3725A	300	60	500	*	*	*
2N3253†*	175	40	1000	*	*	*							

*PNP. †P_D = 800 mW. ‡P_D = 500 mW; Case U. §Turn-off time. *JAN type available.

NPN GENERAL PURPOSE

Collector in electrical contact with case. h_{FE} given is minimum.

TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Each, Lots of 1-99	100-499	500-999	TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Each, Lots of 1-99	100-499	500-999
TI482	I	20	20	*	*	*	2N2194	I	60	20	*	*	*
TI483	I	40	20	*	*	*	2N2194A	I	60	20	*	*	*
TI484	I	40	40	*	*	*	2N2217	I	60	20	*	*	*
2N696	I	60	20	*	*	*	2N2218**	I	60	40	*	*	*
2N697	I	60	40	*	*	*	2N2218A**	I	60	40	*	*	*
2N698	I	120	20	*	*	*	2N2219**	I	60	100	*	*	*
2N699	I	120	40	*	*	*	2N2219A**	I	60	100	*	*	*
2N717	U	60	20	*	*	*	2N2220	U	60	20	*	*	*
2N718	U	60	40	*	*	*	2N2221**	U	60	40	*	*	*
2N718A**	U	75	40	*	*	*	2N2221A**	U	60	40	*	*	*
2N719	U	120	20	*	*	*	2N2222**	U	60	100	*	*	*
2N719A	U	120	20	*	*	*	2N2222A**	U	60	100	*	*	*
2N720	U	120	40	*	*	*	2N2243	I	60	40	*	*	*
2N720A	U	120	40	*	*	*	2N2243A	I	60	40	*	*	*
2N730	U	60	20	*	*	*	2N2270	I	60	50	*	*	*
2N731	U	60	40	*	*	*	2N3036	I	120	50	*	*	*
2N870	U	100	40	*	*	*	2N3053	I	60	50	*	*	*
2N871	U	100	100	*	*	*	2N3114	I	150	30	*	*	*
2N910	U	100	75	*	*	*	2N3903	QQ	40	50	*	*	*
2N911	U	100	35	*	*	*	2N3904	QQ	40	100	*	*	*
2N912	U	100	15	*	*	*	2N4123	QQ	30	50	*	*	*
2N956	U	75	100	*	*	*	2N4124	QQ	25	120	*	*	*
2N1420	I	60	100	*	*	*	2N5058	I	300	35	*	*	*
2N1507	I	60	100	*	*	*	2N5059	I	250	35	*	*	*
2N1613**	I	75	40	*	*	*	A5T2222	M3	60	100	*	*	*
2N1711	I	75	100	*	*	*	A5T3707	M3	30	100	*	*	*
2N1889	I	100	40	*	*	*	A5T3708	M3	30	45	*	*	*
2N1890	I	100	100	*	*	*	A5T3709	M3	30	45	*	*	*
2N1893	I	120	40	*	*	*	A5T3710	M3	30	90	*	*	*
2N1973	I	100	75	*	*	*	A5T3711	M3	30	180	*	*	*
2N1974	I	100	35	*	*	*	A5T3903	M3	60	50	*	*	*
2N1975	I	100	15	*	*	*	A5T3904	M3	60	100	*	*	*
2N2102	I	120	10	*	*	*	A5T4123	M3	30	50	*	*	*
2N2102A	I	120	10	*	*	*	A5T4124	M3	25	120	*	*	*
2N2192, A	I	60	100	*	*	*	A5T5058	M3	300	35	*	*	*
2N2193	I	60	40	*	*	*	A5T5059	M3	250	30	*	*	*
2N2193A	I	60	40	*	*	*							

**JAN and JANTX types available.

PNP GENERAL PURPOSE

Collector in electrical contact with case.

TI Type	Case	Rated V_{CBO} V	h_{fe}	Net Each, Lots of 1-99	100-499	500-999	TI Type	Case	Rated V_{CBO} V	h_{fe}	Net Each, Lots of 1-99	100-499	500-999
2N721	U	50	20	*	*	*	2N3504	U	45	100	*	*	*
2N722	U	50	30	*	*	*	2N3505	U	60	100	*	*	*
2N1131*	I	50	20	*	*	*	2N3905	QQ	40	50	*	*	*
2N1132*	I	50	30	*	*	*	2N3906	QQ	40	100	*	*	*
2N2303	I	50	75	*	*	*	2N4125	QQ	30	50	*	*	*
2N2904**	I	60	40	*	*	*	2N4126	QQ	25	120	*	*	*
2N2904A**	I	60	40	*	*	*	2N5400	QQ	120	40	*	*	*
2N2905**	I	60	100	*	*	*	2N5401	QQ	150	60	*	*	*
2N2905A**	I	60	100	*	*	*	A5T2907	M3	60	100	*	*	*
2N2906**	U	60	40	*	*	*	A5T3644	M3	45	100	*	*	*
2N2906A**	U	60	40	*	*	*	A5T3645	M3	60	100	*	*	*
2N2907**	U	60	100	*	*	*	A5T3905	M3	40	50	*	*	*
2N2907A**	U	60	100	*	*	*	A5T3906	M3	40	100	*	*	*
2N3485	GG	60	40	*	*	*	A5T4058	M3	30	100	*	*	*
2N3485A	GG	60	40	*	*	*	A5T4059	M3	30	45	*	*	*
2N3486	GG	60	100	*	*	*	A5T4060	M3	30	45	*	*	*
2N3486A	GG	60	100	*	*	*	A5T4061	M3	30	90	*	*	*
2N3494	I	80	35	*	*	*	A5T4062	M3	30	180	*	*	*
2N3495	I	120	35	*	*	*	A5T4125	M3	30	50	*	*	*
2N3496	U	80	35	*	*	*	A5T4126	M3	25	120	*	*	*
2N3497	U	120	35	*	*	*	A5T5400	M3	120	40	*	*	*
2N3502	I	45	100	*	*	*	A5T5401	M3	150	60	*	*	*
2N3503	I	60	100	*	*	*							

*JAN type available. **JAN and JANTX types available.

MEDIUM-POWER GROWN JUNCTION

TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Each, Lots 1-99	100 Up	TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Each, Lots 1-99	100 Up
2N243	A	60	9-30	*	*	2N342A	J	85	9-32	*	*
2N244	A	60	9-30	*	*	2N343	J	60	28-90	*	*
2N339	J	55	9-90	*	*	2N1154	A	50	9 min.	*	*
2N340	J	85	9-90	*	*	2N1155	A	80	9 min.	*	*
2N341	J	125	9-90	*	*	2N1156	A	120	9 min.	*	*
2N342	J	60	9-32	*	*						

Prices available on request.

SEE THE FOLLOWING TI PAGES FOR ADDITIONAL ILLUSTRATIONS

Texas Instruments Transistors

SILICON TRANSISTORS

NPN GROWN JUNCTION

TI Type	Case	Rated V_{CBO} V	h_{fe}	Net Ea., Lots 1-99	Net Ea., Lots 100 Up	TI Type	Case	Rated V_{CBO} V	h_{fe}	Net Ea., Lots 1-99	Net Ea., Lots 100 Up
2N117*	A	45	9–20	*	*	TI495	I	40	15–45	*	*
2N118*	A	45	18–40	*	*	TI496	J	70	10 min.*	*	*
2N118A	A	45	18–90	*	*	2N541	I	40	15–45	*	*
2N119*	A	45	36–90	*	*	2N542	I	40	40–125*	*	*
2N120	A	45	76–333	*	*	2N543	I	40	120–250*	*	*
2N332**	I	45	9–20	*	*	2N1149	A	45	9–20	*	*
2N332A	I	45	18–40	*	*	2N1150	A	45	18–40	*	*
2N333*	I	45	18–40	*	*	2N1151	A	45	18–90	*	*
2N333A	I	45	18–40	*	*	2N1152	A	45	36–90	*	*
2N334**	I	45	18–40	*	*	2N1153	A	45	76–333	*	*
2N334A	I	45	18–90	*	*	2N1276	I	40	9–22	*	*
2N335*	I	45	36–90	*	*	2N1277	I	40	18–44	*	*
2N335A	I	45	36–90	*	*	2N1278	I	40	37–90	*	*
2N336*	I	45	76–333	*	*	2N1279	I	40	76–333	*	*
2N336A	I	45	76–333	*	*	2N1586	A	15	9–27	*	*
2N478	I	15	40–100	*	*	2N1587	A	30	9–27	*	*
2N479	I	30	40–100	*	*	2N1588	A	60	9–27	*	*
2N480	I	45	40–100	*	*	2N1589	A	15	25–75	*	*
TI480	J	50	9–36	*	*	2N1590	A	30	25–75	*	*
TI481	J	80	9–36	*	*	2N1591	A	60	25–75	*	*
TI492	I	15	80–200	*	*	2N1592	A	15	70–210	*	*
TI493	I	30	80–200	*	*	2N1593	A	30	70–210	*	*
TI494	I	45	80–200	*	*	2N1594	A	60	70–210	*	*

*h_{FE}. *JAN type available. **USN type available.

GROWN JUNCTION SWITCH

TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Ea., Lots 1-99	Net Ea., Lots 100 Up	TI Type	Case	Rated V_{CBO} V	h_{FE}	Net Ea., Lots 1-99	Net Ea., Lots 100 Up
2N263	A	45	45–150	*	*	2N337*	I	45	20–55	*	*
2N264	A	45	20–55	*	*	2N338*	I	45	45–150	*	*

GROWN JUNCTION TETRODE

3N34	H	30	30*	$5.00	$4.15	3N35*	H	30	70*	$22.50	$15.00

*h_{fe}. *JAN type available.

UNIJUNCTION

TI Type	Case	Intrinsic Standoff Ratio	I_{EB2O} μA	Net Ea., Lots 1-99	Net Ea., Lots 100 Up	TI Type	Case	Intrinsic Standoff Ratio	I_{EB2O} μA	Net Ea., Lots 1-99	Net Ea., Lots 100 Up
2N489**	I	.51–.62	12	*	*	2N494B	I	.62–.75	0.2	*	*
2N489A	I	.51–.62	20	*	*	2N1671	I	.47–.62	12	*	*
2N489B	I	.51–.62	0.2	*	*	2N1671A	I	.47–.62	12	*	*
2N490	I	.51–.62	12	*	*	2N1671B	I	.47–.62	0.2	*	*
2N490A**	I	.51–.62	20	*	*	2N2160	I	.47–.80	12	*	*
2N490B	I	.51–.62	0.2	*	*	2N2646	U	.56–.75	12	*	*
2N491	I	.56–.68	12	*	*	2N2647	U	.68–.82	0.2	*	*
2N491A**	I	.56–.68	20	*	*	2N3980	U	.68–.82	0.01	*	*
2N491B	I	.56–.68	0.2	*	*	2N4851	U	.56–.75	0.1	*	*
2N492	I	.56–.68	12	*	*	2N4852	U	.70–.85	0.1	*	*
2N492A**	I	.56–.68	20	*	*	2N4853	U	.70–.85	0.05	*	*
2N492B	I	.56–.68	0.2	*	*	2N4891	M3	.55–.82	0.01	*	*
2N493	I	.62–.75	12	*	*	2N4893	M3	.55–.82	0.01	*	*
2N493A**	I	.62–.75	20	*	*	2N4947	U	.51–.69	0.01	*	*
2N493B	I	.62–.75	0.2	*	*	2N4948**	U	.55–.82	0.01	*	*
2N494	I	.62–.75	12	*	*	2N4949**	U	.74–.86	0.01	*	*
2N494A**	I	.62–.75	12	*	*						

*500–999 prices on request. **JAN and JANTX types available.

NPN AND PNP RADIATION TOLERANT (CASE GG)

TI Type 2N5332—Pre-Irradiation: I_{CBO} = 0.01 μA max.; h_{FE} = 20–80; $V_{CE(sat)}$ = 0.2 V max. Post-Irradiation: I_{CBO} = 10 μA max.; h_{FE} = 10 min.; $V_{CE(sat)}$ = 0.6 V max. **TI Type 2N5399**—Same except: Pre-Irradiation h_{FE} = 30–90; Post-Irradiation h_{FE} = 12 min.; $V_{CE(sat)}$ = 0.5 V max. Collector in electrical contact with case. Specify 2N5332 (PNP) or 2N5399 (NPN).
Net Each, Lots of: 1–99.....**$14.00**; 100–499.....**$9.40**; 500 Up.....**$8.90**

NPN AND PNP CHOPPER (CASE GG)

Collector in electrical contact with case.

TI Type	Net Each, Lots of 1-99	100-499	500-999	TI Type	Net Each, Lots of 1-99	100-499	500-999	TI Type	Net Each, Lots of 1-99	100-499	500-999
2N2432***	*	*	*	2N2944A†	*	*	*	2N2946†	*	*	*
2N2432A***	*	*	*	2N2945†	*	*	*	2N2946A†**	*	*	*
2N2944†	*	*	*	2N2945A†**	*	*	*	2N4138	*	*	*

NPN AND PNP DOUBLE-EMITTER CHOPPER (CASE G3)

3N74	*	*	*	3N78	*	*	*	3N110†	*	*	*
3N75**	*	*	*	3N79	*	*	*	3N111†	*	*	*
3N76**	*	*	*	3N108†*	*	*	*				
3N77	*	*	*	3N109†	*	*	*				

*Case U. †PNP; all other types NPN. *JAN type available. **JAN and JANTX types available.

N-CHANNEL DUAL FIELD EFFECT

TI Type	Case	Net Each, Lots of 1-99	100-499	500-999	TI Type	Case	Net Each, Lots of 1-99	100-499	500-999
TIS25	M6	*	*	*	2N5047	M6	*	*	*
TIS26	M6	*	*	*	2N5545	M6	*	*	*
TIS27	M6	*	*	*	2N5546	M6	*	*	*
2N5045	M6	*	*	*	2N5547	M6	*	*	*
2N5046	M6	*	*	*					

Prices available on request.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

A

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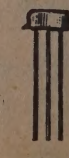
G3

M6

H


GG

I

G1

G3

M3

U

QQ

SILICON TRANSISTORS

N-CHANNEL DUAL FIELD EFFECT (CONTINUED)

TI Type	Case	Net per Pair, Lots of 1-99	Net per Pair, Lots of 100-999	TI Type	Case	Net per Pair, Lots of 1-99	Net per Pair, Lots of 100-999
TIS68	QQ	*	*	TIS70	QQ	*	*
TIS69	QQ	*	*				

N-CHANNEL AND P-CHANNEL FIELD-EFFECT

TI Type	Case	Polarity	Net Ea., Lots 1-99	Net Ea., Lots 100-999	TI Type	Case	Polarity	Net Ea., Lots 1-99	Net Ea., Lots 100-999
TIS58	QQ	N-channel	*	*	2N5949	M3	N-channel	*	*
TIS59	QQ	N-channel	*	*	2N5950	M3	N-channel	*	*
TIS73*	M3	N-channel	*	*	2N5951	M3	N-channel	*	*
TIS74*	M3	N-channel	*	*	2N5952	M3	N-channel	*	*
TIS75*	M3	N-channel	*	*	2N5953	M3	N-channel	*	*
TIS78	M3	N-channel	*	*	3N128	G3	N-MOS	*	*
TIS79	M3	N-channel	*	*	3N153	G3	N-MOS	*	*
2N2499	G3	P-channel	*	*	3N169	G3	N-MOS	*	*
2N3819	QQ	N-channel	*	*	3N170	G3	N-MOS	*	*
2N3820	QQ	P-channel	*	*	3N171	G3	N-MOS	*	*
2N5245	M3	N-channel	*	*	3N204	G3	N-MOS	*	*
2N5246	M3	N-channel	*	*	3N205	G3	N-MOS	*	*
2N5247	M3	N-channel	*	*	3N206	G3	N-MOS	*	*
2N5248	QQ	N-channel	*	*	3N211	G3	N-MOS	*	*
2N5358	G3	N-channel	*	*	3N212	G3	N-MOS	*	*
2N5359	G3	N-channel	*	*	3N213	G3	N-MOS	*	*
2N5360	G3	N-channel	*	*	3N214	G3	N-MOS	*	*
2N5361	G3	N-channel	*	*	3N215	G3	N-MOS	*	*
2N5362	G3	N-channel	*	*	3N216	G3	N-MOS	*	*
2N5363	G3	N-channel	*	*	3N217	G3	N-MOS	*	*
2N5364	G3	N-channel	*	*	A5T3821	M3	N-channel	*	*
2N5397	G3	N-channel	*	*	A5T3822	M3	N-channel	*	*
2N5398	G3	N-channel	*	*	A5T3823	M3	N-channel	*	*
2N5548	M3	P-MOS	*	*	A5T3824	M3	N-channel	*	*

*Field effect chopper.

TI Type	Case	Polarity	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Net Each, Lots of 500 Up	TI Type	Case	Polarity	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Net Each, Lots of 500 Up
2N2386	I‡	P-channel	*	*	*	2N4221	G3	N-channel	*	*	*
2N2386A	I‡	P-channel	*	*	*	2N4221A	G3	N-channel	*	*	*
2N2497	I‡	P-channel	*	*	*	2N4222	G3	N-channel	*	*	*
2N2498	G3	P-channel	*	*	*	2N4222A	G3	N-channel	*	*	*
2N2500	G3	P-channel	*	*	*	2N4223	G3	N-channel	*	*	*
2N2608	G1	P-channel	*	*	*	2N4224	G3	N-channel	*	*	*
2N2609	G1	P-channel	*	*	*	2N4391†	U‡	N-channel	*	*	*
2N3329	G3	P-channel	*	*	*	2N4392†	U‡	N-channel	*	*	*
2N3330	G3	P-channel	*	*	*	2N4393†	U‡	N-channel	*	*	*
2N3331	G3	P-channel	*	*	*	2N4416	G3	N-channel	*	*	*
2N3332	G3	P-channel	*	*	*	2N4416A	G3	N-channel	*	*	*
2N3458	U‡	N-channel	*	*	*	2N4856*†	U‡	N-channel	*	*	*
2N3459	U‡	N-channel	*	*	*	2N4856A†	U‡	N-channel	*	*	*
2N3460	U‡	N-channel	*	*	*	2N4857†	U‡	N-channel	*	*	*
2N3821*	G3	N-channel	*	*	*	2N4857A†	U‡	N-channel	*	*	*
2N3822*	G3	N-channel	*	*	*	2N4858†	U‡	N-channel	*	*	*
2N3823*	G3	N-channel	*	*	*	2N4858A†	U‡	N-channel	*	*	*
2N3824†	G3	N-channel	*	*	*	2N4859*†	U‡	N-channel	*	*	*
2N3909	G3	P-channel	*	*	*	2N4859A†	U‡	N-channel	*	*	*
2N3909A	G3	P-channel	*	*	*	2N4860†	U‡	N-channel	*	*	*
2N3966	G3	N-channel	*	*	*	2N4860A†	U‡	N-channel	*	*	*
2N3970†	U‡	N-channel	*	*	*	2N4861†	U‡	N-channel	*	*	*
2N3971†	U‡	N-channel	*	*	*	2N4861A†	U‡	N-channel	*	*	*
2N3972†	U‡	N-channel	*	*	*	2N5543	G‡	N-channel	*	*	*
2N3993†	G3	P-channel	*	*	*	2N5544	G‡	N-channel	*	*	*
2N3993A†	G3	P-channel	*	*	*	2N5549†	U‡	N-channel	*	*	*
2N3994†	G3	P-channel	*	*	*	3N160	G3	P-MOS	*	*	*
2N3994A†	G3	P-channel	*	*	*	3N161	G3	P-MOS	*	*	*
2N4091†	U‡	N-channel	*	*	*	3N174	G3	P-MOS	*	*	*
2N4092†	U‡	N-channel	*	*	*	3N201	G3	N-channel	*	*	*
2N4093†	U‡	N-channel	*	*	*	3N202	G3	N-channel	*	*	*
2N4220	G3	N-channel	*	*	*	3N203	G3	N-channel	*	*	*
2N4220A	G3	N-channel	*	*	*						

*JAN and JANTX types available. †Field effect chopper. ‡Gate in electrical contact with case

LOW-NOISE FIELD EFFECT TRANSISTORS (CASE G3)

LOW NOISE CURRENT

TI Type	i_n A.Hz$^{-1/2}$	I_{GS} pA	Y_{fs} ms	C_{iss} pF	C_{rss} pF	e_n – 100 kHz nV.Hz$^{-1/2}$	Net Ea., Lots 1-24	Net Ea., Lots 25-99
BF800	3×10^{-16}	0.3	0.5	1.3	0.4	8.0	*	*
BF801	4×10^{-16}	0.7	0.5	1.3	0.4	8.0	*	*
BF802	8×10^{-16}	2.0	0.5	1.3	0.4	8.0	*	*
BF805	6×10^{-16}	1.0	4.5	2.8	1.0	2.2	*	*
BF806	1×10^{-15}	3.0	4.5	2.8	1.0	2.5	*	*

LOW NOISE VOLTAGE

TI Type	e_n – 10 Hz nV.Hz$^{-1/2}$	e_n – 100 kHz nV.Hz$^{-1/2}$	I_{GS} pA	Y_{fs} ms	C_{rss} pF	C_{rss} pF	Net Ea., Lots 1-24	Net Ea., Lots 25-99
BF808	7.0	3.8	25	1.5	1.5	0.2	*	*
BF810	12	1.4	20	7.5	5.0	1.5	*	*
BF811	14	1.7	55	7.0	5.0	1.5	*	*
BF815	10	1.0	60	15	9.0	2.5	*	*
BF816	12	1.3	150	15	9.0	2.5	*	*
BF817	7.0	0.9	20	19	10.5	2.9	*	*
BF818	7.0	0.9	60	19	10.5	2.9	*	*

*Prices available on request.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

SILICON TRANSISTORS

NPN AND PNP DUAL (CASE M6)

TI Type	Polarity	Nearest Equivalent	Net Ea., Lots of 1-99	Net Ea., Lots of 100-499•	TI Type	Polarity	Nearest Equivalent	Net Ea., Lots of 1-99	Net Ea., Lots of 100-499•
2N2060**	NPN	2N1711	$ 6.75	$4.50	2N2920A	NPN	2N2484	*	*
2N2223	NPN	2N1711	4.95	3.30	2N2972	NPN	2N2483	*	*
2N2223A	NPN	2N1711	5.85	3.90	2N2973	NPN	2N2484	*	*
2N2453	NPN	2N930	9.57	6.38	2N2974	NPN	2N2483	*	*
2N2639	NPN	2N929	9.00	6.00	2N2975	NPN	2N2484	*	*
2N2640	NPN	2N929	6.75	4.50	2N2976	NPN	2N2483	*	*
2N2641	NPN	2N929	4.28	2.85	2N2977	NPN	2N2484	*	*
2N2642**	NPN	2N930	10.25	6.75	2N2978	NPN	2N2483	*	*
2N2643	NPN	2N930	7.32	4.88	2N2979	NPN	2N2484	*	*
2N2644	NPN	2N930	5.00	3.50	2N3347	PNP	2N2604	*	*
2N2802	PNP	2N2411	13.50	9.00	2N3348	PNP	2N2604	*	*
2N2803	PNP	2N2411	11.25	7.50	2N3349	PNP	2N2604	*	*
2N2804	PNP	2N2411	7.00	4.70	2N3350	PNP	2N2605	*	*
2N2805	PNP	2N2412	14.25	9.50	2N3351	PNP	2N2605	*	*
2N2806	PNP	2N2412	11.70	7.80	2N3352	PNP	2N2605	*	*
2N2807	PNP	2N2412	6.00	4.00	2N3680	NPN	2N2484	*	*
2N2913	NPN	2N2483	2.70	1.80	2N3806	PNP	2N3798	*	*
2N2914	NPN	2N2484	3.05	2.03	2N3807	PNP	2N3799	*	*
2N2915	NPN	2N2483	7.10	4.73	2N3808	PNP	2N3798	*	*
2N2915A	NPN	2N2483	10.10	6.75	2N3809	PNP	2N3799	*	*
2N2916	NPN	2N2484	9.23	6.15	2N3810*	PNP	2N3798	*	*
2N2916A	NPN	2N2484	12.00	8.05	2N3811	PNP	2N3799	*	*
2N2917	NPN	2N2483	3.60	2.40	2N4854	NPN/PNP	2N2222/2N2907	*	*
2N2918	NPN	2N2484	4.73	3.15					
2N2919	NPN	2N2483	7.88	5.25	2N4855	NPN/PNP	2N2221/2N2906	*	*
2N2919A	NPN	2N2483	11.00	7.35					
2N2920	NPN	2N2484	11.15	7.43					

M3

MINIATURE μMESA™ (CASE M5)

2N849	NPN	2N706A	$ 8.85	$ 5.90	2N2393	PNP	2N1131	*	*
2N850	NPN	2N753	9.75	6.50	2N2394	PNP	2N1132	*	*
2N851	NPN	2N743	11.70	7.80	2N2395	NPN	2N696	*	*
2N852	NPN	2N744	12.80	8.45	2N2396	NPN	2N697	*	*
2N2387	NPN	2N929	11.55	7.70	2N3037	NPN	2N2243	*	*
2N2388	NPN	2N930	14.40	9.65	2N3038	NPN	2N1890	*	*
2N2389	NPN	2N1613	14.40	9.65	2N3039	PNP	2N2904	*	*
2N2390	NPN	2N1711	15.80	10.55	2N3040	PNP	2N2904	*	*

M5

*JAN type available. **JAN and JANTX types available. •500 Up quantity pricing on request.

NPN MINIATURE DUAL FLATPACK (CASE LL)

TI Type	Nearest Equivalent Dual/Single	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Net Each, Lots of 500-999	TI Type	Nearest Equivalent Dual/Single	Net Each, Lots of 1-99	Net Each, Lots of 100-499	Net Each, Lots of 500-999
2N3043	2N2642/930	$39.40	$26.00	$19.60	2N3049*	2N2805/2412	*	*	*
2N3044	2N2643/930	33.00	22.00	16.80	2N3050*	2N2806/2412	*	*	*
2N3045	2N2644/930	14.25	9.50	7.97	2N3051*	2N2807/2412	*	*	*
2N3046	2N2639/929	36.00	24.00	19.25	2N3052*	2N914	*	*	*
2N3047	2N2640/929	28.50	19.00	14.80	2N3838†	2N2222/2907	*	*	*
2N3048	2N2641/929	12.75	8.50	7.00					

M6

*PNP; †NPN-PNP; all others are NPN.

NPN FOR CONSUMER CIRCUIT APPLICATIONS

TI Type	Case	Nearest Equivalent	Net Ea., Lots of 1-99	Net Ea., Lots of 100 Up	TI Type	Case	Nearest Equivalent	Net Ea., Lots of 1-99	Net Ea., Lots of 100 Up
TIS62A	M3	2N918	$0.37	$0.32	TIS111	M3	.....	*	*
TIS63A	M3	2N918	.32	.28	2N3704	QQ	2N2217	*	*
TIS64A	M3	2N918	.29	.25	2N3705	QQ	2N2217	*	*
TIS84	M3	TIS56	.50	.43	2N3706	QQ	2N2217	*	*
TIS86	M3	2N4252	.48	.42	2N3707	QQ	2N929	*	*
TIS87	M3	2N4252	.51	.45	2N3708	QQ	2N929	*	*
TIS92	M3	2N2219	.35	.31	2N3709	QQ	2N929	*	*
TIS92M	M3*	2N2219	.37	.32	2N3710	QQ	2N929	*	*
TIS97	M3	.....	.34	.29	2N3711	QQ	2N929	*	*
TIS98	M3	.....	.29	.25	2N4994	M3	2N915	*	*
TIS99	M3	.....	.30	.27	2N4996	M3	2N4254	*	*
TIS101	M3	2N3712	.61	.53	2N4997	M3	2N4255	*	*
TIS105	M3	.....	.40	.29	2N5449	M3	2N3704	*	*
TIS108	M3	TIS56	.48	.42	2N5450	M3	2N3705	*	*
TIS109	M3	.....	.70	.49	2N5451	M3	2N3706	*	*
TIS110	M3	.....	.42	.36					

LL

PNP FOR CONSUMER CIRCUIT APPLICATIONS

TIS37	QQ	.....	$0.38	$0.34	2N3703	QQ	2N2904	*	*
TIS38	QQ	.....	.35	.31	2N4058	QQ	2N2605	*	*
TIS93	M3	2N2905	.42	.36	2N4059	QQ	2N2604	*	*
TIS93M	M3*	2N2905	.43	.38	2N4060	QQ	2N2604	*	*
TIS112	M3	.....	.74	.53	2N4061	QQ	2N2604	*	*
TIS137	M3	.....	.38	.34	2N4062	QQ	2N2605	*	*
TIS138	M3	.....	.35	.31	2N5447	M3	2N3702	*	*
2N3702	QQ	2N2904	.37	.32	2N5448	M3	2N3703	*	*

*Pair.

NPN GENERAL PURPOSE

TI Type	Case	Rated V(CBO) Volts	hFE	Net Each
A8T3391	QQ	25	250	*
A8T3391A	QQ	25	250	*
A8T3704	QQ	50	100	*
A8T3705	QQ	50	50	*
A8T3706	QQ	40	30	*
A8T3707	QQ	30	100	*
A8T3708	QQ	30	45	*
A8T3709	QQ	30	45	*
A8T3710	QQ	30	90	*
A8T3711	QQ	30	180	*
A8T5172	QQ	50	100	*

PNP GENERAL PURPOSE

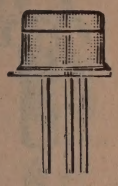
TI Type	Case	Rated V(CBO) Volts	hFE	Net Each
A8T3702	QQ	40	60	*
A8T3703	QQ	40	30	*
A8T4026	QQ	60	40	*
A8T4027	QQ	80	40	*
A8T4028	QQ	60	100	*
A8T4029	QQ	80	100	*
A8T4058	QQ	30	100	*
A8T4059	QQ	30	45	*
A8T4061	QQ	30	90	*
A8T4062	QQ	30	180	*

QQ

*Prices available on request.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

D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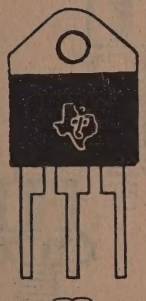
G2

M4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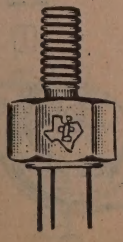
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NPN-PNP SILICON POWER TRANSISTORS

Power dissipation at 25° C Tc. NPN except as otherwise noted.

TI Type	Case	I_C A	P_D W	$V_{(BR)CEO}$ V	I_{CEX} at V_{CE} mA	I_{CEX} at V_{CE} V	h_{FE} at I_C Min.-Max.	h_{FE} at I_C A	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIP29	M4	1	30	40	0.2	40	15–75	1		
TIP29A	M4	1	30	60	0.2	60	15–75	1		
TIP29B	M4	1	30	80	0.2	80	15–75	1		
TIP29C	M4	1	30	100	0.2	100	15–75	1		
TIP30*	M4	1	30	40	0.2	40	15–75	1		
TIP30A*	M4	1	30	60	0.2	60	15–75	1		
TIP30B*	M4	1	30	80	0.2	80	15–75	1		
TIP30C*	M4	1	30	100	0.2	100	15–75	1		
TIP31	M4	3	40	40	0.2	40	10–50	3		
TIP31A	M4	3	40	60	0.2	60	10–50	3		
TIP31B	M4	3	40	80	0.2	80	10–50	3		
TIP31C	M4	3	40	100	0.2	100	10–50	3		
TIP32*	M4	3	40	40	0.2	40	10–50	3		
TIP32A*	M4	3	40	60	0.2	60	10–50	3		
TIP32B*	M4	3	40	80	0.2	80	10–50	3		
TIP32C*	M4	3	40	100	0.2	100	10–50	3		
TIP33	M7	10	80	40	0.4	40	20–100	3		
TIP33A	M7	10	80	60	0.4	60	20–100	3		
TIP33B	M7	10	80	80	0.4	80	20–100	3		
TIP33C	M7	10	80	100	0.4	100	20–100	3		
TIP34*	M7	10	80	40	0.4	40	20–100	3		
TIP34A*	M7	10	80	60	0.4	60	20–100	3		
TIP34B*	M7	10	80	80	0.4	80	20–100	3		
TIP34C*	M7	10	80	100	0.4	100	20–100	3		
TIP35	M7	25	125	40	0.7	40	10–50	15		
TIP35A	M7	25	125	60	0.7	60	10–50	15		
TIP35B	M7	25	125	80	0.7	80	10–50	15		
TIP35C	M7	25	125	100	0.7	100	10–50	15		
TIP36*	M7	25	125	40	0.7	40	10–50	15		
TIP36A*	M7	25	125	60	0.7	60	10–50	15		
TIP36B*	M7	25	125	80	0.7	80	10–50	15		
TIP36C*	M7	25	125	100	0.7	100	10–50	15		
TIP41	M4	6	65	40	0.4	40	15–75	3		
TIP41A	M4	6	65	60	0.4	60	15–75	3		
TIP41B	M4	6	65	80	0.4	80	15–75	3		
TIP41C	M4	6	65	100	0.4	100	15–75	3		
TIP42*	M4	6	65	40	0.4	40	15–75	3		
TIP42A*	M4	6	65	60	0.4	60	15–75	3		
TIP42B*	M4	6	65	80	0.4	80	15–75	3		
TIP42C*	M4	6	65	100	0.4	100	15–75	3		
TIP47	M4	1	40	250	1	150	30–150	0.3		
TIP48	M4	1	40	300	1	200	30–150	0.3		
TIP49	M4	1	40	350	1	250	30–150	0.3		
TIP50	M4	1	40	400	1	300	30–150	0.3		
TIP51	M7	3	100	250	1	150	30–150	0.3		
TIP52	M7	3	100	300	1	200	30–150	0.3		
TIP53	M7	3	100	350	1	250	30–150	0.3		
TIP54	M7	3	100	400	1	300	30–150	0.3		
TIP110	M4	2	50	60	2	30	1000	1	Prices on Request	Prices on Request
TIP111	M4	2	50	80	2	40	1000	1		
TIP112	M4	2	50	100	2	50	1000	1		
TIP115*	M4	2	50	60	2	30	1000	1		
TIP116*	M4	2	50	80	2	40	1000	1		
TIP117*	M4	2	50	100	2	50	1000	1		
TIP120	M4	5	65	60	0.5	30	1000	0.5		
TIP121	M4	5	65	80	0.5	40	1000	0.5		
TIP122	M4	5	65	100	0.5	50	1000	0.5		
TIP125*	M4	5	65	60	0.5	30	1000	0.5		
TIP126*	M4	5	65	80	0.5	40	1000	0.5		
TIP127*	M4	5	65	100	0.5	50	1000	0.5		
TIP140	M7	10	125	60	2	30	1000	5		
TIP141	M7	10	125	80	2	40	1000	5		
TIP142	M7	10	125	100	2	50	1000	5		
TIP145*	M7	10	125	60	2	30	1000	5		
TIP146*	M7	10	125	80	2	40	1000	5		
TIP147*	M7	10	125	100	2	50	1000	5		
2N389*	D	3	85	60†	10	60	12–60	1		
2N389A	D	3	85	60†	10	60	12–60	1		
2N424*	D	3	85	80†	10	60	12–60	1		
2N424A	D	3	85	80†	10	60	12–60	1		
TI486	I	1	15	60	0.3	60	20–80	0.2		
TI487	S	1	15	60	0.3	60	20–80	0.2		
2N497*	I	0.5	4	60	0.01‡	30	12–36	0.2		
2N497A	I	0.5	5	60	0.25‡	30	12–36	0.2		
2N498*	I	0.5	4	100	0.01‡	30	12–36	0.2		
2N498A	I	0.5	5	100	0.25‡	30	12–36	0.2		
TIP501	G	3	6	40	0.01	40	25–180	1		
TIP502	G	3	6	60	0.01	60	25–180	1		
TIP503	G2	2	20	120	0.05	60	40–200	1		
TIP504	G2	2	20	150	0.05	75	40–200	1		
TIP505	M	2	20	120	0.05	60	40–200	1		
TIP506	M	2	20	150	0.05	75	40–200	1		
TIP507*	M	2	20	150	0.2	75	30–120	1		
TIP508*	G	2	4	150	0.2	75	30–120	1		
TIP509	V	4	30	120	0.5	60	40–200	2		
TIP510	V	4	30	150	0.5	75	40–200	2		
TIP511	Z	4	30	120	0.5	60	40–200	2		
TIP512	Z	4	30	150	0.5	75	40–200	2		
TIP513*	M	5	30	150	0.3	75	30–150	2.5		
TIP514*	G2	5	20	150	0.3	75	30–150	2.5		
TIP515	V	12	80	120	1	75	40–200	6		
TIP516	V	12	80	150	1	75	40–200	6		
TIP517	Z	12	80	120	1	75	40–200	6		
TIP518	Z	12	80	150	1	75	40–200	6		
TIP519*	V	8	50	150	0.5	75	30–150	4		
TIP520*	Z	8	50	150	0.5	75	30–150	4		
TIP521*	M	2	20	200	0.2	100	20–100	1		
TIP522*	G	2	4	200	0.2	100	20–100	1		
TIP523*	M	5	30	200	0.3	100	20–100	2.5		
TIP524*	G	5	6	200	0.3	100	20–100	2.5		

*PNP. †$V_{(BR)CER}$. ‡I_{CBO} at V_{CB}. *JAN type available. **Silicon Power Transistors continued on following page.**

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

NPN-PNP SILICON POWER TRANSISTORS (CONTINUED)

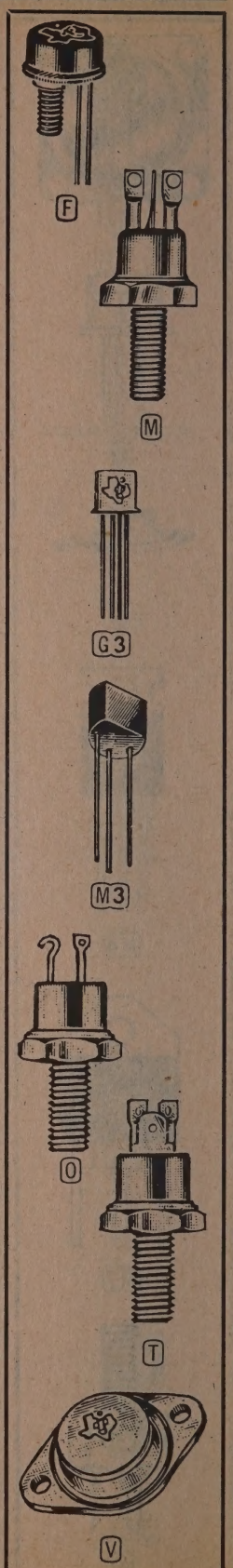
P_D at 25° C T_C. NPN except as otherwise noted.

TI Type	Case	I_C A	P_D W	$V_{(BR)CEO}$ V	I_{CEX} at V_{CE} mA	V	h_{FE} at I_C Min.-Max.	A	Net Each, Lots of 1-99	100 Up
TIP525	V	5	60	200	0.5	100	30–150	2.5		
TIP526	Z	5	60	200	0.5	100	30–150	2.5		
TIP527†	V	8	60	200	0.5	100	20–100	4		
TIP528†	Z	8	60	200	0.5	100	20–100	4		
TIP529	Z	3	67	300	0.1	150	25–125	1.5		
TIP530	G2	3	20	300	0.1	150	25–125	1.5		
TIP531	V	15	150	300	2	150	20–120	7.5		
TIP532	V	15	150	400	2	200	20–120	7.5		
TIP533	Z	15	150	300	2	150	20–120	7.5		
TIP534	Z	15	150	400	2	200	20–120	7.5		
TIP535	V	7.5	100	200	1	100	20–100	5		
TIP536	V	7.5	100	300	1	150	20–100	5		
TIP537	V	7.5	100	400	1	200	20–100	5		
TIP538	V	15	125	200	2	100	20–100	7.5		
TIP539	V	15	125	300	2	150	20–100	7.5		
TIP540	V	15	125	400	2	200	20–100	7.5		
TIP541	G	2	4	45	5	20	40–200	1		
TIP542	M	10	40	45	5	20	40–200	5		
TIP543	M	10	40	65	2	40	40–200	5		
TIP544	V	6	150	100	1	100	25–100	3		
TIP546	V	6	150	140	1	140	15–60	3		
TIP640	V	10	175	60	2	30	1000 min.	5		
TIP641	V	10	175	80	2	40	1000 min.	5		
TIP642	V	10	175	100	2	50	1000 min.	5		
TIP645†	V	10	175	60	2	30	1000 min.	5		
TIP646†	V	10	175	80	2	40	1000 min.	5		
TIP647†	V	10	175	100	2	50	1000 min.	5		
2N656*	I	0.5	4	60	0.01‡	30	30–90	0.2		
2N656A	I	0.5	5	60	0.25‡	30	30–90	0.2		
2N657*	I	0.5	4	100	0.01‡	30	30–90	0.2		
2N657A	I	0.5	5	100	0.25‡	30	30–90	0.2		
2N1047	F	2	40	80	0.25	80	12–36	0.5		
2N1047A	F	2	40	80	0.25	80	12–36	0.5		
2N1047B	F	2	40	80	0.05	80	12–36	0.5		
2N1048	F	2	40	120	0.25	120	12–36	0.5		
2N1048A	F	2	40	120	0.25	120	12–36	0.5		
2N1048B	F	2	40	120	0.05	120	12–36	0.5		
2N1049	F	2	40	80	0.25	80	30–90	0.5		
2N1049A*	F	2	40	80	0.25	80	30–90	0.5		
2N1049B	F	2	40	80	0.05	80	30–90	0.5		
2N1050	F	2	40	120	0.25	120	30–90	0.5		
2N1050A*	F	2	40	120	0.25	120	30–90	0.5		
2N1050B	F	2	40	120	0.05	120	30–90	0.5		
TI1121§	D	7.5	80*	100	10	100	30–120	2		
TI1122§	D	7.5	80*	100	10	100	15–60	2		
TI1123§	D	7.5	80*	75	10	75	30–120	2		
TI1124§	D	7.5	80*	75	10	75	15–60	2	Prices	Prices
TI1125§	D	7.5	80*	50	10	50	30–120	2	on	on
TI1126§	D	7.5	80*	50	10	50	15–60	2	Request	Request
TI1131	Z	7.5	80*	100	10	100	30–120	2		
TI1132	Z	7.5	80*	100	10	100	15–60	2		
TI1133	Z	7.5	80*	75	10	75	30–120	2		
TI1134	Z	7.5	80*	75	10	75	15–60	2		
TI1135	Z	7.5	80*	50	10	50	30–120	2		
TI1136	Z	7.5	80*	50	10	50	15–60	2		
TI1141§	D	7.5	80*	100	10	100	20–80	5		
TI1142§	D	7.5	80*	100	10	100	10–40	5		
TI1143§	D	7.5	80*	75	10	75	20–80	5		
TI1144§	D	7.5	80*	75	10	75	10–40	5		
TI1145§	D	7.5	80*	50	10	50	20–80	5		
TI1146§	D	7.5	80*	50	10	50	10–40	5		
TI1151	Z	7.5	80*	100	10	100	20–80	5		
TI1152	Z	7.5	80*	100	10	100	10–40	5		
TI1153	Z	7.5	80*	75	10	75	20–80	5		
TI1154	Z	7.5	80*	75	10	75	10–40	5		
TI1155	Z	7.5	80*	50	10	50	20–80	5		
TI1156	Z	7.5	80*	50	10	50	10–40	5		
2N1714*	I	1	15	60	0.5	60	20–60	0.2		
2N1715*	I	1	15	100	0.5	60	20–60	0.2		
2N1716*	I	1	15	60	0.5	60	40–120	0.2		
2N1717*	I	1	15	100	0.5	60	40–120	0.2		
2N1718	S	1	15	60	0.5	60	20–60	0.2		
2N1719	S	1	15	100	0.5	60	20–60	0.2		
2N1720	S	1	15	60	0.5	60	40–120	0.2		
2N1721	S	1	15	100	0.5	60	40–120	0.2		
2N1722**	D	5	50	80	2	60	20–90	2		
2N1722A	D	5	50	120	2	100	30–90	2		
2N1723	D	5	50	80	2	60	50–150	2		
2N1724**	Z	5	50	80	2	60	20–90	2		
2N1724A	Z	5	50	120	2	100	30–90	2		
2N1725	Z	5	50	80	2	60	50–150	2		
2N1936§	Z	20	150	60	10	60	10–50	10		
2N1937	Z	20	150	80	10	80	10–50	10		
2N2150	T	2	30	80	0.05	120	20–60	1		
2N2151**	T	2	30	80	0.05	120	40–120	1		
2N2880**	O	5	30	70	0.05	60	40–120	1		
TIP2955†	M7	15	90	60	5	100	20–70	4		
2N2987	I	1	15	80	0.015	90	25–75	0.2		
2N2988	I	1	15	100	0.015	150	25–75	0.2		
2N2989	I	1	15	80	0.015	90	60–120	0.2		
2N2990	I	1	15	100	0.015	150	60–120	0.2		
2N2991	S	1	15	80	0.015	90	25–75	0.2		
2N2992	S	1	15	100	0.015	150	25–75	0.2		
2N2993	S	1	15	80	0.015	90	60–120	0.2		
2N2994	S	1	15	100	0.015	150	60–120	0.2		
2N3021†	V	3	25	30	0.2	25	20–60	1		
2N3022†	V	3	25	45	0.2	40	20–60	1		

*At 25° C. †PNP. ‡I_{CBO} at V_{CB}. §Replacement only. *JAN; **JAN and JANTX types available.

Silicon Power Transistors continued on following page.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS



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NPN-PNP SILICON POWER TRANSISTORS (CONTINUED)

P_D at 25° C Tc. NPN except as otherwise noted.

TI Type	Case	I_C A	P_D W	$V_{(BR)CEO}$ V	I_{CEX} at V_{CE} mA	V_{CE} V	h_{FE} at I_C Min.-Max.	A	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
2N3023*	V	3	25	60	0.2	54	20–60	1		
2N3024*	V	3	25	30	0.2	25	50–180	1		
2N3025*	V	3	25	45	0.2	40	50–180	1		
2N3026*	V	3	25	60	0.2	54	50–180	1		
2N3055	V	15	115	60	5	100	20–70	4		
TIP3055	M7	15	90	60	0.7	30	20–70	4		
2N3263	Q	25	83.3	90	20	150	20–55	15		
2N3264	Q	25	83.3	60	20	120	20–80	15		
2N3265	Z	25	125	90	20	150	20–55	15		
2N3266	Z	25	125	60	20	120	20–80	15		
2N3418**	I	3	15	60	0.05	80	10–60	5		
2N3419**	I	3	15	80	0.05	120	10–60	5		
2N3420**	I	3	15	60	0.05	80	15–120	5		
2N3421**	I	3	15	80	0.05	120	15–120	5		
2N3551	Y	12	40	60	10	60	20–90	10		
2N3552	Y	12	40	80	10	80	20–90	10		
2N3583	G2	1	35	175	1	225	40–200	0.5		
2N3584	G2	2	35	250	1	340	8–80	1		
2N3585	G2	2	35	300	1	450	8–80	1		
2N3713	V	10	150	60	10	60	25–75	1		
2N3714	V	10	150	80	10	80	25–75	1		
2N3715*	V	10	150	60	10	60	50–150	1		
2N3716*	V	10	150	80	10	80	50–150	1		
2N3719*	G	3	6	40	0.01	40	25–180	1		
2N3720*	G	3	6	60	0.01	60	25–180	1		
2N3749**	Z	5	30	80	0.1	100	4–120	1		
2N3771	V	30	150	40	2	50	15–60	15		
2N3772	V	20	150	60	5	100	15–60	10		
2N3789*	V	10	150	60	5	60	25–90	1		
2N3790*	V	10	150	80	5	80	25–90	1		
2N3791*	V	10	150	60	5	60	50–180	1		
2N3792*	V	10	150	80	5	80	50–180	1		
2N3846	Z	20	150	200	10	300	10–60	10		
2N3847	Z	20	150	300	10	400	10–60	10		
2N3902	V	2.5	100	325	0.25	400	30–90	1		
2N3996	Z	5	30	80	0.05	90	40–120	1		
2N3997**	Z	5	30	80	0.05	90	80–240	1		
2N3998**	O	5	30	80	0.05	90	40–120	1		
2N3999**	O	5	30	80	0.05	90	80–240	1		
2N4000	I	1	15	80	0.05	90	30–120	0.5		
2N4001	I	1	15	100	0.05	110	30–120	0.5		
2N4002	Z	30	100	80	2	90	20–80	15		
2N4003	Z	30	100	100	2	110	20–80	15		
2N4004	M5	20	40	80	2	90	30–150	10		
2N4005	M5	20	40	100	2	110	30–150	10		
2N4240	G2	2	35	300	2	450	10–100	0.75		
2N4300	I	2	15	80	0.075	90	30–120	1		
2N4301	Z	10	50	80	0.5	90	30–120	5		
2N4398*	V	30	200	40	10	30	15–60	15	Prices on Request	Prices on Request
2N4399*	V	30	200	60	10	30	15–60	15		
2N4901*	V	5	87	40	2	40	20–80	1		
2N4902*	V	5	87	60	2	60	20–80	1		
2N4903*	V	5	87	80	2	80	20–80	1		
2N4904*	V	5	87	40	2	40	25–100	2.5		
2N4905*	V	5	87	60	2	60	25–100	2.5		
2N4906*	V	5	87	80	2	80	25–100	2.5		
2N4913	V	5	87	40	2	40	25–100	2.5		
2N4914	V	5	87	60	2	60	25–100	2.5		
2N4915	V	5	87	80	2	80	25–100	2.5		
2N4998	M	2	30	80	0.5	60	30–90	1		
2N4999*	M	2	30	80	0.5	60	30–90	1		
2N5000	M	2	30	80	0.5	60	70–200	1		
2N5001*	M	2	30	80	0.5	60	70–200	1		
2N5002	M	5	50	80	0.5	60	30–90	2.5		
2N5003*	M	5	50	80	0.5	60	30–90	2.5		
2N5004	M	5	50	80	0.5	60	70–200	2.5		
2N5005*	M	5	50	80	0.5	60	70–200	2.5		
2N5038	V	20	140	90	50	140	20–100	12		
2N5039	V	20	140	75	50	110	20–100	10		
2N5067	V	5	87.5	40	1	40	20–80	1		
2N5068	V	5	87.5	60	1	60	20–80	1		
2N5069	V	5	87.5	80	1	80	20–80	1		
2N5147*	G	2	6	80	0.5	60	30–90	1		
2N5148	G	2	6	80	0.5	60	30–90	1		
2N5149*	G	2	6	80	0.5	60	70–200	1		
2N5150	G	2	6	80	0.5	60	70–200	1		
2N5151*	G	5	10	80	0.5	60	30–90	2.5		
2N5152	G	2	10	80	0.5	60	30–90	2.5		
2N5153*	G	5	10	80	0.5	60	70–200	2.5		
2N5154	G	2	10	80	0.5	60	70–200	2.5		
2N5157	V	3.5	100	400	0.5	700	30–90	1		
2N5241	V	5	125	325	0.5	400	15–35	2.5		
2N5301	V	30	200	40	10	40	15–60	15		
2N5302	V	30	200	60	10	60	15–60	15		
2N5303	V	20	200	80	10	80	15–60	10		
2N5333*	I	2	15	80	0.5	50	30–120	1		
2N5384*	Z	5	30	80	0.5	50	20–80	2		
2N5385*	O	5	30	80	0.5	50	20–80	2		
2N5386*	Z	12	50	80	0.5	50	20–80	6		
2N5387	Z	7.5	100	200	10	100	25–100	2		
2N5388	Z	7.5	100	250	10	125	25–100	2		
2N5389	Z	7.5	100	300	10	150	25–100	2		
2N5390†	E	2	15	80	1	80	2000–20000	2		
2N5671	V	30	140	90	12	110	20–100	15		
2N5672	V	30	140	120	10	135	20–100	15		
2N5683*	V	50	300	60	2	60	15–60	25		
2N5684*	V	50	300	80	2	80	15–60	25		
2N5685	V	50	300	60	2	60	15–60	25		
2N5686	V	50	300	80	2	80	15–60	25		
2N5758	V	6	150	100	1	100	25–100	3		

*PNP. †Power Darlington. **JAN and JANTX types available.

Silicon Power Transistors continued on following page.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

NPN-PNP SILICON POWER TRANSISTORS (CONTINUED)

P_D at 25° C T_C. NPN except as otherwise noted.

TI Type	Case	I_C A	P_D W	$V_{(BR)CEO}$ V	I_{CEX} at V_{CE} mA	V	h_{FE} at I_C Min.-Max.	A	Net Each, Lots of 1-99	100 Up
2N5759	V	6	150	120	1	120	20–80	3		
2N5760	V	6	150	140	1	140	15–60	3		
2N5867*	V	5	87.5	60	0.1	60	20–100	1.5		
2N5868*	V	5	87.5	80	0.1	80	20–100	1.5		
2N5869	V	5	87.5	60	0.1	60	20–100	1.5		
2N5870	V	5	87.5	80	0.1	80	20–100	1.5		
2N5871*	V	7	115	60	0.25	60	20–100	2.5		
2N5872*	V	7	115	80	0.25	80	20–100	2.5		
2N5873	V	7	115	60	0.25	60	20–100	2.5		
2N5874	V	7	115	80	0.25	80	20–100	2.5		
2N5875*	V	10	150	60	0.5	60	20–100	4		
2N5876*	V	10	150	80	0.5	80	20–100	4		
2N5877	V	10	150	60	0.5	60	20–100	4		
2N5878	V	10	150	80	0.5	80	20–100	4		
2N5879*	V	15	160	60	0.5	60	20–100	6		
2N5880*	V	15	160	80	0.5	80	20–100	6		
2N5881	V	15	160	60	0.5	60	20–100	6		
2N5882	V	15	160	80	0.5	80	20–100	6		
2N5883*	V	25	200	60	1	60	20–100	10		
2N5884*	V	25	200	80	1	80	20–100	10	Prices on Request	Prices on Request
2N5885	V	25	200	60	1	60	20–100	10		
2N5886	V	25	200	80	1	80	20–100	10		
2N5938	M8	3	20	50	0.1	55	30–150	1		
2N5939	X	10	40	80	0.5	75	40–200	5		
2N5940	X	10	40	70	0.5	65	40–200	5		
2N6127*	Z	10	100	80	0.1	40	30–120	5		
2N6128	Z	10	100	80	0.1	40	30–120	5		
2N6270	V	30	150	80	1	40	20–100	15		
2N6271	V	30	150	100	1	50	20–100	15		
2N6272	Z	30	150	80	1	40	20–100	15		
2N6273	Z	30	150	100	1	50	20–100	15		
2N6322	V	30	200	200	5	100	40–150	5		
2N6323	V	30	200	300	5	150	30–150	5		
2N6324	Z	30	200	200	5	100	40–150	5		
2N6325	Z	30	200	300	5	150	30–150	5		
2N6326	V	30	200	60	1	30	6–30	30		
2N6327	V	30	200	80	1	40	6–30	30		
2N6328	V	30	200	100	1	50	6–30	30		
2N6329*	V	30	200	60	1	30	6–30	30		
2N6330*	V	30	200	80	1	40	6–30	30		
2N6331*	V	30	200	100	1	50	6–30	30		

*PNP.

NPN SILICON HIGH VOLTAGE POWER TRANSISTORS

I_C = 10 A except as otherwise noted. V_{CE} at I_{CEX} = 1 mA.

TI Type	$V_{BR(CEO)}$ V	V_{CE} V	h_{FE} at I_C Min.	A	Net Ea., Lots 1-99	100 Up	TI Type	$V_{BR(CEO)}$ V	V_{CE} V	h_{FE} at I_C Min.	A	Net Ea., Lots 1-99	100 Up
BUY69A	400	1000	15	2.5			TIP551*	600	1400	1.7	2.5		
BUY69B	325	800	15	2.5			TIP552†	600	1200	2.25	4.5		
BUY69C	200	500	15	2.5	Prices		TIP553†	700	1400	2.25	4.5	Prices	
BUY70A	400	1000	15	1	on		BD253	200	350	5	3	on	
BUY70B	325	800	15	1	Request		BD253A	250	500	5	3	Request	
BUY70C	200	500	15	1			BD253B	300	700	5	3		
BUY71‡	1200	2200	2	1			BD253C	400	900	5	3		
TIP550*	600	1200	1.7	2.5			BU137	.....	1000	3.75	7.5		

*I_C = 3 A. †I_C = 5 A. ‡I_C = 2 A.

SILICON TRANSISTORS

PNP SWITCH

P_D = 360 mW at 25° C free air except as otherwise noted. Collector in electrical contact with case.

TI Type	Case	Min. f_T MHz	Rated V_{CEO} V	Net Each, Lots of 1-99	100-499	500-999	TI Type	Case	Min. f_T MHz	Rated V_{CEO} V	Net Each, Lots of 1-99	100-499	500-999
2N2894	U	400	12	Prices			2N3251A**	U	300	60	Prices		
2N3012	U	400	12	on			2N3576	U	400	15	on		
2N3250	U	250	40	Request			2N3829	G1	350	20	Request		

*P_D = 300 mW. **JAN and JANTX types available.

NPN HIGH-FREQUENCY AMPLIFIER/OSCILLATOR

P_D = 200 mW at 25° C free air; 2N4874–2N4876 P_D = 6000 mW at 25° C case.

TI Type	Case	Min. f_T MHz	Max. C_{obo} pF	Net Each, Lots of 1-99	100-499	500-999	TI Type	Case	Min. f_T MHz	Max. C_{obo} pF	Net Each, Lots of 1-99	100-499	500-999
2N917	U*	500	1.7				2N4252	G3	600	0.45			
2N918**	G3	600	1.7	Prices			2N4253	G3	600	0.45	Prices		
2N3570	G3	1500	0.75	on			2N4874	G*	900	3.5	on		
2N3571	G3	1200	0.85	Request			2N4875	G*	800	3.5	Request		
2N3572	G3	1000	0.85				2N4876	G*	650	3.5			

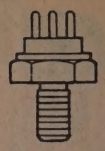
*Collector in electrical contact with case. **JAN and JANTX types available.

NPN LOW-LEVEL AMPLIFIER (CASE U)

Collector in electrical contact with case.

TI Type	I_C Range mA	Min. f_T MHz	Net Each, Lots of 1-99	100-499	500-999	TI Type	I_C Range mA	Min. f_T MHz	Net Each, Lots of 1-99	100-499	500-999
2N929**	0.01–30	30				2N2586	0.001–10	45			
2N930**	0.01–30	30	Prices			2N3117	0.01 –30	60	Prices		
2N2483	0.01–10	60	on			2N4104	0.001–50	60	on		
2N2484	0.001–10	60	Request						Request		

**JAN and JANTX types available.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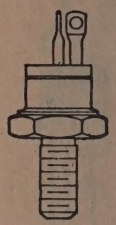
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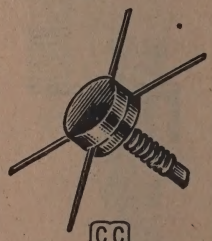
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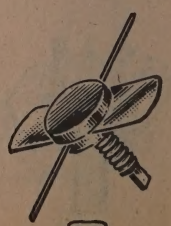
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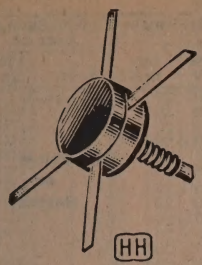
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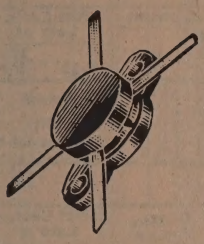
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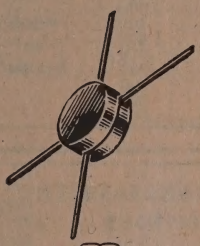
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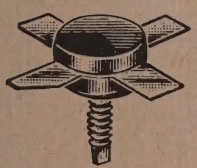
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U

NPN-PNP SILICON POWER TRANSISTORS (CONTINUED)

PNP LOW-LEVEL AMPLIFIER (CASE U)

Collector in electrical contact with case.

TI Type	I_C Range mA	Min. f_T MHz	Net Each, Lots of 1-99	100-499	500-999	TI Type	I_C Range mA	Min. f_T MHz	Net Each, Lots of 1-99	100-499	500-999
2N2604*	0.01–10	30	Prices on Request			2N3799	60	0.2	Prices on Request		
2N2605*	0.01–10	30				2N3962	60	0.25			
2N2861	0.01–10	60				2N3963	80	0.25			
2N2862	0.01–10	45				2N3964	45	0.25			
2N3798	60	0.2				2N3965	60	0.25			

*Case GG.

GERMANIUM SMALL-SIGNAL TRANSISTORS

Power dissipation in free air.

PNP HIGH-VOLTAGE SWITCHING

TI Type	Case	P_D mW	Col. Cur. mA	Col. Voltage V	Net Each, Lots of 1-99 100 Up	TI Type	Case	P_D mW	Col. Cur. mA	Col. Voltage V	Net Each, Lots of 1-99 100 Up
2N398	I	50	100	105	Prices on Request	2N398B	I	250	200	105	Prices on Request
2N398A	I	150	200	105							

PNP GENERAL PURPOSE

2N317A	I	150	500	70	Prices on Request	2N1370*	I	150	150	25	Prices on Request
2N520	I	100	300	15		2N1371*	I	150	150	25	
2N520A	I	100	300	25		2N1372	I	250	200	25	
2N522A	I	150	300	25		2N1373	I	250	200	45	
2N658	I	250	1000	30		2N1374	I	250	200	25	
2N659	I	250	1000	30		2N1375	I	250	200	45	
2N660	I	250	1000	30		2N1376	I	250	200	25	
2N661	I	250	1000	30		2N1377	I	250	200	45	
2N662	I	250	1000	30		2N1378	I	250	200	12	
2N1273*	I	150	150	15		2N1379	I	250	200	25	
2N1274*	I	150	150	25		2N1380	I	250	200	12	
						2N1381	I	250	200	25	

PNP SWITCHING

2N377§	I	150	200	25	Prices on Request	2N636A§	I	150	300	25	Prices on Request
2N388*§	I	150	200	25		2N1302§*	I	150	300	25	
2N388A§	I	150	200	40		2N1303*	I	150	300	30	
2N395	I	150	250	30		2N1304§*	I	150	300	25	
2N396	I	150	250	30		2N1305*	I	150	300	30	
2N397	I	150	250	30		2N1306§*	I	150	100	25	
2N404*	I	150	100	25		2N1307*	I	150	300	30	
2N404A*	I	150	150	40		2N1308§*	I	150	300	25	
2N426	I	150	400	30		2N1309*	I	150	300	30	
2N427*	I	150	400	30		2N1404	I	150	300	25	
2N428*	I	150	400	30		2N1605§	I	150	300	25	
2N438§	I	150	300	30		2N1808§	I	150	300	25	
2N438A§	I	150	300	25		2N1891†§	I	150	300	25	
2N439§	I	150	300	30		2N1892	I	150	300	30	
2N440§	I	150	300	30		2N1993§	I	150	300	30	
2N581	I	150	100	18		2N1994†§	I	150	300	30	
2N582	I	150	100	25		2N1995†§	I	150	300	25	
2N587§	I	150	200	40		2N1996†§	I	150	300	20	
2N594†‡§	I	150	300	20		2N1997	I	250	500	45	
2N595†‡§	I	150	300	20		2N1998	I	250	500	35	
2N596†‡§	I	150	300	20		2N1999	I	250	500	25	
2N634A§	I	150	300	25		2N2000	I	300	1000	50	
2N635A§	I	150	300	25		2N2001	I	300	1000	30	

CONSUMER CIRCUIT APPLICATIONS

PNP general purpose types.

2N1273	I	150	150	15	Prices on Request	2N1371	I	150	150	25	Prices on Request
2N1274	I	150	150	25		2N1372	I	250	200	25	

*Specific beta range available; specifications and prices on request. †Bi-directional. ‡Replacement only. §NPN. *JAN type available.

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AND UP TO DATE.

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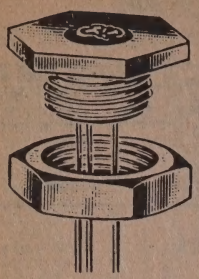
INFORMATION AND PRICING

ON ALL NEW

OR UNLISTED ITEMS.

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS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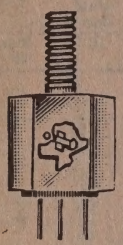
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UNIDIRECTIONAL THYRISTORS

I_{GT} at 25° C.

TI Type	Case	I_O A	Maximum Fwd.-Rev. WV	Maximum I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up	TI Type	Case	I_O A	Maximum Fwd.-Rev. WV	Maximum I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIC44	M3	0.6	30	0.2	Prices on Request		TIC116C	M4	5	300	20	Prices on Request	
TIC45	M3	0.6	60	0.2			TIC116D	M4	5	400	20		
TIC46	M3	0.6	100	0.2			TIC116E	M4	5	500	20		
TIC47	M3	0.6	200	0.2			TIC116F	M4	5	50	20		
TIC106A	M4	3.2	100	0.2			TIC116M	M4	5	600	20		
TIC106B	M4	3.2	200	0.2			TIC126A	M4	7.5	100	20		
TIC106C	M4	3.2	300	0.2			TIC126B	M4	7.5	200	20		
TIC106D	M4	3.2	400	0.2			TIC126C	M4	7.5	300	20		
TIC106F	M4	3.2	50	0.2			TIC126D	M4	7.5	400	20		
TIC106Y	M4	3.2	30	0.2			TIC126E	M4	7.5	500	20		
TIC116A	M4	5	100	20			TIC126F	M4	7.5	50	20		
TIC116B	M4	5	200	20			TIC126M	M4	7.5	600	20		

*At −65° C.

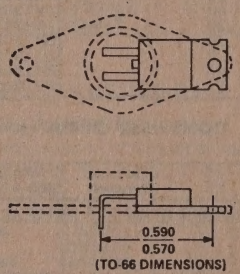
TI Type	Case	I_T A	Maximum Fwd.-Rev. mV	Maximum I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up	TI Type	Case	I_T A	Maximum Fwd.-Rev. mV	Maximum I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIC39A	G	2.0	100	0.2	Prices on Request		TIC39Y	G	2.0	30	0.2	Prices on Request	
TIC39B	G	2.0	200	0.2			TIC60	QQ	0.8	30	0.2		
TIC39C	G	2.0	300	0.2			TIC61	QQ	0.8	60	0.2		
TIC39D	G	2.0	400	0.2			TIC62	QQ	0.8	100	0.2		
TIC39F	G	2.0	50	0.2			TIC64	QQ	0.8	200	0.2		

BIDIRECTIONAL THYRISTORS

TI Type	Case	I_T (rms) A	Max. Fwd.-Rev. mV	Net Each, Lots of 1-99	Net Each, Lots of 100 Up	TI Type	Case	I_T (rms) A	Max. Fwd.-Rev. mV	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
TIC206A	M4	3.0	100	Prices on Request		TIC246B	M4	16	200	Prices on Request	
TIC206B	M4	3.0	200			TIC246D	M4	16	400		
TIC206D	M4	3.0	400			TIC253B	M7	20	200		
TIC216A	M4	6.0	100			TIC253D	M7	20	400		
TIC216B	M4	6.0	200			TIC253E	M7	20	500		
TIC216D	M4	6.0	400			TIC253M	M7	20	600		
TIC226B	M4	8.0	200			TIC263B	M7	25	200		
TIC226D	M4	8.0	400			TIC263D	M7	25	400		
TIC236B	M4	12	200			TIC263E	M7	25	500		
TIC236D	M4	12	400			TIC263M	M7	25	600		

CASES M4 AND M7 HAVE MECHANICAL INTERCHANGEABILITY WITH TO-66 AND TO-3 METAL-CASE TRANSISTORS

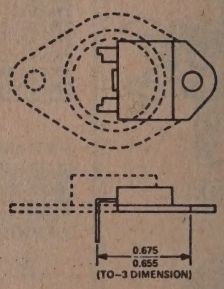
TO-66 REPLACEMENT



(TO-66 DIMENSIONS)

M4

TO-3 REPLACEMENT



(TO-3 DIMENSION)

M7

SEE PRECEDING TI PAGES FOR ADDITIONAL ILLUSTRATIONS

OUR STOCKS ARE FULLY UP-TO-DATE WITH ALL THE LATEST PRODUCTS. ASK ABOUT NEW OR UNLISTED ITEMS.

SILICON COMPUTER DIODES (CASE AA)

V_F = 1 volt except as otherwise noted. t_{rr} at 25° C.

TI Type	$V_{(BR)}$ V	Max. t_{rr} nsec	I_F mA	Net Ea., Lots 1-99	Net Ea., Lots 100 Up	TI Type	$V_{(BR)}$ V	Max. t_{rr} nsec	I_F mA	Net Ea., Lots 1-99	Net Ea., Lots 100 Up
TID31	75	6*	200	*	*	1N914A	100	4▲	20	*	*
TID32	100	10*	200	*	*	1N914B	100	4▲	100	*	*
TID33	75	10*	200	*	*	1N915	65	10†	50	*	*
TID34	100	10*	150	*	*	1N916	100	4▲	10	*	*
TID35	75	10*	150	*	*	1N916A	100	4▲	20	*	*
TID36	100	10*	100	*	*	1N916B	100	4▲	30	*	*
TID37	75	6*	100	*	*	1N917	50	3†	10	*	*
TID40	250	30†	50	*	*	1N3064	75	4▲	10	*	*
TID41	200	30†	100	*	*	1N3070**	200	50■	100	*	*
TID42	150	30†	100	*	*	1N4148**	75	4▲	10	*	*
TID43	150	30†	150	*	*	1N4149	75	4▲	10	*	*
TID44	100	30†	200	*	*	1N4150	50	6	200	*	*
TI71	40	10†	6	*	*	1N4151	75	4†	50	*	*
TI72	40	20†	10	*	*	1N4152	40	4†	20ɪ	*	*
TI73	40	20†	20	*	*	1N4153**	75	4†	20ɪ	*	*
TI74	40	30†	30	*	*	1N4154	35	4†	30	*	*
TI75	40	50†	75	*	*	1N4305	75	4†	10‡	*	*
1N251*	40	150‡	5	*	*	1N4444	70	7†	100	*	*
1N625	30	1000§	4♦	*	*	1N4446	75	4▲	20	*	*
1N626	50	1000§	4♦	*	*	1N4447	75	4▲	20	*	*
1N627	100	1000§	4♦	*	*	1N4448	75	4▲	100	*	*
1N628	150	1000§	4♦	*	*	1N4449	75	4†	30	*	*
1N629	200	1000§	100	*	*	1N4454**	75	4†	10	*	*
1N643*	200	300#	10	*	*	1N4531**	75	4▲	10	*	*
1N658	120	300•	100	*	*	1N4532**	75	4†	10	*	*
1N659	60	300§	6	*	*	1N4533	40	4†	20ɪ	*	*
1N660	110	300§	6	*	*	1N4534	75	4†	20ɪ	*	*
1N661	240	300§	6	*	*	1N4536	35	4†	30	*	*
1N662*	100	500**	10	*	*	1N4606	85	4†	200	*	*
1N663*	100	500#	100	*	*	1N4727	30	4▲	10‡	*	*
1N914**	100	4▲	10	*	*	1N4938**	200	50§	100	*	*

*I_F = I_R = 200 mA, recovery to 20 mA, R_L = 100 ohms. †Lumatron: 10 mA I_F, switched to 10 mA I_R, recovery to 1 mA. ‡JAN256: 5 mA I_F, switched to V_R = 10 V, recovery to 20 K. §JAN256: 30 mA I_F, switched to V_R = 35 V, recovery to 400 K. #JAN256: 5 mA I_F, switched to V_R = 40 V, recovery to 200 K. •JAN256: 5 mA I_F, switched to V_R = 40 V, recovery to 80 K. ▲EGG Type 2236A: 10 mA I_F, switched to V_R = 6 V, recovery to 1 mA reverse. ■Lumatron: 30 mA I_F, switched to 30 mA I_R, recovery to 1 mA. ♦V_F = 1.5 V. ɪV_F = 0.88 V. ‡V_F = 0.85 V. *JAN type available at same price. **JAN and JANTX types available. **JAN256: 5 mA I_F, switched to V_R = 40 V, recovery to 100 K.

SILICON VOLTAGE REGULATOR DIODES (CASE AA)

P_D = 400 mW at 25° C.

TI Type	V_Z V	Tol. ±	TI Type	V_Z V	Tol. ±	TI Type	V_Z V	Tol. ±
1N702	2.0–3.2	.....	1N749	4.3	10%*	1N964*	13.0	20%†
1N702A	2.3–2.9	.....	1N750	4.7	10%*	1N965*	15.0	20%†
1N703	3.0–3.9	.....	1N751	5.1	10%*	1N966*	16.0	20%†
1N703A	3.23–3.67	.....	1N752	5.6	10%*	1N967*	18.0	20%†
1N704	3.7–4.5	.....	1N753	6.2	10%*	1N968*	20.0	20%†
1N704A	3.9–4.3	.....	1N754**	6.8	10%*	1N969*	22.0	20%†
1N705	4.3–5.4	.....	1N755**	7.5	10%*	1N970*	24.0	20%†
1N705A	4.58–5.12	.....	1N756**	8.2	10%*	1N971*	27.0	20%†
1N706	5.2–6.4	.....	1N757**	9.1	10%*	1N972*	30.0	20%†
1N706A	5.5–6.1	.....	1N758**	10.1	10%*	1N973*	33.0	20%†
1N707	6.2–8.0	.....	1N759**	12.0	10%*	1N3506	3.3	5%
1N707A	6.65–7.55	.....	1N761	4.3–5.4	.....	1N3507	3.6	5%
1N708	5.6	10%*	1N762	5.2–6.4	.....	1N3508	3.9	5%
1N709	6.2	10%*	1N763	6.2–8.0	.....	1N3509	4.3	5%
1N710	6.8	10%*	1N764	7.5–10.0	.....	1N3510	4.7	5%
1N711	7.5	10%*	1N765	9.0–12.0	.....	1N3511	5.1	5%
1N712	8.2	10%*	1N766	11.0–14.5	.....	1N3512	5.6	5%
1N713	9.1	10%*	1N957	6.8	20%†	1N3513	6.2	5%
1N714	10.0	10%*	1N958	7.5	20%†	1N3514	6.8	5%
1N715	11.0	10%*	1N959	8.2	20%†	1N3515	7.5	5%
1N716	12.0	10%*	1N960	9.1	20%†	1N3516	8.2	5%
1N746	3.3	10%*	1N961	10.0	20%†	1N3517	9.1	5%
1N747	3.6	10%*	1N962	11.0	20%†			
1N748	3.9	10%*	1N963	12.0	20%†			

*Add suffix **A** for ±5% devices. †Add suffix **A** for ±10% and suffix **B** for ±5% devices. *JAN type available. **JAN and JANTX types available.

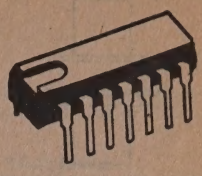
TI Type	Net Each, Lots of 1-99	Net Each, Lots of 100 Up	TI Type	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
1N702–1N716	*	*	1N957–1N973	*	*
1N702A–1N716A	*	*	1N957A–1N973A	*	*
1N746–1N759	*	*	1N957B–1N973B	*	*
1N746A–1N759A	*	*	1N3506–1N3517	*	*
1N761–1N766	*	*			

SILICON RECTIFIERS (CASE AA, GLASS)

TI Type	Rated V_R V	Rated I_O A	Net Each, Lots of 1-99	Net Each, Lots of 100 Up	TI Type	Rated V_R V	Rated I_O A	Net Each, Lots of 1-99	Net Each, Lots of 100 Up
1N2069	200	0.75	*	*	1N4001	50	1	*	*
1N2069A	200	0.75	*	*	1N4002	100	1	*	*
1N2070	400	0.75	*	*	1N4003	200	1	*	*
1N2070A	400	0.75	*	*	1N4004	400	1	*	*
1N2071	600	0.75	*	*	1N4005	600	1	*	*
1N2071A	600	0.75	*	*	1N4006	800	1	*	*

***Prices available on request.**

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS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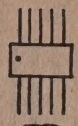
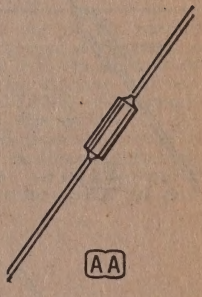

JJ

KK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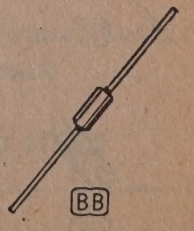
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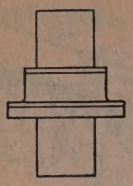

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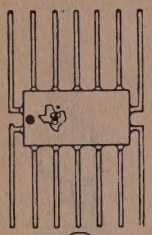

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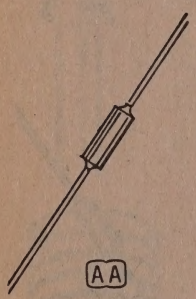
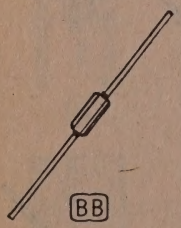


AA



BB

EE

SILICON VOLTAGE-VARIABLE-CAPACITANCE DIODES (CASE BB)

TI Type	C_T at V_R pF	V	Net Each, Lots of 1-99	100 Up	TI Type	C_T at V_R pF	V	Net Each, Lots of 1-99	100 Up
TIV21	2–2.5*	25	*	*	TIV25	23–34	3	*	*
TIV22	2.3–2.8*	25	*	*		4.2–6.5	25		
TIV23	1.8–2.8*	25	*	*	TIV306	5–9	4	*	*
TIV24	22–34	3	*	*	TIV307	7–11	4	*	*
	5.2–7.5	25			TIV308	9–14	4	*	*

*C_T = 9–14 pF at V_R = 3 V.

GENERAL PURPOSE SILICON DIODES (CASE AA)

I_F measured at 1 volt and 25° C except as otherwise noted. P_D at 25° C.

TI Type	V_R (max) V	Min. I_F mA	P_D mW	Net Ea., Lots 1-99	100 Up	TI Type	V_R (max) V	Min. I_F mA	P_D mW	Net Ea., Lots 1-99	100 Up
T151	10	200	400	*	*	1N462A	60	100	500†	*	*
T152	20	200	400	*	*	1N463	175	1	200	*	*
T153	30	200	400	*	*	1N463A	175	100	500†	*	*
T154	40	200	400	*	*	1N464	125	3	200	*	*
T155	60	200	400	*	*	1N464A	125	100	500†	*	*
T156	100	400	400	*	*	1N482	36	100*	250	*	*
T157	150	400	400	*	*	1N482A	36	200	250	*	*
T158	175	400	400	*	*	1N482B	36	200	250	*	*
T159	200	400	400	*	*	1N483	70	100*	250	*	*
T160	300	400	400	*	*	1N483A	70	200	250	*	*
1N456	25	40	200	*	*	1N484	130	100*	250	*	*
1N456A	25	100	500	*	*	1N484A	130	200	250	*	*
1N457*	60	20	200	*	*	1N484B	130	200	250	*	*
1N457A	60	100	500	*	*	1N485	180	100*	250	*	*
1N458*	125	7	200	*	*	1N485A	180	200	250	*	*
1N458A	125	100	500	*	*	1N645‡**	225	400	600	*	*
1N459	175	3	200	*	*	1N645A‡	225	400	600	*	*
1N459A	175	100	500	*	*	1N646‡	300	400	600	*	*
1N461	25	15	200	*	*	1N647‡**	400	400	600	*	*
1N461A	25	100	200	*	*	1N648‡	500	400	600	*	*
1N462	60	5	200	*	*	1N649‡**	600	400	600	*	*

*Measured at 1.1 V. †Watts. ‡Case BB. *JAN type available. **JAN and JANTX types available

V	TI Type	Case	Array Type	Net Ea., Lots 1-99	100-999	V	TI Type	Case	Description	Net Ea., Lots 1-99	100-999
60	TID21A	JJ	8-diode*	*	*	60	TID139F	P	7 independent	*	*
40	TID22A	JJ		*	*	60	TID139N	FF	diodes	*	*
60	TID23A	JJ	8-diode†	*	*	40	TID140F	P	7 independent	*	*
40	TID24A	JJ		*	*	40	TID140N	FF	diodes	*	*
60	TID25A	JJ	16-diode	*	*	60	TID141F	P	Dual 4-diode	*	*
40	TID26A	JJ		*	*	60	TID141N	FF	array*	*	*
60	TID29A	P	Dual 10-diode	*	*	40	TID142F	P	Dual 4-diode	*	*
40	TID30A	P		*	*	40	TID142N	FF	array*	*	*
60	TID121	FF	8-diode*	*	*	60	TID143F	P	Dual 4-diode	*	*
40	TID122	FF		*	*	60	TID143N	FF	array†	*	*
60	TID123	FF	8-diode†	*	*	40	TID144F	P	Dual 4-diode	*	*
40	TID124	FF		*	*	40	TID144N	FF	array†	*	*
60	TID125	FF	16-diode	*	*	45	TIDM155J	FF‡	5x5	*	*
40	TID126	FF		*	*	45	TIDM166J	FF‡	6x6 diode	*	*
60	TID129	FF	Dual 10-diode	*	*	45	TIDM168J	FF‡	6x8 matrix	*	*
40	TID130	FF		*	*	45	TIDM185J	FF‡	8x5	*	*
60	TID131	P	Dual 8-diode	*	*	45	TIDM186J	FF‡	8x6	*	*
40	TID132	P		*	*	35	TIDM255J	FF‡	5x5	*	*
60	TID133	FF	Dual 8-diode	*	*	35	TIDM266J	FF‡	6x6	*	*
40	TID134	FF		*	*	35	TIDM268J	FF‡	6x8 diode	*	*
60	TID135N	FF	16-diode	*	*	35	TIDM285J	FF‡	8x5 matrix	*	*
40	TID136N	FF		*	*	35	TIDM286J	FF‡	8x6	*	*

*Common cathode. †Common anode. ‡Ceramic package; other package types available.

***Prices available on request.**

SEE OTHER TI PAGES FOR ADDITIONAL ILLUSTRATIONS

OUR STOCKS ARE ALWAYS KEPT COMPLETE AND UP-TO-DATE.

ASK FOR INFORMATION ON ANY NEW OR UNLISTED PRODUCTS.

TI INTEGRATED CIRCUIT ORDERING INFORMATION

SN	54H72	N	-00
(A)	(B)	(C)	(D)

(A) PREFIX: Must contain two or three letters

RSN	Radiation-Hardened Circuit
SN	Standard Prefix
SNM	Mach IV, Level I
SNA	Mach IV, Level II
SNC	Mach IV, Level III
SNH	Mach IV, Level IV
SNX	Experimental Circuit

(B) UNIQUE CIRCUIT DESCRIPTION: Must contain three to six characters
Examples—F50, G50, 5410, 74H10, 54S112

(C) PACKAGE: Must contain a single letter
F, S, or **T** flat hermetic pkg.; body and leads are gold plated F-15 glass-sealing alloy. Circuit substrate is electrically insulated from the body of **F** pkg.; in electrical contact with the body of **S** and **T.**

H ceramic flat pkg.; hermetically sealed; gold plated leads.

U ceramic flat pkg.; circuit bar is alloy-mounted; hermetically sealed; tin-plated leads.

W ceramic flat pkg. has an electrically nonconductive ceramic base and cap; hermetically sealed; tin-plated leads.

J ceramic dual-in-line pkg. Circuit bar is alloy-mounted to the base and hermetic glass sealed.

N, ND or **P** plastic dual-in-line pkg. encapsulated within an electrically nonconductive, plastic compound. Compound will withstand soldering temperature with no deformation and circuit performance characteristics, remain stable when operated in high-humidity conditions.

L plug-in pkg. hermetically sealed with a welded metal base and cap with individual leads secured by an insulating glass sealant; gold plated leads.

(D) INSTRUCTIONS (DASH NO.): Must contain two numbers (from Dash No. column of following table).

F, S, T METAL FLAT PACKAGES

Order Dash No.	Formed Leads	Solder-Dipped Leads	Insulator	Carrier
00	No	No	No	*
01	Yes	No	Yes	*
02	No	No	No	Mech-Pak
03	No	No	Yes	Mech-Pak
04	Yes	No	No	Mech-Pak
05	Yes	No	Yes	Mech-Pak
06	No	No	Yes	*
07	Yes	No	No	*
10	No	Yes	No	*
11	Yes	Yes	Yes	*
12	No	Yes	No	Mech-Pak
13	No	Yes	Yes	Mech-Pak
14	Yes	Yes	No	Mech-Pak
15	Yes	Yes	Yes	Mech-Pak
16	No	Yes	Yes	*
17	Yes	Yes	No	*

H, U, W CERAMIC FLAT PACKAGES

00	No	No	N/A	*
02†	No	No	N/A	Mech-Pak
10	No	Yes	N/A	*

J, N, ND, P DUAL-IN-LINE PACKAGES

Order Dash No.	Formed Leads	Solder-Dipped Leads	Insulator	Carrier
00	No	No	N/A	*
07‡	Yes	No	N/A	*
10	No	Yes	N/A	*
17‡	Yes	Yes	N/A	*

L PLUG-IN PACKAGES

00	No	No	N/A	*
10	No	Yes	N/A	*

*These circuits are shipped in one of the carriers shown below. Unless a specific method of shipment is specified, circuits will be shipped in the most practical carrier. FLAT—Mech-Pakette, Barnes Carrier, Milton Ross Carrier; DUAL-IN-LINE—Slide magazines, A-channel plastic tubing; Barnes Carrier, sectioned cardboard box, individual plastic box; PLUG-IN—Barnes Carrier, sectioned cardboard box, individual plastic box. Please contact us for the method which will best suit your particular needs. †H pkg. only. ‡N and ND pkg only.

FOR INDUSTRIAL ELECTRONIC EQUIPMENT AND PARTS,
WE CAN SUPPLY ALL YOUR REQUIREMENTS,
OFFERING COMPLETE LINE WITH UP-TO-DATE STOCK, FAST DELIVERY AND INDUSTRIAL QUANTITY CONVENIENCE. AS NEW PRODUCTS ARE DEVELOPED, WE WILL OBTAIN THEM FOR YOUR IMMEDIATE AVAILABILITY.
WRITE FOR FULL INFORMATION ON NEW OR UNLISTED ITEMS.

38510/MACH IV HIGH-RELIABILITY MICROELECTRONICS TO PROCUREMENT SPECIFICATIONS MIL-STD-883

LINEAR OPERATIONAL AMPLIFIERS

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
LM2902J LM2902N LM324J LM324N	Quad operational amplifiers		
SN72L022JG SN72L022L SN72L022P	Dual low-power operational amplifiers		
SN72L044JA SN72L044N	Quad low-power operational amplifiers		
SN72301AFB SN72301AJ SN72301AJG SN72301AL SN72301AN SN72301AP	High-performance operational amplifiers		
SN72307FB SN72307J SN72307JG JN72307L SN72307N SN72307P	High-performance operational amplifiers		
SN72558JG SN72558L SN72558P	Dual operational amplifiers		
SN72702FB SN72702J SN72702L SN72702N	General-purpose operational amplifiers	Prices on Request	
SN72709FB SN72709J SN72709L SN72709N SN72709P	General-purpose operational amplifiers		
SN72741FB SN72741J SN72741JG SN72741L SN72741N SN72741P	General-purpose operational amplifiers		
SN72747FB SN72747J SN72747L SN72747N	Dual general-purpose operational amplifiers		
SN72748FB SN72748J SN72748JG SN72748L SN72748N SN72748P	Dual general-purpose operational amplifiers		
SN72777FB SN72777J SN72777JG SN72777L SN72777N SN72777P	High-performance operational amplifiers		

LINEAR DIFFERENTIAL COMPARATORS

LM2901J LM2901N LM339J LM339N	Quad comparators		
SN72306FB SN72306J SN72306JG SN72306L SN72306N SN72306P	Differential comparators with strobe		
SN72311FB SN72311J SN72311JG SN72311L SN72311N SN72311P	Differential comparators with strobe		
SN72506FB SN72506J SN72506N	Dual differential comparators	Prices on Request	
SN72510FB SN72510J SN72510JG SN72510L SN72510N SN72510P	Differential comparators		
SN72514JB SN72514N	Dual differential comparator		
SN72710FB SN72710J SN72710JG SN72710L SN72710N SN72710P	Differential comparators		

LINEAR DIFFERENTIAL COMPARATORS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN72711FB SN72711J SN72711L SN72711N	Dual differential comparators		
SN72720J SN72720N	Dual differential comparators		
SN72810FB SN72810J SN72810JG SN72810L SN72810N SN72810P	Differential comparators	Prices on Request	
SN72811FB SN72811J SN72811L SN72811N	Dual differential comparators		
SN72820J SN72820N	Dual differential comparators		

LINEAR VOLTAGE REGULATORS

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN72304L SN72304N	Negative-voltage regulators		
SN72305JG SN72305L SN72305P SN72305AL SN72305AP	Positive-voltage regulators		
SN72309LA	Voltage regulator, 5 volt		
SN72376L SN72376P	Positive—voltage regulators	Prices on Request	
SN72723FB SN72723J SN72723L SN72723N	Precision, adjustable voltage regulators		
78L05LP 79L05ALP 78L06LP 78L06ALP 78L12LP 78L12ALP 78L15LP 78L15ALP	Voltage regulators		

LINEAR VIDEO AMPLIFIERS AND SPECIAL FUNCTIONS

SN72555JG SN72555L SN72555P	Precision timers		
SN72560L SN72560P	Precision level detectors		
SN72D560L SN72D560P	Dual precision level detectors	Prices on Request	
SN76502JB SN76502N	Logarithmic amplifiers		
SN76514JB SN76514N	Balanced mixers		
SN72733FB SN72733J SN72733L SN72733N	Differential video amplifiers		

LINEAR SENSE AMPLIFIERS

SN7520J SN7520N	Sense amplifiers		
SN7521J SN7521N	Sense amplifiers		
SN7522J SN7522N	Sense amplifiers		
SN7523J SN7523N	Sense amplifiers		
SN7524J SN7524N	Sense amplifiers	Prices on Request	
SN7525J SN7525N	Sense amplifiers		
SN7526J SN7526N	Sense amplifiers		
SN7527J SN7527N	Sense amplifiers		
SN7528J SN7528N	Sense amplifiers		
SN7529J SN7529N	Sense amplifiers		

LISTING CONTINUED ON NEXT PAGE

38510/MACH IV HIGH-RELIABILITY MICROELECTRONICS (CONTINUED)

LINEAR SENSE AMPLIFIERS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN75232J SN75232N	Sense amplifiers	Prices on Request	
SN75234J SN75234N	Sense amplifiers		
SN75235J SN75235N	Sense amplifiers		
SN75236SB	Dual sense amp/data registers		
SN75238J SN75238N	Sense amplifiers		
SN75239J SN75239N	Sense amplifiers		

LINEAR LINE CIRCUITS

SN75107AJ SN75107AN SN75107BJ SN75107BN	Dual differential line receivers	Prices on Request	
SN75108AJ SN75108AN SN75108BJ SN75108BN	Dual differential line receivers		
SN75109AJ SN75109AN	Dual line drivers		
SN75110AJ SN75110AN	Dual line drivers		
SN75112J SN75112N	Dual line drivers		
SN75113J SN75113N	Dual differential line drivers		
SN75114J SN75114N	Dual differential line drivers		
SN75115J SN75115N	Dual differential line receivers		
SN75116J SN75116N	Differential party-line transceiver		
SN75117JG SN75117P	Differential party-line transceiver		
SN75121J SN75121N	Dual line drivers		
SN75122J SN75122N	3-channel, single-ended line receiver		
SN75123J SN75123N	Dual, single-ended line driver		
SN75124J SN75124N	3-channel, single-ended line receiver		
SN75138J SN75138N	Quad bus transceiver		
SN75140P	Dual, single-ended line receiver		
SN75142J SN75142N	Dual, single-ended line receiver		
SN75150J SN75150JG SN75150N SN75150P	Dual, single-ended line driver		
SN75152J SN75152N	Dual differential line receiver		
SN75154J SN75154N	Quad differential line receiver		
SN75182J SN75182N	Dual differential line receiver		
SN75183J SN75183N	Quad differential line driver		
SN75188J SN75188N	Quad line driver		
SN75189J SN75189N	Quad line receiver		
SN75189AJ SN75189AN	Quad line receiver		
SN75207J SN75207N	Dual differential line receiver		
SN75208J SN75208N	Dual differential line receiver		

LINEAR INTERFACE, MEMORY AND PERIPHERAL DRIVERS

SN75270J SN75270N	7-unit, MOS to TTL converter arrays	Prices on Request	
SN75322J SN75322N	Dual memory driver		
SN75324J SN75324N	Memory drivers with decode inputs		
SN75325J SN75325N	Memory drivers with logic inputs		
SN75326J SN75326N	Quad memory driver		

LINEAR INTERFACE, MEMORY AND PERIPHERAL DRIVERS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN75327J SN75327N	Quad memory driver	Prices on Request	
SN75361AJ SN75361AN SN75361AP	Dual TTL to MOS driver		
SN75362P	Dual TTL to MOS driver		
SN75363J SN75363N	Dual memory driver		
SN75364J SN75364N SN75364P	Dual memory driver		
SN75365J SN75365N	Quad TTL to MOS driver		
SN75366J SN75366N	Quad memory driver		
SN75367J SN75367N	Quad TTL to CMOS driver		
SN75368J SN75368N	Dual ECL to MOS driver		
SN75369J SN75369N SN75369P	Dual current input to MOS driver		
SN75370J SN75370N	Dual interface to MOS memory		
SN75401ND SN75402ND SN75403ND SN75404ND SN75411ND SN75412ND SN75413ND SN75414ND SN75432P SN75450BJ SN75450BJB SN75450BN	Dual peripheral driver		
SN75451BJ SN75451BJG SN75451BL SN75451BP	Dual peripheral positive AND driver		
SN75452BGJ SN75452BL SN75452BP	Dual peripheral positive NAND driver		
SN75453BJG SN75453BL SN75453BP	Dual peripheral positive OR driver		
SN75454BJG SN75454BL SN75454BP	Dual peripheral positive NOR driver		
SN75460J SN75460JB SN75460N	Dual peripheral driver		
SN75461JG SN75461L SN75461P	Dual peripheral positive AND driver		
SN75462JG SN75462L SN75462P	Dual peripheral positive NAND driver		
SN75463JG SN75463L SN75463P	Dual peripheral positive OR driver		
SN75464JG SN75464L SN75464P	Dual peripheral positive NOR driver		
SN75470J SN75470JB SN75470N	Dual peripheral driver		
SN75471JG SN75471L SN75471P	Dual peripheral driver		
SN75472JG SN75472L SN75472P	Dual peripheral driver		
SN75473JG SN75473L SN75473P	Dual peripheral driver		
SN75474JG SN75474L SN75474P	Dual peripheral driver		
SN75480N	Display driver		
SN75481N	Display driver		
SN75491N	MOS to VLED driver		
SN75492N	MOS to VLED driver		
SN75493N	Display driver		
SN75494N	Display driver		
SN75498N	9-digit driver		

LISTING CONTINUED ON NEXT PAGE

MILITARY TEMPERATURE RANGE DEVICES (−55° C TO +125° C)

LINEAR OPERATIONAL AMPLIFIERS

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN52L022JG SN52L022L	Dual low-power operational amplifiers		
SN52L044JA	Quad low-power op-amp		
SN52101AFB SN52101AJ SN52101AJG SN52101AL	High-performance operational amplifiers		
SN52107FB SN52107J SN52107JG SN52107L	High-performance operational amplifiers		
SN52558JG SN52558L	Dual general-purpose operational amplifiers		
SN52702FB SN52702J SN52702L SN52702AFB SN52702AJ SN52702AL	General-purpose operational amplifiers		
SN52709FB SN52709J SN52709JG SN52709L SN52709AFB SN52709AJ SN52709AJG SN52709AL	General-purpose operational amplifiers	Prices on Request	
SN52741FB SN52741J SN52741JG SN52741L	Operational amplifiers		
SN52747FB SN52747J SN52747L	Dual general-purpose operational amplifiers		
SN52748FB SN52748J SN52748JG SN52748L	General-purpose operational amplifiers		
SN52777FB SN52777J SN52777JG SN52777L	High-performance operational amplifiers		

LINEAR DIFFERENTIAL COMPARATORS

SN52106FB SN52106J SN52106JG SN52106L	Differential comparator		
SN52111FB SN52111J SN52111JG SN52111L	Differential comparator		
SN52506FB SN52506J	Dual differential comparator		
SN52510FB SN52510J SN52510JG SN52510L	Differential comparator		
SN52514JB	Dual differential comparator	Prices on Request	
SN52710FB SN52710J SN52710JG SN52710L	Differential comparator		
SN52711FB SN52711J SN52711L	Dual-channel differential comparator		
SN52810FB SN52810J SN52810JG SN52810L	Differential comparator		
SN52811FB SN52811J SN52811L	Dual-channel differential comparator		
SN52820J	Dual differential comparator		

LINEAR VOLTAGE REGULATORS

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN52104JA SN52104L	Negative—voltage regulator		
SN52105JG SN52105L	Positive—voltage regulator	Prices on Request	
SN52723FB SN52723J SN52723L	Precision voltage regulator		

LINEAR VIDEO AMPLIFIERS AND SPECIAL FUNCTIONS

SN52555JG SN52555L	Precision timers		
SN52733FB SN52733J SN52733L	Differential video amplifiers	Prices on Request	

LINEAR VIDEO AMPS AND SPECIAL FUNCTIONS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN56502JB	Logarithmic amplifier		
SN56514JB	Balanced mixers		

LINEAR SENSE AMPLIFIERS

SN5520J SN5521J SN5522J SN5523J SN5524J SN5525J SN5528J SN5529J SN55232J SN55234J	Dual sense amplifiers	Prices on Request	
SN55236SB	Dual sense amp/data registers		

LINEAR LINE CIRCUITS

SN55107AJ SN55107BJ SN55108AJ SN55108BJ	Dual line receivers		
SN55109AJ SN55110AJ	Dual line drivers		
SN55113J SN55113SB SN55114J SN55114SB	Dual differential line drivers		
SN55115J SN55115SB	Dual differential line receivers	Prices on Request	
SN55116J SN55116SB SN55117JG	Differential party-line transceivers		
SN55121J	Dual line drivers		
SN55122J	Triple line receivers		
SN55138J	Quad bus transceivers		
SN55142J	Dual line receivers		
SN55182J	Dual differential line receivers		
SN55183J	Dual differential line drivers		

LINEAR INTERFACE, MEMORY, AND PERIPHERAL DRIVERS

SN55180L	Dual TTL to MOS level converter		
SN55325J SN55325SB SN55326J SN55326SB SN55327J SN55327SB SN55329RA	Memory drivers		
SN55450J	Dual peripheral drivers		
SN55451BJG SN55451BL	Dual peripheral positive AND drivers		
SN55452BJG SN55452BL	Dual peripheral positive NAND drivers		
SN55453BJG SN55453BL	Dual peripheral positive OR drivers		
SN55454BJG SN55454BL	Dual peripheral positive NOR drivers	Prices on Request	
SN55460J SN55461JG SN55461L	Dual peripheral positive AND drivers		
SN55462JG SN55462L	Dual peripheral positive NAND drivers		
SN55463JG SN55463L	Dual peripheral positive OR drivers		
SN55464JG SN55464L	Dual peripheral positive NOR drivers		
SN55470J SN55471JG SN55471L SN55472JG SN55472L SN55473JG SN55473L SN55474JG SN55474L	Dual peripheral drivers		

SERIES 54 DIGITAL—TTL

SN5400J SN5400N SN5400W	Quad 2-input positive-NAND gate	Prices on Request	
SN5401J SN5401N SN5401W	Quad 2-input positive-NAND gate w/OC outputs		
SN5402J SN5402N SN5402W	Quad 2-input positive-NOR gate		

LISTING CONTINUED ON NEXT PAGE

MILITARY TEMPERATURE RANGE DEVICES (−55° C TO +125° C) CONT'D

SERIES 54 DIGITAL—TTL (CONTINUED)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN5403J SN5403N	Quad 2-input positive-NAND gate w/OC outputs	Prices on Request	
SN5404J SN5404N SN5404W	Hex inverter		
SN5405J SN5405N SN5405W	Hex inverter w/OC outputs		
SN5406J SN5406N SN5406W	30 V hex inverter buffer/driver		
SN5407J SN5407N SN5407W	30 V hex buffer/driver		
SN5408J SN5408N SN5408W	Quad 2-input positive-AND gate		
SN5409J SN5409N SN5409W	Quad 2-input positive-AND gate w/OC outputs		
SN5410J SN5410N SN5410W	Triple 3-input positive-NAND gate		
SN5412J SN5412W	Triple 3-input positive-NAND gate w/OC outputs		
SN5413J SN5413N SN5413W	Dual NAND Schmitt trigger		
SN5414J SN5414N SN5414W	Hex Schmitt-trigger inverter		
SN5416J SN5416N SN5416W	15 V hex inverter buffer/driver		
SN5417J SN5417N SN5417W	15 V hex buffer/driver		
SN5420J SN5420N SN5420W	Dual 4-input positive-NAND gate		
SN5422J SN5422N SN5422W	Dual 4-input NAND gate w/OC outputs		
SN5423J SN5423N SN5423W	Dual 4-input NOR gate with strobe		
SN5425J SN5425N SN5425W	Dual 4-input NOR gate with strobe		
SN5426J SN5426N	Quad 2-input high voltage (MOS) interface NAND gate		
SN5427J SN5427W	Triple 3-input positive-NOR gate		
SN5428J SN5428N SN5428W	Quad 2-input positive-NOR buffer		
SN5430J SN5430N SN5430W	8-input positive-NAND gate		
SN5432J SN5432W	Quad 2-input positive-OR gate		
SN5433J SN5433N SN5433W	Quad 2-input positive-NOR buffer w/OC outputs		
SN5437J SN5437N SN5437W	Quad 2-input positive-NAND buffer		
SN5438J SN5438N SN5438W	Quad 2-input positive-NAND buffer (open collector)		
SN5440J SN5440N SN5440W	Dual 4-input positive-NAND power gate		
SN5442J SN5442N SN5442W	BCD-to-decimal decoder		
SN5443J SN5443N SN5443W	Excess-3-to-decimal decoder		
SN5444J SN5444N SN5444W	Excess-3-gray-to-decimal decoder		
SN5445J SN5445N SN5445W	BCD-to-decimal decoder/driver (80 mA sink)		
SN5446AJ SN5446AN SN5446AW	BCD-to-seven-segment decoder/driver		
SN5447AJ SN5447AN SN5447AW	BCD-to-seven-segment decoder/driver		
SN5448J SN5448N SN5448W SN5449W	BCD-to-seven-segment decoder/driver		
SN5450J SN5450N SN5450W	Dual AND-OR-INVERT gate with expander inputs		
SN5451J SN5451N SN5451W	Dual AND-OR-INVERT gate		
SN5453J SN5453N SN5453W	4-wide 2-input AND-OR-INVERT gate with expander		
SN5454J SN5454N SN5454W	4-wide 2-input AND-OR-INVERT gate		
SN5460J SN5460N SN5460W	Dual 4-input expander		
SN5470J SN5470N SN5470W	Edge-triggered J-K flip-flop		
SN5472J SN5472N SN5472W	J-K master-slave flip-flop		
SN5473J SN5473N SN5473W	Dual J-K master-slave flip-flop		
SN5474J SN5474N SN5474W	Dual D-type edge-triggered flip-flop		
SN5475J SN5475N SN5475W	Quad bistable latch		
SN5476J SN5476N SN5476W	Dual J-K master-slave flip-flop		
SN5477W	4-bit bistable latch		
SN5480J SN5480N SN5480W	Gated full adder		
SN5481AJ SN5481AN SN5481AW	16-bit active-element memory		
SN5482J SN5482N SN5482W	2-bit binary full adder		Prices on Request
SN5483AJ SN5483AN SN5483AW	4-bit binary full adder		
SN5484AJ SN5484AN SN5484AW	16-bit active-element memory		
SN5485J SN5485W	4-bit magnitude comparator		
SN5486J SN5486N SN5486W	Quad 2-input EXCLUSIVE-OR gate		
SN5488AJ SN5488AN SN5488AW	256-bit read-only memory		
SN5490AJ SN5490AN SN5490AW	Decade counter		
SN5491AJ SN5491AN SN5491AW	8-bit shift register		
SN5492AJ SN5492AN SN5492AW	Divide-by-twelve counter		
SN5493AJ SN5493AN SN5493AW	4-bit binary counter		
SN5494J SN5494N SN5494W	4-bit shift register		
SN5495AJ SN5495AN SN5495AW	4-bit right-shift, left-shift shift register		
SN5496J SN5496N SN5496W	5-bit shift register		
SN5497J SN5497N SN5497W	Synchronous rate multiplier		
SN54100J SN54100N SN54100W	8-bit bistable latch		

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MILITARY TEMPERATURE RANGE DEVICES (−55° C TO +125° C) CONT'D

SERIES 54 DIGITAL—TTL (CONTINUED)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN54104J SN54104N SN54104W	Gated J-K master-slave flip-flop		
SN54105J SN54105N SN54105W	Gated J-K master-slave flip-flop		
SN54107J SN54107N	Dual J-K master-slave flip-flop		
SN54109J SN54109N SN54109W	Dual J-K positive-edge-triggered flip-flop		
SN54110J SN54110N SN54110W	Gated J-K master-slave flip-flop with data lockout		
SN54111J SN54111N SN54111W	Dual J-K master-slave flip-flop with data lockout		
SN54120J SN54120N SN54120W	Dual pulse synchronizer/driver		
SN54121J SN54121N SN54121W	One-shot monostable multivibrator		
SN54122J SN54122N SN54122W	Retriggerable monostable multivibrator with clear		
SN54123J SN54123W	Retriggerable monostable multivibrator with clear		
SN54125J SN54125N SN54125W	Quad bus buffer gate with tri-state outputs (inverting)		
SN54126J SN54126N SN54126W	Quad bus buffer gate with tri-state outputs (non-inverting)		
SN54128J SN54128N SN54128W	75-ohm line driver		
SN54132J SN54132N SN54132W	Quad 2-input NAND Schmitt trigger		
SN54136J SN54136N SN54136W	Quad 2-input exclusive-OR gate with OC outputs		
SN54143J SN54143N SN54143W	4-bit counter/latch, seven-segment LED driver	Prices on Request	
SN54144J SN54144N SN54144W	4-bit counter/latch, seven-segment lamp driver		
SN54145J SN54145N SN54145W	BCD-to-decimal decoder/driver (15 V outputs)		
SN54147J SN54147N SN54147W	10-line-to-4-line priority encoder		
SN54148J SN54148N SN54148W	8-line-to-3-line priority encoder		
SN54150J SN54150N SN54150W	16-bit data selector		
SN54151J SN54151N SN54151W	8-bit data selector with strobe		
SN54152W SN54153J SN54153N SN54153W	Data selector/multiplexer Dual 4-to-1-line data selector/multiplexer		
SN54154J SN54154N SN54154W	4-line-to-16-line decoder/demultiplexer		
SN54155J SN54155N SN54155W	Dual 2-to-4-line decoder demultiplexer		
SN54156J SN54156N SN54156W	SN54155 with open-collector output		
SN54157J	Quad 2-line-to-1-line data selector/multiplexer		
SN54160J SN54160W	Synchronous decade counter with direct clear		
SN54161J SN54161W	Synchronous 4-bit binary counter		
SN54162J SN54162W	Synchronous decade counter with direct clear		
SN54163J SN54163W	Synchronous 4-bit binary counter		
SN54164J SN54164W	8-bit parallel-out shift register		
SN54165J SN54165W	Parallel-load 8-bit shift register		
SN54166J SN54166N SN54166W	8-bit shift register		
SN54167J SN54167N SN54167W	Synchronous rate multiplexer		
SN54170J SN54170W	4-by-4 register file		
SN54173J SN54173N SN54173W	4-bit D-type register with tristate outputs		
SN54174J	Hex D-type flip-flop w/clear		
SN54175J	Quad D-type flip-flop w/clear		
SN54176J	35-MHz presettable decade counter/latch		
SN54177J	35-MHz presettable 4-bit binary counter/latch		
SN54178J SN54178N SN54178W	4-bit parallel-access shift register		
SN54179J SN54179N SN54179W	4-bit parallel-access shift register with clear		
SN54180J SN54180N SN54180W	8-bit odd/even parity generator/checker		
SN54181J SN54181N SN54181W	4-bit ALU function generator		
SN54182J SN54182N SN54182W	Look-ahead carry generator for ALU		
SN54184J SN54184W	BCD-to-binary converter		
SN54185AJ SN54185AW	Binary-to-BCD converter		
SN54187J SN54187N SN54187W	1024-bit read-only memory		
SN54190J SN54190N SN54190W	Synchronous up/down counter		Prices on Request
SN54191J SN54191N SN54191W	Synchronous up/down counter		
SN54192J SN54192N SN54192W	Synchronous up/down decade counter		
SN54193J SN54193N SN54193W	Synchronous up/down 4-bit binary counter		
SN54194J SN54194W	4-bit bidirectional universal shift register		
SN54195J SN54195W	4-bit parallel-access shift register		
SN54196J SN54196W	50-MHz presettable decade counter/latch		
SN54197J SN54197W	50-MHz presettable 4-bit binary counter/latch		
SN54198J SN54198N SN54198W	8-bit shift register		
SN54199J SN54199N SN54199W	8-bit shift register		
SN54278J SN54278N SN54278W	4-bit cascadable priority register		
SN54279J SN54276N SN54279W	Quad S-R latch		
SN54283J SN54283N SN54283W	4-bit binary full adder with fast carry		
SN54284J SN54284N SN54284W	4-bit-by-4-bit parallel binary multiplier		
SN54285J SN54285N SN54285W	4-bit-by-4-bit parallel binary multiplier		
SN54298J SN54298N SN54298W	Quad 2-input multiplexer with storage		

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MILITARY TEMPERATURE RANGE DEVICES (−55° C TO +125° C) CONT'D

SERIES 54H HIGH-SPEED DIGITAL—TTL

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN54H00J SN54H00N SN54H00S	Quad 2-input positive-NAND gate		
SN54H01J SN54H01N SN54H01S	Quad 2-input positive-NAND gate (open collector)		
SN54H04J SN54H04N SN54H04S	Hex inverter		
SN54H05J SN54H05N SN54H05S	Hex inverter (open collector)		
SN54H10J SN54H10N SN54H10S	Triple 3-input positive-NAND gate		
SN54H11J SN54H11N SN54H11S	Triple 3-input positive-AND gate		
SN54H15J SN54H15N SN54H15S	Triple 3-input AND gate with OC outputs		
SN54H20J SN54H20N SN54H20S	Dual 4-input positive-NAND gate		
SN54H21J SN54H21N SN54H21S	Dual 4-input positive-AND gate		
SN54H22J SN54H22N SN54H22S	Dual 4-input positive-NAND gate (open collector)		
SN54H30J SN54H30N SN54H30S	8-input positive-NAND gate		
SN54H40J SN54H40N SN54H40S	Dual 4-input positive-NAND buffer		
SN54H50J SN54H50N SN54H50S	Expandable dual 2-wide 2-input AND-OR-INVERT gate		
SN54H51J SN54H51N SN54H51S	Dual 2-wide 2-input AND-OR-INVERT gate		
SN54H52J SN54H52N SN54H52S	Expandable 2-2-2-3-input AND-OR gate	Prices on Request	
SN54H53J SN54H53N SN54H53S	Expandable 2-2-2-3-input AND-OR-INVERT gate		
SN54H54J SN54H54N SN54H54S	2-2-2-3-input AND-OR-INVERT gate		
SN54H55J SN54H55N SN54H55S	Expandable 4-input AND-OR gate		
SN54H60J SN54H60N SN54H60S	Dual 4-input expander		
SN54H61J SN54H61N SN54H61S	Triple 3-input expanders		
SN54H62J SN54H62N SN54H62S	3-2-2-3-input AND-OR expander		
SN54H71J SN54H71N SN54H71S	J-K master-slave flip-flop (AND-OR inputs)		
SN54H72J SN54H72N SN54H72S	J-K master-slave flip-flop (AND inputs)		
SN54H73J SN54H73N SN54H73S	Dual J-K master-slave flip-flop		
SN54H74J SN54H74N SN54H74S	Dual D-type edge-triggered flip-flop		
SN54H76J SN54H76N	Dual J-K master-slave flip-flop with preset and clear		
SN54H78J SN54H78N SN54H78S	Dual J-K master-slave flip-flop (common clock)		
SN54H87J SN54H87N SN54H87S	4-bit true/complement, zero/one element		
SN54H101J SN54H101N SN54H101S	J-K edge-triggered flip-flop (AND-OR inputs)		
SN54H102J SN54H102N SN54H102S	J-K edge-triggered flip-flop (AND inputs)		

SERIES 54H HIGH-SPEED DIGITAL—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN54H103J SN54H103N SN54H103S	Dual J-K edge-triggered flip-flop		
SN54H106J SN54H106N	SN54H103 with preset and clear	Prices on Request	
SN54H108J SN54H108N SN54H108S	Dual J-K edge-triggered flip-flop (common clock)		
SN54H183J SN54H183N	Dual carry-save full adder		

SERIES 54S—SCHOTTKY-CLAMPED TTL

SN54S00J SN54S00N SN54S00W	Quad 2-input positive-NAND gate		
SN54S03J SN54S03N SN54S03W	Quad 2-input positive-NAND gate with OC outputs		
SN54S04J SN54S04N SN54S04W	Hex inverter		
SN54S05J SN54S05N SN54S05W	Hex inverter with OC outputs		
SN54S10J SN54S10N SN54S10W	Triple 3-input positive-NAND gate		
SN54S11J SN54S11N SN54S11W	Triple 3-input positive-AND gate		
SN54S15J SN54S15N SN54S15W	Triple 3-input positive-AND gate with OC outputs		
SN54S20J SN54S20N SN54S20W	Dual 4-input positive-NAND gate		
SN54S22J SN54S22N SN54S22W	Dual 4-input positive-NAND gate with OC outputs		
SN54S40J SN54S40N SN54S40W	Dual 4-input positive-NAND buffer		
SN54S64J SN54S64N SN54S64W	4-2-3-2-input AND-OR-INVERT gate		
SN54S65J SN54S65N SN54S65W	4-2-3-2-input AND-OR-INVERT gate with OC outputs	Prices on Request	
SN54S74J SN54S74N SN54S74W	Dual D-type edge-triggered flip-flop		
SN54S112J SN54S112N SN54S112W	Dual J-K negative-edge-triggered F-F (80 MHz) with preset and clear		
SN54S113J SN54S113N SN54S113W	Dual J-K negative-edge-triggered flip-flop (80 MHz) with preset		
SN54S114J SN54S114N SN54S114W	SN54S113 except with common clock and common clear		
SN54S133J SN54S133N SN54S133W	13-input NAND gate		
SN54S140J SN54S140N SN54S140W	Dual 4-input positive-NAND line driver		
SN54S151J SN54S151N SN54S151W	8-input data selector/multiplexer		
SN54S153J SN54S153N SN54S153W	Dual 4-input-to-1-line selector/multiplexer		
SN54S157J SN54S157N SN54S157W	Quad 2-line-to-1-line data selector/multiplexer (non-inverting)		
SN54S158J SN54S158N SN54S158W	Quad 2-line-to-1-line data selector/multiplexer (inverting)		
SN54S181J SN54S181N SN54S181W	Arithmetic logic unit/function generator		

SERIES 54L LOW-POWER DIGITAL—TTL

SN54L00J SN54L00T	Quad 2-input positive-NAND gate	Prices on Request
SN54L01T	SN54L00T w/open collector	
SN54L02J SN54L02T	Quad 2-input positive-NOR gate	

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MILITARY TEMPERATURE RANGE DEVICES (−55° C TO +125° C) CONT'D

SERIES 54L TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN54L03J	Quad 2-input positive-NAND gate (open collector)		
SN54L04J SN54L04T	Hex inverter		
SN54L10J SN54L10T	Triple 3-input positive-NAND gate		
SN54L20J SN54L20T	Dual 4-input positive-NAND gate		
SN54L30J SN54L30T	8-input positive-NAND gate		
SN54L42J	BCD-to-decimal decoder		
SN54L46J	30 V BCD-to-seven segment		
SN54L47J	15 V decoder/driver		
SN54L51J SN54L51T	Dual 2-wide AND-OR-INVERT gate		
SN54L54J SN54L54T	4-wide 3-2-2-3-input AND-OR-INVERT gate		
SN54L55J SN54L55T	2-wide 4-input AND-OR-INVERT gate		
SN54L71J SN54L71T	R-S master-slave flip-flop		
SN54L72J SN54L72T	J-K master-slave flip-flop		
SN54L73J SN54L73T	Dual J-K master-slave flip-flop		
SN54L74J SN54L74T	Dual D-type edge-triggered flip-flop		
SN54L75J SN54L77T	4-bit bistable latch		
SN54L78J SN54L78T	Dual J-K master-slave flip-flop (common clock)	Prices on Request	
SN54L85J	4-bit magnitude comparator		
SN54L86J SN54L86T	Quad 2-input exclusive-OR gate		
SN54L90J SN54L90T	Decade counter		
SN54L91J SN54L91T	8-bit shift register		
SN54L93J SN54L93T	4-bit binary counter		
SN54L95J SN54L95T	4-bit right-shift/left-shift register		
SN54L96J	5-bit shift register		
SN54L98J	4-bit data selector/storage register		
SN54L99J	4-bit right-shift/left-shift register		
SN54L121J SN54L121T	Monostable multivibrator		
SN54L122J SN54L122T	Retriggerable monostable multivibrator		
SN54L123J	Dual retriggerable monostable multivibrator with clear		
SN54L153J	Dual 4-line-to-1-line data selector/multiplexer		
SN54L154J	4-line-to-16-line decoder/demultiplexer		
SN54L157J	Quad 2-line-to-1-line data selector/multiplexer		
SN54L164J SN54L164T	8-bit parallel-out serial shift register		
SN54L192J	BCD counter Synch 4-bit		
SN54L193J	Binary counter up/down		

SERIES 54LS LOW-POWER SCHOTTKY-CLAMPED—TTL

Also available in **SN54LS__W, SN74LS__J, SN74LS__N**; prices on request.

SN54LS00J	Quad 2-input positive-NAND gate		
SN54LS01J	SN54LS00J w/OC outputs		
SN54LS02J	Quad 2-input positive-NOR gate		
SN54LS03J	Quad 2-input positive-NAND gate w/OC outputs	Prices on Request	
SN54LS04J	Hex inverter		
SN54LS05J	Hex inverter w/OC outputs		
SN54LS08J	Quad 2-input positive-AND gate		
SN54LS09J	SN54LS08J w/OC outputs		
SN54LS10J	Triple 3-input positive-NAND gate		
SN54LS11J	Triple 3-input positive-AND gate		

SERIES 54LS LOW-POWER SCHOTTKY-CLAMPED—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN54LS12J	Triple 3-input NAND gate, open collectors		
SN54LS13J	Dual 4-input NAND gate		
SN54LS14J	Hex Schnitt trigger inverter		
SN54LS15J	SN54LS11J w/OC outputs		
SN54LS20J	Dual 4-input positive-NAND gate		
SN54LS21J	Dual 4-input positive-AND gate		
SN54LS22J	SN54LS20J w/OC outputs		
SN54LS26J	Quad 2-input NAND gate, open collectors, 15 volt		
SN54LS27J	Triple 3-input positive-NOR gate		
SN54LS28J	Quad 2-input positive-NOR buffer		
SN54LS30J	8-input positive-NAND gate		
SN54LS32J	Quad 2-input positive-OR gate		
SN54LS33J	SN54LS33J w/OC outputs		
SN54LS37J	Quad 2-input positive-NAND buffer		
SN54LS38J	SN54LS37J w/OC outputs		
SN54LS40J	Dual 4-input positive-NAND buffer		
SN54LS42J	BCD—decimal decoder		
SN54LS51J	Dual 2-wide AND-OR-INVERT gate		
SN54LS54J	4-wide 2-3-3-2-input AND-OR-INVERT gate		
SN54LS55J	2-wide 4-input AND-OR-INVERT gate		
SN54LS73J	Dual J-K negative-edge-triggered flip-flop with clear		
SN54LS74J	Dual D-type positive-edge-triggered flip-flop		
SN54LS75J	4-bit bistable latch		
SN54LS76J	Dual J-K negative-edge-triggered flip-flop w/preset and clear		
SN54LS78J	Dual J-K negative-edge-triggered flip-flop w/preset, common clear, common clock		Prices on Request
SN54LS83J SN54LS83AJ	4-bit binary full adder		
SN54LS85AJ	4-bit magnitude comparator		
SN54LS86J	Quad 2-input exclusive-OR gate		
SN54LS90J	Asynchronous decade counter		
SN54LS91J	8-bit serial-in/serial-out shift register		
SN54LS92J	Asynchronous divide by twelve counter		
SN54LS93J	Asynchronous binary counter		
SN54LS95AJ	4-bit right-shift left-shift register		
SN54LS96J	5-bit shift register		
SN54LS107J	Dual J-K negative-edge-triggered flip-flop with clear		
SN54LS109J	Dual J-K positive-edge-triggered flip-flop with preset and clear		
SN54LS112J	Dual J-K negative-edge-triggered flip-flop with preset and clear		
SN54LS113J	Dual J-K negative-edge-triggered flip-flop with preset		
SN54LS114J	Dual J-K negative-edge-triggered flip-flop with preset, common clear, common clock		
SN54LS122J	Retriggerable monostable multivibrator with clear		
SN54LS123J	Dual retriggerable monostable multivibrator with clear		
SN54LS125J SN54LS126J	Quad bus buffer with 3-state outputs		
SN54LS132J	Quad 2-input NAND Schmitt trigger		
SN54LS136J	SN54LS86J w/OC outputs		

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INDUSTRIAL TEMPERATURE RANGE DEVICES CONT'D

SERIES 54LS LOW-POWER SCHOTTKY-CLAMPED—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN54LS138J	3-to-8-line decoder/demultiplexer		
SN54LS139J	Dual 2-line-to-4-line decoder/demultiplexer		
SN54LS145J	BCD—decimal decoder/driver		
SN54LS151J	8-line-to-1-line data selector/multiplexer		
SN54LS153J	Dual 4-line-to-1-line data selectro/multiplexer		
SN54LS155J SN54LS156J	Dual 2-line-to-4-line decoder/demultiplexer		
SN54LS157J	Quad 2-line-to-4-line data selector/multiplexer		
SN54LS158J	Inverting quad 2-line-to-1-line data selector/multiplexer		
SN54LS164J	8-bit serial-in/parallel-out shift register		
SN54LS170J	4 x 4 register file		
SN54LS174J SN54LS175J SN54LS181J	Hex D-type register Quad D-type register ALU/function generator		
SN54LS190J	Synchronous 4-bit up/down BCD counter		
SN54LS191J	Synchronous 4-bit up/down binary counter		
SN54LS192J	Synchronous 4-bit up/down BCD counter with dual clock and clear		
SN54LS193J	Synchronous 4-bit up/down binary counter with dual clock and clear		
SN54LS194J	4-bit bidirectional universal shift register		
SN54LS195J	4-bit parallel-access shift register		
SN54LS196J	Decade 30 MHz presettable		
SN54LS197J	Binary counter/latch		
SN54LS221J	Dual retriggerable monostable multivibrator with Schmitt trigger inputs	Prices on Request	
SN54LS251J	SN54LS151J w/3-state outputs		
SN54LS253J	SN54LS153J w/3-state outputs		
SN54LS257J	Quad 2-line-to-1-line data selector/multiplexer, 3-state		
SN54LS258J	Inverting 2-line-to-1-line data selector/multiplexer, 3-state		
SN54LS261J	2's complement multiplier		
SN54LS266J	Quad 2-input exclusive-NOR gate		
SN54LS279J	Quad S-R latch		
SN54LS283J	4-bit binary full adder		
SN54LS290J	Asynchronous decade counter		
SN54LS293J	Asynchronous binary counter		
SN54LS295J	SN54LS95AJ w/3-state outputs		
SN54LS298J	Quad 2-input multiplexer		
SN54LS352J	Inverting dual 4-line-to-1-line data selector/multiplexer, 3-state		
SN54LS353J	Inverting dual 4-line-to-1-line data selector, 3-state		
SN54LS365J	Hex bus driver w/3-state output		
SN54LS366J	Inverting hex bus driver w/3-state output		
SN54LS367J	Hex bus driver w/3-state output		
SN54LS368J	Inverting hex bus driver w/3-state output		
SN54LS375J	4-bit bistable latch		
SN54LS386J	Quad exclusive OR		
SN54LS395J	4-bit cascadeable shift register		
SN54LS670J	4 x 4 register file w/3-state output		

SERIES 74 LINEAR OPERATIONAL AMPLIFIERS

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
LM2902J LM2902N LM324J LM324N	Quad operational amplifiers		
SN72L022JG SN72L022L SN72L022P	Dual low-power operational amplifiers		
SN72L044JA SN72L044N	Quad low-power operational amplifiers		
SN72301AFB SN72301AJ SN72301AJG SN72301AL SN72301AN SN72301AP	High-performance operational amplifiers		
SN72307FB SN72307J SN72307JG SN72307L SN72307N SN72307P	High-performance operational amplifiers		
SN72558JG SN72558L SN72558P	Dual operational amplifiers		
SN72702FB SN72702J SN72702L SN72702N	General-purpose operational amplifiers	Prices on Request	
SN72709FB SN72709J SN72709L SN72709N SN72709P	General-purpose operational amplifiers		
SN72741FB SN72741J SN72741JG SN72741L SN72741N SN72741P	General-purpose operational amplifiers		
SN72747FB SN72747J SN72747L SN72747N	Dual general-purpose operational amplifiers		
SN72748FB SN72748J SN72748JG SN72748L SN72748N SN72748P	Dual general-purpose operational amplifiers		
SN72777FB SN72777J SN72777JG SN72777L SN72777N SN72777P	High-performance operational amplifiers		

LINEAR DIFFERENTIAL COMPARATORS

LM2901J LM2901N LM339J LM339N	Quad comparators		
SN72306FB SN72306J SN72306JG SN72306L SN72306N SN72306P	Differential comparators with strobe		
SN72311FB SN72311J SN72311JG SN72311L SN72311N SN72311P	Differential comparators with strobe	Prices on Request	
SN72506FB SN72506J SN72506N	Dual differential comparators		
SN72510FB SN72510J SN72510JG SN72510L SN72510N SN72510P	Differential comparators		
SN72514JB SN72514N	Dual differential comparator		
SN72710FB SN72710J SN72710JG SN72710L SN72710N SN72710P	Differential comparators		

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INDUSTRIAL TEMPERATURE RANGE DEVICES (0° C TO +70° C) CONT'D

LINEAR DIFFERENTIAL COMPARATORS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN72711FB SN72711J SN72711L SN72711N	Dual differential comparators		
SN72720J SN72720N	Dual differential comparators		
SN72810FB SN72810J SN72810JG SN72810L SN72810N SN72810P	Differential comparators	Prices on Request	
SN72811FB SN72811J SN72811L SN72811N	Dual differential comparators		
SN72820J SN72820N	Dual differential comparators		

LINEAR VOLTAGE REGULATORS

SN72304L SN72304N	Negative—voltage regulators		
SN72305JG SN72305L SN72305P SN72305AL SN72305AP	Positive—voltage regulators		
SN72309LA	Voltage regulator, 5 volt		
SN72376L SN72376P	Positive—voltage regulators	Prices on Request	
SN72723FB SN72723J SN72723L SN72723N	Precision, adjustable voltage regulators		
78L05LP 78L05ALP 78L06LP 78L06ALP 78L12LP 78L12ALP 78L15LP 78L15ALP	Voltage regulators		

LINEAR VIDEO AMPLIFIERS AND SPECIAL FUNCTIONS

SN72555JG SN72555L SN72555P	Precision timers		
SN72560L SN72560P	Precision level detectors		
SN72D560L SN72D560P	Dual precision level detectors	Prices on Request	
SN76502JB SN76502N	Logarithmic amplifiers		
SN76514JB SN76514N	Balanced mixers		
SN72733FB SN72733J SN72733L SN72733N	Differential video amplifiers		

LINEAR SENSE AMPLIFIERS

SN7520J SN7520N	Sense amplifiers		
SN7521J SN7521N	Sense amplifiers		
SN7522J SN7522N	Sense amplifiers		
SN7523J SN7523N	Sense amplifiers		
SN7524J SN7524N	Sense amplifiers		
SN7525J SN7525N	Sense amplifiers		
SN7526J SN7526N	Sense amplifiers	Prices on Request	
SN7527J SN7527N	Sense amplifiers		
SN7528J SN7528N	Sense amplifiers		
SN7529J SN7529N	Sense amplifiers		
SN75232J SN75232N	Sense amplifiers		
SN75234J SN75234N	Sense amplifiers		
SN75235J SN75235N	Sense amplifiers		
SN75236SB	Dual sense amp/data registers		

LINEAR SENSE AMPLIFIERS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN75238J SN75238N	Sense amplifiers	Prices on Request	
SN75239J SN75239N	Sense amplifiers		

LINEAR LINE CIRCUITS

SN75107AJ SN75107AN SN75107BJ SN75107BN	Dual differential line receivers		
SN75108AJ SN75108AN SN75108BJ SN75108BN	Dual differential line receivers		
SN75109AJ SN75109AN	Dual line drivers		
SN75110AJ SN75110AN	Dual line drivers		
SN75112J SN75112N	Dual line drivers		
SN75113J SN75113N	Dual differential line drivers		
SN75114J SN75114N	Dual differential line drivers		
SN75115J SN75115N	Dual differential line receivers		
SN75116J SN75116N	Differential party-line transceiver		
SN75117JG SN75117P	Differential party-line transceiver		
SN75121J SN75121N	Dual line drivers		
SN75122J SN75122N	3-channel, single-ended, line receiver		
SN75123J SN75123N	Dual, single-ended, line driver	Prices on Request	
SN75124J SN75124N	3-channel, single-ended, line receiver		
SN75138J SN75138N	Quad bus transceiver		
SN75140P	Dual, single-ended, line receiver		
SN75142J SN75142N	Dual, single-ended, line receiver		
SN75150J SN75150JG SN75150N SN75150P	Dual, single-ended, line driver		
SN75152J SN75152N	Dual differential line receiver		
SN75154J SN75154N	Quad differential line receiver		
SN75182J SN75182N	Dual differential line receiver		
SN75183J SN75183N	Quad differential line driver		
SN75188J SN75188N	Quad line driver		
SN75189J SN75189N	Quad line receiver		
SN75189AJ SN75189AN	Quad line receiver		
SN75207J SN75207N	Dual differential line receiver		
SN75208J SN75208N	Dual differential line receiver		

LINEAR COMMUNICATIONS CIRCUITS

SN76001N	1 watt audio amplifier	Prices on Request
SN76005ND	5 watt audio amplifier	
SN76011ND	1 watt audio amplifier	
SN76024ND	4 watt audio amplifier	

LINEAR INTERFACE, MEMORY AND PERIPHERAL DRIVERS

SN75180L	Dual TTL to MOS level converter	Prices on Request
SN75270J SN75270N	7-unit, MOS to TTL converter arrays	
SN75322J SN75322N	Dual memory drivers	
SN75324J SN75324N	Memory drivers with decode inputs	
SN75325J SN75325N	Memory drivers with logic inputs	
SN75326J SN75326N	Quad memory drivers	

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INDUSTRIAL TEMPERATURE RANGE DEVICES (0° C TO +70° C) CONT'D

LINEAR INTERFACE MEMORY AND PERIPHERAL DRIVERS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN75327J SN75327N	Quad memory drivers		
SN75361AJ SN75361AN SN75361AP	Dual TTL to MOS drivers		
SN75362P	Dual TTL to MOS driver		
SN75363J SN75363N	Dual memory drivers		
SN75364J SN75364N SN75364P	Dual memory drivers		
SN75365J SN75365N	Quad TTL to MOS driver		
SN75366J SN75366N	Quad memory driver		
SN75367J SN75367N	Quad TTL to CMOS driver		
SN75368J SN75368N	Dual ECL to MOS driver		
SN75369J SN75369N SN75369P	Dual current input to MOS driver		
SN75370J SN75370N	Dual interface to MOS memory		
SN75401ND SN75402ND SN75403ND SN75404ND SN75411ND SN75412ND SN75413ND SN75414ND SN75432P SN75450BJ SN75450BJB SN75450BN	Dual peripheral drivers		
SN75451BJ SN75451BJG SN75451BL SN75451BP	Dual peripheral positive AND driver		
SN75452BGJ SN75452BL SN75452BP	Dual peripheral positive NAND driver	Prices on Request	
SN75453BJG SN75453BL SN75453BP	Dual peripheral positive OR driver		
SN75454BJG SN75454BL SN75454BP	Dual peripheral positive NOR driver		
SN75460J SN75460JB SN75460N	Dual peripheral driver		
SN75461JG SN75461L SN75461P	Dual peripheral positive AND driver		
SN75462JG SN75462L SN75462P	Dual peripheral positive NAND driver		
SN75463JG SN75463L SN75463P	Dual peripheral positive OR driver		
SN75464JG SN75464L SN75464P	Dual peripheral positive NOR driver		
SN75470J SN75470JB SN75470N	Dual peripheral driver		
SN75471JG SN75471L SN75471P	Dual peripheral driver		
SN75472JG SN75472L SN75472P	Dual peripheral driver		
SN75473JG SN75473L SN75473P	Dual peripheral driver		
SN75474JG SN75474L SN75474P	Dual peripheral driver		
SN75480N	Display driver		
SN75481N	Display driver		
SN75491N	MOS to VLED drivers		
SN75492N	MOS to VLED drivers		
SN75493N	Display drivers		
SN75494N	Display drivers		
SN75498N	9-digit driver		

SERIES 74 DIGITAL—TTL

SN7400J SN7400N	Quad 2-input positive-NAND gate	Prices on Request

SERIES 74 DIGITAL—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN7401J SN7401N	Quad 2-input positive-NAND gate (open collector)		
SN7402J SN7402N	Quad 2-input positive-NOR gate		
SN7403J SN7403N	Quad 2-input positive-NAND gate (open collector)		
SN7404J SN7404N	Hex inverter		
SN7405J SN7405N	Hex inverter (open collector)		
SN7406J SN7406N	30 V hex inverter buffer/driver		
SN7407J SN7407N	30 V hex buffer/driver		
SN7408J SN7408N	Quad 2-input positive-AND gate		
SN7409J SN7409N	Quad 2-input positive-AND gate (open collector)		
SN7410J SN7410N	Triple 3-input positive-NAND gate		
SN7412J SN7412N	Triple 3-input positive-NAND gate (open collector)		
SN7414J SN7414N	Hex Schmitt-trigger inverter		
SN7416J SN7416N	15 V hex inverter buffer/driver		
SN7417J SN7417N	15 V hex buffer/driver		
SN7420J SN7420N	Dual 4-input positive-NAND gate		
SN7422J SN7422N	Dual 4-input NAND gate with OC outputs		
SN7423J SN7423N	Expandable dual 4-input NOR gate with strobe		
SN7425J SN7425N	Dual 4-input NOR gate with strobe		
SN7426J SN7426N	Quad 2-input high voltage (MOS) interface NAND gate		
SN7427J SN7427N	Triple 3-input positive-NOR gate	Prices on Request	
SN7428J SN7428N	Quad 2-input positive-NOR buffer		
SN7430J SN7430N	8-input positive-NAND gate		
SN7432J SN7432N	Quad 2-input positive-OR gate		
SN7433J SN7433N	Quad 2-input positive-NOR buffer with OC outputs		
SN7437J SN7437N	Quad 2-input positive-NAND buffer		
SN7438J SN7438N	Quad 2-input positive-NAND buffer (open collector)		
SN7440J SN7440N	Dual 4-input positive-NAND buffer		
SN7442J SN7442N	BCD-to-decimal decoder		
SN7443J SN7443N	Excess-3-to-decimal decoder		
SN7444J SN7444N	Excess-3-gray-to-decimal decoder		
SN7445J SN7445N	30 V BCD-to-decimal decoder		
SN7446AJ SN7446AN	30 V BCD-to-seven-segment decoder/driver		
SN7447AJ SN7447AN	15 V BCD-to-seven-segment decoder/driver		
SN7448J SN7448N	BCD-to-seven-segment decoder		
SN7450J SN7450N	Dual 2-wide 2-input AND-OR-INVERT gate with expander inputs		
SN7451J SN7451N	Dual 2-wide 2-input AND-OR-INVERT gate		
SN7453J SN7453N	Expandable 4-wide 2-input AND-OR-INVERT gate		
SN7454J SN7454N	4-wide 2-input AND-OR-INVERT gate		
SN7460J SN7460N	Dual 4-input expander		
SN7470J SN7470N	J-K flip-flop		

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INDUSTRIAL TEMPERATURE RANGE DEVICES (0° C TO +70° C) CONT'D

SERIES 74 DIGITAL-TTL (CONTINUED)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN7472J SN7472N	J-K master-slave flip-flop	Prices on Request	
SN7473J SN7473N	Dual J-K master-slave flip-flop		
SN7474J SN7474N	Dual D-type edge-triggered flip-flop		
SN7475J SN7475N	Quad bistable latch		
SN7476J SN7476N	Dual J-K master-slave flip-flop		
SN7480J SN7480N	Gated full adder		
SN7481AJ SN7481AN	16-bit active-element memory		
SN7482J SN7482N	2-bit binary full adder		
SN7483AJ SN7483AN	4-bit binary full adder		
SN7484AJ SN7484AN	16-bit active-element memory (gated write inputs)		
SN7486J SN7486N	Quad 2-input exclusive-OR gate		
SN7488AJ SN7488AN SN7488AW	256-bit read-only memory		
SN7489J SN7489N	64-bit read-write memory		
SN7490AJ SN7490AN	Decade counter		
SN7491AJ SN7491AN	8-bit shift register		
SN7492AJ SN7492AN	Divide-by-twelve counter		
SN7493AJ SN7493AN	4-bit binary counter		
SN7494J SN7494N	4-bit shift register—parallel-in, serial-out		
SN7495AJ SN7495AN	4-bit right-shift-left-shift register—parallel-in, parallel-out		
SN7496J SN7496N	5-bit shift register—dual parallel-in, parallel-out		
SN7497J SN7497N SN7497W	6-bit binary synchronous rate multiplier		
SN74100J SN74100N	8-bit bistable latch		
SN74104J SN74104N	Gated J-K master-slave flip-flop		
SN74105J SN74105N	Gated J-K master-slave flip-flop		
SN74107J SN74107N	Dual J-K master-slave flip-flop		
SN74109J SN74109N	Dual J-K positive-edge-triggered flip-flop		
SN74110J SN74110N	Gated J-K master-slave flip-flop with data lockout		
SN74111J SN74111N	Dual J-K master-slave flip-flop with data lockout		
SN74120J SN74120N	Dual pulse synchronizer/driver		
SN74121J SN74121N	One-shot monostable multivibrator		
SN74122J SN74122N	Retriggerable monostable multivibrator with clear		
SN74123J SN74123N	Dual retriggerable monostable multivibrator with clear		
SN74125J SN74125N SN74125W	Quad bus buffer gate with tristate outputs (inverting)		
SN74126J SN74126N SN74126W	Quad bus buffer gate with tristate outputs (non-inverting)		
SN74128J SN74128N	50-ohm line driver		
SN74132J SN74132N SN74132W	Quad 2-input NAND Schmitt trigger		
SN74136J SN74136N SN74136W	Quad 2-input exclusive-OR gate with OC outputs		
SN74141J SN74141N	BCD-to-decimal decoder/driver		
SN74142J SN74142N	BCD counter/4-bit latch/BCD decoder/driver		
SN74143J SN74143N	4-bit counter/latch, seven-segment LED driver		
SN74144J SN74144N	4-bit counter/latch, seven-segment lamp driver		
SN74145J SN74145N	15 V BCD-to-decimal decoder/driver		
SN74147J SN74147N SN74147W	10-line-to-4-line priority encoder		
SN74148J SN74148N SN74148W	8-line-to-3-line priority encoder		
SN74150J SN74150N	16-bit data selector/multiplexer		
SN74151J SN74151N	8-bit data selector/multiplexer with strobe		
SN74153J SN74153N	Dual 4-line-to-1-line data selector/multiplexer		
SN74154J SN74154N	4-line-to-16-line (1 of 16) decoder/multiplexer		
SN74155J SN74155N	Dual 2-line-to-4-line decoder/multiplexer		
SN74156J SN74156N	Dual 2-line-to-4-line decoder/demultiplexer with OC outputs		
SN74157J SN74157N	Quad 2-line-to-1-line data selectors/multiplexers		
SN74160J SN74160N	Synchronous decade counter with direct clear		
SN74161J SN74161N	Synchronous 4-bit binary counter with direct clear		
SN74162J SN74162N	Fully synchronous decade counter		
SN74163J SN74163N	Fully synchronous 4-bit binary counter		
SN74164J SN74164N	8-bit parallel-out serial shift register		
SN74165J SN74165N	Parallel-load 8-bit shift register		
SN74166J SN74166N	Parallel-load 8-bit shift register		
SN74167J SN74167N SN74167W	Synchronous decade decimal rate multiplier		
SN74170J SN74170N	4-by-4 register file		
SN74172J SN74172N	16-bit multiple-port register file		
SN74173J SN74173N SN74173W	4-bit D-type register with tristate outputs		
SN74174J SN74174N	Hex D-type flip-flop with clear		
SN74175J SN74175N	Quad D-type flip-flop with clear		
SN74176J SN74176N	35 MHz presettable decade counter/latch		
SN74177J SN74177N	35 MHz presettable 4-bit binary counter/latch		
SN74178J SN74178N	4-bit parallel-access shift register		
SN74179J SN74179N	4-bit parallel-access shift register with clear		
SN74180J SN74180N	8-bit odd/even parity generator/checker		
SN74181J SN74181N	4-bit arithmetic logic unit (ALU) and function generator		
SN74182J SN74182N	Look-ahead carry generator (for arithmetic logic unit, ALU)		
SN74184J SN74184N	BCD-to-binary converter		
SN74185AJ SN74185AN	Binary-to-BCD converter		
SN74187J SN74187N SN74187W	1024-bit read-only memory		
SN74188J SN74188N	256-bit programmable read-only memory		
SN74190J SN74190N	Synchronous up/down decade counter (single clock line)		

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INDUSTRIAL TEMPERATURE RANGE DEVICES (0° C TO +70° C) CONT'D

SERIES 74 DIGITAL—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN74191J SN74191N	Synchronous up/down 4-bit binary counter (single clock line)	Prices on Request	
SN74192J SN74192N	Synchronous up/down decade counter (two clock lines)		
SN74193J SN74193N	Synchronous up/down 4-bit binary counter (two clock lines)		
SN74194J SN74194N	4-bit parallel-in, parallel-out bidirectional shift register		
SN74195J SN74195N	4-bit parallel-in, parallel-out shift register (J-K inputs to first stage)		
SN74196J SN74196N	50-MHz presettable decade counters/latches		
SN74197J SN74197N	50-MHz presettable 4-bit binary counters/latches		
SN74198J SN74198N	8-bit parallel-in, parallel-out bidirectional shift register		
SN74199J SN74199N	8-bit parallel-in, parallel-out shift register (J-K inputs to first stage)		
SN74278J SN74278N SN74278W	4-bit cascadable priority register		
SN74279J SN74279N SN74279W	Quad S-R latch		
SN74283J SN74283N SN74283W	4-bit binary full adder with fast carry		
SN74284J SN74284N SN74284W	4-bit-by-4-bit parallel binary multiplier		
SN74285J SN74285N SN74285W	4-bit-by-4-bit parallel binary multiplier		
SN74298J SN74298N SN74298W	Quad 2-input multiplexer with storage		

SERIES 74H HIGH-SPEED DIGITAL—TTL

SN74H00J SN74H00N SN74H00S	Quad 2-input positive-NAND gate	Prices on Request	
SN74H01J SN74H01N SN74H01S	Quad 2-input positive-NAND gate (open collector)		
SN74H04J SN74H04N SN74H04S	Hex inverter		
SN74H05J SN74H05N SN74H05S	Hex inverter (open collector)		
SN74H10J SN74H10N SN74H10S	Triple 3-input positive-NAND gate		
SN74H11J SN74H11N SN74H11S	Triple 3-input positive-AND gate		
SN74H15J SN74H15N	Triple 3-input AND gate with OC outputs		
SN74H20J SN74H20N SN74H20S	Dual 4-input positive-NAND gate		
SN74H21J SN74H21N SN74H21S	Dual 4-input positive-AND gate		
SN74H22J SN74H22N SN74H22S	Dual 4-input positive-NAND gate (open collector)		
SN74H30J SN74H30N SN74H30S	8-input positive-NAND gate		
SN74H40J SN74H40N SN74H40S	Dual 4-input positive-NAND buffer		
SN74H50J SN74H50N SN74H50S	Expandable dual 2-wide 2-input AND-OR-INVERT gate		
SN74H51J SN74H51N SN74H51S	Dual 2-wide 2-input AND-OR-INVERT gate		
SN74H52J SN74H52N SN74H52S	Expandable 2-2-2-3-input AND-OR gate		

SERIES 74H HIGH-SPEED DIGITAL—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN74H53J SN74H53N SN74H53S	Expandable 2-2-2-3-input AND-OR-INVERT gate	Prices on Request	
SN74H54J SN74H54N SN74H54S	2-2-2-3-input AND-OR-INVERT gate		
SN74H55J SN74H55N SN74H55S	Expandable 4-input AND-OR-INVERT gate		
SN74H60J SN74H60N SN74H60S	Dual 4-input expander		
SN74H61J SN74H61N SN74H61S	Triple 3-input expanders		
SN74H62J SN74H62N SN74H62S	3-2-2-3-input AND-OR expander		
SN74H71J SN74H71N SN74H71S	J-K master-slave flip-flop (AND-OR inputs)		
SN74H72J SN74H72N SN74H72S	J-K master-slave flip-flop (AND inputs)		
SN74H73J SN74H73N SN74H73S	Dual J-K master-slave flip-flop		
SN74H74J SN74H74N SN74H74S	Dual D-type edge-triggered flip-flop		
SN74H76J SN74H76N	Dual J-K master-slave flip-flop with preset and clear		
SN74H78J SN74H78N SN74H78S	Dual J-K master-slave flip-flop (common clock)		
SN74H87J SN74H87N SN74H87S	4-bit true/complement, zero/one element		
SN74H101J SN74H101N SN74H101S	J-K edge-triggered flip-flop (AND-OR inputs)		
SN74H102J SN74H102N SN74H102S	J-K edge-triggered flip-flop (AND inputs)		
SN74H103J SN74H103N SN74H103S	Dual J-K edge-triggered flip-flop		
SN74H106J SN74H106N	Dual J-K edge-triggered flip-flop with preset and clear		
SN74H108J SN74H108N SN74H108S	Dual J-K edge-triggered flip-flop (common clock)		
SN74H183J SN74H183N	Dual carry-save full adder		

SERIES 74S SCHOTTKY-CLAMPED—TTL

SN74S00J SN74S00N SN74S00W	Quad 2-input positive-NAND gate	Prices on Request	
SN74S03J SN74S03N SN74S03W	Quad 2-input positive-NAND gate with OC outputs		
SN74S04J SN74S04N SN74S04W	Hex inverter		
SN74S05J SN74S05N SN74S05W	Hex inverter with OC outputs		
SN74S10J SN74S10N SN74S10W	Triple 3-input positive-NAND gate		
SN74S11J SN74S11N SN74S11W	Triple 3-input positive-AND gate		
SN74S15J SN74S15N SN74S15W	Triple 3-input positive-AND gate with OC outputs		
SN74S20J SN74S20N SN74S20W	Dual 4-input positive-NAND gate		
SN74S22J SN74S22N SN74S22W	Dual 4-input positive-NAND gate with OC outputs		
SN74S40J SN74S40N SN74S40W	Dual 4-input positive-NAND buffer		

LISTING CONTINUED ON NEXT PAGE

INDUSTRIAL TEMPERATURE RANGE DEVICES (0° C TO +70° C) CONT'D

SERIES 74S SCHOTTKY-CLAMPED—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN74S64J SN74S64N SN74S64W	4-2-3-2-input AND-OR-INVERT gate		
SN74S65J SN74S65N SN74S65W	4-2-3-2-input AND-OR-INVERT gate with OC outputs		
SN74S74J SN74S74N SN74S74W	Dual D-type edge-triggered flip-flop		
SN74S86J SN74S86N	Quad exclusive-OR gate		
SN74S112J SN74S112N SN74S112W	Dual J-K negative-edge-triggered flip-flop (80 MHz) w/preset and clear		
SN74S113J SN74S113N SN74S113W	Dual J-K negative-edge-triggered flip-flop (80 MHz) with preset		
SN74S114J SN74S114N SN74S114W	Dual J-K negative-edge-triggered flip-flop (80 MHz) with common clock/clear		
SN74S133J SN74S133N	13-input NAND gate		
SN74S134J SN74S134N	12-input NAND gate with tristate outputs		
SN74S135J SN74S135N	Quad exclusive-OR-NOR gate		
SN74S138J SN74S138N	3-line-to-8-line decoder/demultiplexer		
SN74S139J SN74S139N	Dual 2-line-to-4-line decoder/demultiplexer	Prices on Request	
SN74S140J SN74S140N SN74S140W	Dual 4-input positive-NAND line driver		
SN74S151J SN74S151N	8-input data selector/multiplexer		
SN74S153J SN74S153N	Dual 4-input-to-1-line selector/multiplexer		
SN74S157J SN74S157N	Quad 2-to-1-line data selector/multiplexer (non-inverting)		
SN74S158J SN74S158N	SN74S157 except inverting		
SN74S174J SN74S174N	Hex D-type flip-flop with clear		
SN74S175J SN74S175N	Quad D-type flip-flop with clear		
SN74S181J SN74S181N	Arithmetic logic unit/function generator		
SN74S182J SN74S182N	Look-ahead carry generator		
SN74S194J SN74S194N	4-bit bidirectional universal shift register		
SN74S195J SN74S195N	4-bit parallel-access shift register		
SN74S251J SN74S251N	8-input data selector/multiplexer w/tristate outputs		
SN74S257J SN74S257N	Quad 2-line-to-1-line data selector/multiplexer w/tri-state outputs (non-invert.)		
SN74S258J SN74S258N	SN74S257 except inverting		

SERIES 74L LOW-POWER DIGITAL—TTL

SN74L00J SN74L00N	Quad 2-input positive-NAND gate		
SN74L02J SN74L02N	Quad 2-input positive-NOR gate		
SN74L03J SN74L03N	Quad 2-input positive-NAND gate (open collector)		
SN74L04J SN74L04N	Hex inverter		
SN74L10J SN74L10N	Triple 3-input positive-NAND gate		
SN74L20J SN74L20N	Dual 4-input positive-NAND gate	Prices on Request	
SN74L30J SN74L30N	8-input positive-NAND gate		
SN74L42J SN74L42N	BCD-to-decimal decoder		
SN74L46J SN74L46N	30 V BCD-to-seven-segment decoder/driver		
SN74L47J SN74L47N	15 V BCD-to-seven-segment decoder/driver		
SN74L51J SN74L51N	Dual 2-wide AND-OR-INVERT gate		
SN74L54J SN74L54N	4-wide 3-2-2-3-input AND-OR-INVERT gate		

SERIES 74L LOW-POWER DIGITAL—TTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN74L55J SN74L55N	2-wide 4-input AND-OR-INVERT gate		
SN74L71J SN74L71N	R-S master-slave flip-flop		
SN74L72J SN74L72N	J-K master-slave flip-flop		
SN74L73J SN74L73N	Dual J-K master-slave flip-flop		
SN74L74J SN74L74N	Dual D-type edge-triggered flip-flop		
SN74L75J SN74L75N	4-bit bistable latch		
SN74L78J SN74L78N	Dual J-K master-slave flip-flop (common clock)		
SN74L85J SN74L85N	4-bit magnitude comparator		
SN74L86J SN74L86N	Quad 2-input exclusive-OR gate		
SN74L90J SN74L90N	Decade counter		
SN74L91J SN74L91N	8-bit shift register		
SN74L93J SN74L93N	4-bit binary counter		
SN74L95J SN74L95N	4-bit right-shift/left-shift register	Prices on Request	
SN74L96J SN74L96N	5-bit shift register		
SN74L98J SN74L98N	4-bit data selector/storage register		
SN74L99J SN74L99N	4-bit right-shift/left-shift register		
SN74L121J SN74L121N	Monostable multivibrator		
SN74L122J SN74L122N	Retriggerable monostable multivibrator		
SN74L123J SN74L123N	Dual retriggerable monostable multivibrator with clear		
SN74L153J SN74L153N	Dual 4-line-to-1-line data selector/multiplexer		
SN74L154J SN74L154N	4-line-to-16-line decoder/demultiplexer		
SN74L157J SN74L157N	Quad 2-line-to-1-line data selector/multiplexer		
SN74L164J SN74L164N	8-bit parallel-out serial shift register		
SN74L192J SN74L192N	Synchronous 4-bit up/down BCD counter		
SN74L193J SN74L193N	Synchronous 4-bit up/down binary counter		

SERIES 15830 DIGITAL—DTL TEMPERATURE RANGE 0° C TO +70° C

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN15830N	Expandable dual 4-input NAND gate*		
SN15831N	Gated J-K/R-S flip-flop*		
SN15832N	Expandable dual 4-input NAND buffer gate		
SN15833N	Dual 4-input expander		
SN15834N	Hex inverter*		
SN15835N	Hex inverter with expandable (open-base) or transistor inputs		
SN15836N	Hex inverter*		
SN15837N	Hex inverter†	Prices on Request	
SN15838N	Hex inverter w/OC outputs		
SN15844N	Expandable dual 4-input NAND power gate		
SN15845N	Gated J-K/R-S flip-flop*		
SN15846N	Quad 2-input NAND gate*		
SN15848N	Gated J-K/R-S flip-flop†		
SN15849N	Quad 2-input NAND gate†		
SN15850N	Pulse-triggered binary flip-flop (active pull-up)		
SN15851N	Gated negative-edge-triggered monostable multivibrator		
SN15857N	Quad 2-input NAND buffer gate		

LISTING CONTINUED ON NEXT PAGE

INDUSTRIAL TEMPERATURE RANGE DEVICES (CONT'D)

SERIES 15830 DIGITAL-DTL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN15858N	Quad 2-input NAND power gate	Prices on Request	
SN15861N	Expandable dual 4-input NAND gate†		
SN15862N	Triple 3-input NAND gate*		
SN15863N	Triple 3-input NAND gate†		
SN151800N	Dual 5-input NAND gate*		
SN151801N	Dual 5-input NAND gate†		
SN151802N	Expandable 8-input NAND gate*		
SN151803N	Expandable 8-input NAND gate†		
SN151804N	10-input NAND gate*		
SN151805N	10-input NAND gate†		
SN151806N	Quad 2-input AND gate		
SN151807N	Quad 2-input AND gate		
SN151808N	Quad 2-input OR gate		
SN151809N	Quad 2-input OR gate		
SN151810N	Quad 2-input NOR gate*		
SN151811N	Quad 2-input NOR gate†		
SN151812N	Quad 2-input exclusive-OR gate		
SN158093N	Dual J-K flip-flop, individual clocks and presets*		
SN158094N	Dual J-K flip-flop, individual clocks and presets†		
SN158097N	Dual J-K flip-flop, common clocks and clears*		
SN158099N	Dual J-K flip-flop, common clocks and clears†		

*6K-ohm pull-up resistors. †2K-ohm pull-up resistors.

SERIES SN29000/SN29300—TTL
TEMPERATURE RANGE 0° C TO +70° C

Recommended replacement for Series 9000/9300.

TI Direct Replacement	Series 74 Recommended For New Designs	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN29000J	SN74106J or N	Prices on Request	
SN29001J	SN74105J or N		
SN29002J	SN7400J or N		
SN29003J	SN7410J or N		
SN29004J	SN7420J or N		
SN29005J	SN7450J or N		
SN29007J	SN7430J or N		
SN29008J	SN74H53J or N		
SN29009J	SN7440J or N		
SN29016J	SN7404J or N		
SN29024J	SN74109J or N		
SN29300J	SN74195J or N		
SN29301J	SN7442J or N		
SN29308J	SN74116J or N		
SN29309J	SN74153J or N		
SN29310J	SN74162J or N		
SN29311J	SN74154J or N		
SN29312J	SN74151J or N		
SN29316J	SN74163J or N		
SN29318J	SN74148J or N		
SN29322J	SN74157J or N		
SN29601J	SN74122J or N		

SERIES SN10000—ECL
TEMPERATURE RANGE 0° C TO +85° C

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN10100J SN10100N	Quad 2 NOR gate w/strobe	Prices on Request	
SN10101J SN10101N	Quad OR/NOR gate w/strobe		
SN10102J SN10102N	Quad 2-input NOR gate		
SN10103J SN10103N	Quad 2-input OR gate		
SN10104J SN10104N	Quad 2-input AND gate		
SN10105J SN10105N	Triple OR/NOR gate		
SN10106J SN10106N	Triple NOR gate		
SN10107J SN10107N	Triple 2-input EO/EO		
SN10108J SN10108N	Dual 4-input AND/NAND gate		

SERIES SN10000—ECL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	Net Each, Lots of 25-99
SN10109J SN10109N	Dual OR/NOR gate	Prices on Request	
SN10110J SN10110N	Dual 3-input OR line driver		
SN10111J SN10111N	Dual 3-input NOR line driver		
SN10112J SN10112N	Dual 3-input OR/NOR line driver		
SN10113J SN10113N	Quad EO/comparator		
SN10114J SN10114N	Triple line receiver		
SN10115J SN10115N	Quad line receiver		
SN10116J SN10116N	Triple line receiver		
SN10117J SN10117N	Dual 2-wide OR-AND/OR-AND-INVERT		
SN10118J SN10118N	Dual 2-wide OR-AND		
SN10119J SN10119N	4-wide OR-AND		
SN10121J SN10121N	4-wide OR-AND/OR-AND-INVERT		
SN10123J SN10123N	Triple bus driver		
SN10124J SN10124N	Quad TTL to ECL translator		
SN10125J SN10125N	Quad ECL to TTL translator		
SN10130J SN10130N	Dual D-type latch		
SN10131J SN10131N	Dual D-type master-slave F-F		
SN10132J SN10132N	Dual D-type latch, multiplexed inputs		
SN10133J SN10133N	Quad D-type latch, gated outputs		
SN10134J SN10134N	Dual D-type latch, multiplexed inputs		
SN10135J SN10135N	Dual J-K master-slave F-F		
SN10140JE	64-bit RAM (64 x 1), 90 ohm, 15 nsec		
SN10141J SN10141N	4-bit universal shift register		
SN10142JE	64-bit RAM (64 x 1), 50 ohm, 10 nsec		
SN10144JE	256-bit RAM (256 x 1)		
SN10147JE	128-bit RAM (128 x 1)		
SN10148JE	64-bit RAM (64 x 1), 50 ohm, 15 nsec		
SN10153J SN10153N	Quad D-type latch, gated outputs		
SN10158J SN10158N	Quad 2-to-1 multiplexer, true outputs		
SN10159J SN10159N	Quad 2-to-1 multiplexer, inverted outputs		
SN10160J SN10160N	12-bit parity checker/generator		
SN10161AJ SN10161AN	3-to-8 line decoder, 1 of 8 low		
SN10162J SN10162N	3-to-8 line decoder, 1 of 8 high		
SN10164AJ SN10164AN	8-to-1 multiplexer		
SN10167J SN10167N	Quad 2-to-1 multiplexer, true outputs		
SN10168J SN10168N	Quad latch with common clock		
SN10171J SN10171N	Dual 1 of 4 demultiplexer/decoder, low		
SN10172J SN10172N	Dual 1 of 4 demultiplexer/decoder, high		
SN10173J SN10173N	Quad 2-input latch		
SN10174AJ SN10174AN	Dual 4-to-1 multiplexer		
SN10175J SN10175N	5-bit register		
SN10176J SN10176N	Dual 4-to-1 multiplexer		
SN10179AJ SN10179AN	Carry look-ahead		

LISTING CONTINUED ON NEXT PAGE

INDUSTRIAL TEMPERATURE RANGE DEVICES (CONT'D)

SERIES SN10000-ECL (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
SN10180J SN10180N	Dual adder/subtractor	Prices on Request	
SN10184J SN10184N	Quint. ECL to MST translator		
SN10185J SN10185N	Hex MST to ECL translator		
SN10210J SN10210N	High speed 10110		
SN10211J SN10211N	High speed 10111		
SN10212J SN10212N	High speed 10112		
SN10231J SN10231N	200 MHz 10131		
SN10302J SN10302N	Dual J-K M-S, flip-flop		

SERIES TP4000-CMOS
TEMPERATURE RANGE −25° C TO +85° C

Also available in **J** package; prices on request. Also available in **TF4__AJ** series (−55° C to +125° C); prices on request.

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
TP4000AN	Dual 3-input NOR gate plus inverter	Prices on Request	
TP4001AN	Quad 2-input NOR gate		
TP4002AN	Dual 4-input NOR gate		
TP4007AN	Dual complementary pair plus inverter		
TP4008AN	4-bit full adder with parallel carry		
TP4009AN	Hex buffer/converter (inv.)		
TP4010AN	Hex buffer/converter (non-inv.)		
TP4011AN	Quad 2-input NAND gate		
TP4012AN	Dual 4-input NAND gate		
TP4013AN	Dual D-type flip-flop with set/reset		
TP4014AN	8-bit synchronous parallel in/serial out, shift register		
TP4015AN	Dual 4-bit serial in/parallel out, shift register		
TP4016AN	Quad bilateral switch		
TP4017AN	Decade counter/divider, decoded output		
TP4018AN	Presettable divide by n counter		
TP4019AN	Quad AND-OR-SELECT gate		
TP4020AN	14-stage binary/ripple counter		
TP4021AN	8-bit parallel in/serial out, shift register, asyn. parallel or syn. serial operation		

SERIES TP4000-CMOS (CONT'D)

TI Type	Circuits Function	Net Each, Lots of 1-24	25-99
TP4022AN	Divide by 8 counter/ divider, decoded output	Prices on Request	
TP4023AN	Triple 3-input NAND gate		
TP4024AN	7-stage binary counter		
TP4025AN	Triple 3-input NOR gate		
TP4027AN	Dual J-K master-slave F-F		
TP4028AN	BCD-to-decimal decoder		
TP4029AN	Presettable up/down binary or decade counter		
TP4030AN	Quad exclusive OR gate		
TP4040AN	12-stage binary/ripple counter		
TP4042AN	Quad clocked D-type latch		
TP4043AN	Quad 3-state NOR R/S latch		
TP4044AN	Quad 3-state NAND R/S latch		
TP4049AN	Hex buffer/converter (inv.)		
TP4050AN	Hex buffer/converter (non-inv.)		
TP4051AN	8-channel multiplexer		
TP4052AN	4-channel differential analog multiplexer		
TP4053AN	Triple 2-channel analog multiplexer		
TP4301AN	Quad 2-input NOR gate		
TP4302AN	Quad 4-2-2-1 input AND-OR-INVERT gate		
TP4303AN	Quad 2-4-4-1 input AND-OR-INVERT gate		
TP4304AN	Hex Schmitt trigger		
TP4311AN	Quad 2-input NAND gate		
TP4315AN	Hex inverter		
TP4320AN	16-channel digital multiplexer		
TP4321AN	Dual 8-channel digital multiplexer		
TP4360AN	Presettable synchronous decade counter		
TP4361AN	Presettable synchronous binary counter		
TP4362AN	Presettable fully synchronous decade counter		
TP4363AN	Presettable fully synchronous binary counter		
TP4370AN	Quad D-type flip-flop		
TP4507AN	Quad exclusive OR gate		
TP4512AN	8-channel data selector		
TP4519AN	Quad AND-OR-SELECT gate		
TP4531AN	12-bit parity tree		
TP4581AN	4-bit arithmetic logic unit		
TP4582AN	Look-ahead carry block		

TI FIELD PROGRAMMABLE READ-ONLY MEMORIES (PROM)

These fully decoded metal fuse field-programmable read-only memories are highly versatile design elements functioning as a permanent "electronic blackboard". They may be custom programmed by either supplier or user to perform a wide variety of functions ranging from look-up/conversion tables to the replacement of numerous discrete logic elements in complex sequential circuits. Programming is irreversible and, once altered, a given bit is permanently programmed; bits never having been altered may later be programmed. Operation of these devices with specified conditions will not alter the memory content.

SN54000 and **SN54S000** types are military temperature range devices, −55° C to +125° C. **SN74000** and **SN74S000** types are industrial temperature range devices, 0° C to +70° C.

TI Type	Description	No. of Pins	Net Each, Lots of 1-24*	25-99*	100-999*
SN74188AN SN54188AJ	32 x 8, open collector 32 x 8, open collector	16 16	Prices on Request		
SN74186N SN54186J	64 x 8, open collector 64 x 8, open collector	24 24			
SN74S287N SN54S287J	256 x 4, 3-state 256 x 4, 3-state	16 16			
SN74S387N SN54S387J	256 x 4, open collector 256 x 4, open collector	16 16			

*Prices do not include programming. Contact your nearest sales office for quotations on custom programmed units.

MOS
INTEGRATED CIRCUITS

Many types of equipment previously not suitable for electronic control can now take full advantage of the latest electronics technology. Equipment costs can be kept low and equipment size can be reduced easily. MOS (Metal Oxide Semiconductor) circuits are ideal for digital applications including timers and counters, data transmission and switching equipment, recorders, calculators, controls and computer equipment. MOS is also suitable for analog applications such as telemetry and test equipment. The basic MOS device combines the best attributes of the pentode vacuum tube with all the advantages of the transistor. Have high-input impedance; small, simple to fabricate and consume little power.

Inherent advantages of MOS include: Increased circuit complexity per package; lower cost per circuit function; fewer subsystems to test; fewer parts to assemble and inspect; lower power drain per function and a choice of standard or custom products. The most significant feature is the large number of semiconductor circuit elements that can be put on a small chip—up to 5,000 devices on a silicon chip only 150 x 150 mils square. Each transistor in the MOS array requires as little as 1 square mil of chip area—a great reduction over the bipolar transistors requiring 49 to 50 square mils.

RANDOM ACCESS MEMORIES

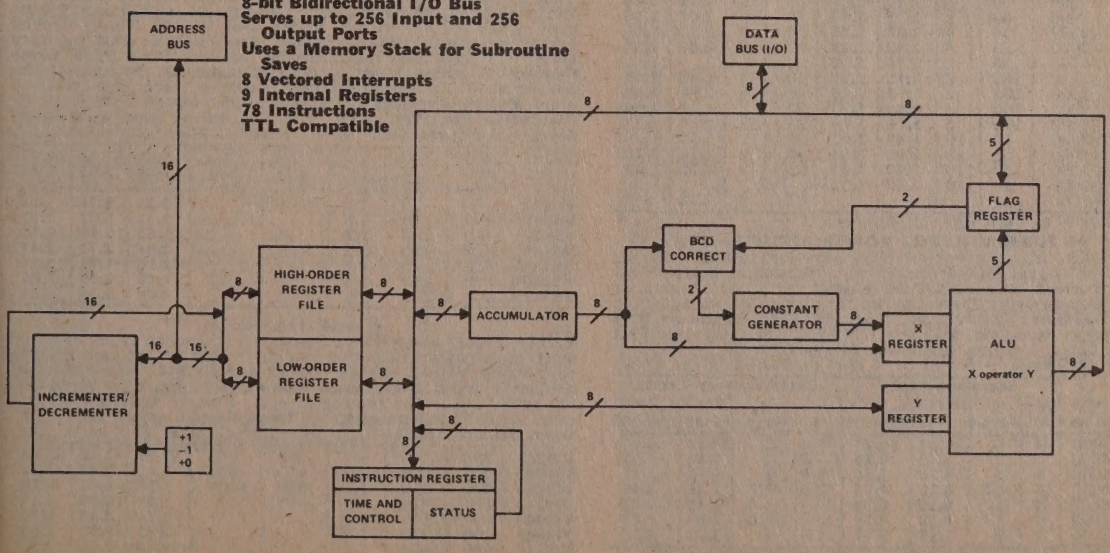
TI Type	Description	Net Ea., Lots of 1-24	Net Ea., Lots of 25-99
TMS1103 TMS1103-1 TMS4030 TMS4030-1 TMS4030-2	1024 x 1 dynamic RAM 4096 x 1 dynamic RAM	Prices on Request	
TMS4033 TMS4034 TMS4035	1024 x 1 static RAM		
TMS4036 TMS4036-1 TMS4036-2	64 x 8 static RAM		
TMS4039 TMS4039-1 TMS4039-2 TMS4042 TMS4042-1 TMS4042-2 TMS4043 TMS4043-1 TMS4043-2	256 x 4 static RAM		
TMS4050 TMS4050-1 TMS4050-2 TMS4051 TMS4051-1 TMS4060 TMS4060-1 TMS4060-2	4096 x 1 dynamic RAM		
TMS4062 TMS4063	1024 x 1 dynamic RAM		

READ-ONLY MEMORIES

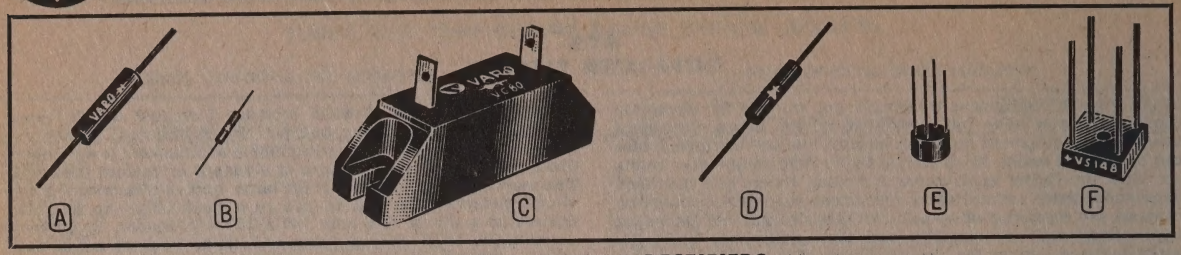
TI Type	Description	Net Ea., Lots of 1-24	Net Ea., Lots of 25-99
TMS2501 TMS4103	64 x 5 x 7 static USASCII character generator	Prices on Request	
TMS4700	1024 x 8 ROM		
TMS4800	2048 x 8 ROM		
TMS5001	4-mode dynamic 90-key keyboard encoder		
	SHIFT REGISTERS		
TMS3101	Dual 100-bit static		
TMS3112 TMS3122 TMS3123	Hex 32-bit static		
TMS3113	Dual 133-bit static		
TMS3114	Dual 128-bit static		
TMS3120	Quad 80-bit static		
TMS3121	Quad 64-bit static		
TMS3126	Dual 96-bit static		
TMS3127	Dual 100-bit static		
TMS3128	Dual 128-bit static		
TMS3129	Dual 132-bit static		
TMS3130	Dual 133-bit static		
TMS3131	Dual 136-bit static		
TMS3132	Dual 144-bit static		
TMS3133	1024-bit static		
TMS3135	80 x 9 bit static		
TMS3137	100 x 9 bit static		
TMS3138	128 x 9 bit static		
TMS3139	132 x 9 bit static		
TMS3140	133 x 9 bit static		
TMS3401	512-bit dynamic		
TMS3409	Quad 8-bit dynamic		
TMS3417	Quad 64-bit dynamic		
	MISCELLANEOUS		
TMS4024	9 x 64 bit dynamic FIFO memory	Prices on Request	
TMS6011	Asynchronous data interface (UART)		

TMS 8080-CPU

2 μsec Instruction Cycle Time
Addresses up to 65,536 Words of Memory
8-bit Bidirectional I/O Bus
Serves up to 256 Input and 256 Output Ports
Uses a Memory Stack for Subroutine Saves
8 Vectored Interrupts
9 Internal Registers
78 Instructions
TTL Compatible



Varo Silicon Rectifiers



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DIFFUSED SILICON RECTIFIERS

SERIES VF HIGH VOLTAGE RECTIFIERS (FIG. A)

Compact, low cost rectifiers for high voltage, low current use. Epoxy encapsulated ¼″ round package with tinned copper leads. Fast Recovery types have 250 nsec max. reverse recovery time with I_F=2 mA and I_R=4 mA. **Half Cycle Surge:** 3 amps maximum at 60 Hz. **Operating Temperature:** −55° C to +125° C.

Varo No.	Av. I_o mA	PIV V	Lgth.	Standard Type V_F V	Standard Type Net Ea., Lots 1-99	Standard Type Net Ea., Lots 100-999	Fast Recovery* V_F V	Fast Recovery* Net Ea., Lots 1-99	Fast Recovery* Net Ea., Lots 100-999
VF5-5	5	5000	1″	12	$1.60	$1.08	15	$1.77	$1.19
VF5-7	5	7000	1″	12	1.71	1.15	15	1.89	1.27
VF5-10	5	10,000	1″	18	1.96	1.32	30	2.16	1.45
VF5-12	5	12,000	1″	18	2.22	1.49	30	2.44	1.64
VF5-15	5	15,000	2″	35	2.30	1.55	60	2.54	1.71
VF5-20	5	20,000	2″	35	2.97	2.00	60	3.27	2.20
VF5-25	5	25,000	2″	35	3.72	2.50	60	4.09	2.75
VF5-30	5	30,000	3″	50	4.46	3.00	90	4.91	3.30
VF5-40	5	40,000	3″	50	5.95	4.00	90	6.54	4.40
VF10-5	10	5000	1″	12	1.77	1.50	15	1.95	1.65
VF10-7	10	7000	1″	12	1.89	1.60	15	2.08	1.76
VF10-10	10	10,000	1″	18	2.16	1.83	30	2.38	2.02
VF10-12	10	12,000	1″	18	2.44	2.07	30	2.68	2.27
VF10-15	10	15,000	2″	35	2.54	2.15	60	2.80	2.37
VF10-20	10	20,000	2″	35	3.27	2.77	60	3.60	3.05
VF10-25	10	25,000	2″	35	4.09	3.47	60	4.51	3.82
VF10-30	10	30,000	3″	50	4.91	4.16	90	5.39	4.57
VF10-40	10	40,000	3″	50	6.54	5.54	90	7.20	6.10
VF25-5	25	5000	1″	12	1.95	1.65	15	2.14	1.81
VF25-7	25	7000	1″	12	2.08	1.76	15	2.29	1.94
VF25-10	25	10,000	1″	18	2.38	2.02	30	2.62	2.22
VF25-12	25	12,000	1″	18	2.68	2.27	30	2.94	2.49
VF25-15	25	15,000	2″	35	2.80	2.37	60	3.08	2.61
VF25-20	25	20,000	2″	35	3.60	3.05	60	3.95	3.35
VF25-25	25	25,000	2″	35	4.51	3.82	60	4.96	4.20
VF25-30	25	30,000	3″	50	5.39	4.57	90	5.94	5.03
VF25-40	25	40,000	3″	50	7.20	6.10	90	7.91	6.70

*Add suffix **X** to Varo Number.

SERIES VA/VB HIGH VOLTAGE RECTIFIERS (FIG. B)

High reliability miniature rectifiers in epoxy encapsulated package. Low leakage current. Withstand 500G shock, 100 Hz vibration with peak acceleration of 10G. **DC Reverse Current:** .05 μA at PIV at 25° C (fast recovery types, 0.3 μA); 5.0 μA at 100° C (fast recovery, 60 μA). **Reverse Recovery:** Fast recovery types, 250 nsec. **Max. Half Cycle Surge:** 3 amps at 60 Hz. **Operating Temperature:** −55° to +150° C. **Size:** VA series, .060″ dia. x .150″ long; VB, .100″ dia. x 0.4″ long; leads 0.4″ long.

Varo No.	PIV V	Standard Type I_o mA	Standard Type V_F V	Standard Type Net Ea., Lots 1-99	Standard Type Net Ea., Lots 100-999	Fast Recovery Type* I_o mA	Fast Recovery Type* V_F V	Fast Recovery Type* Net Ea., Lots 1-99	Fast Recovery Type* Net Ea., Lots 100-999
VA10	1000	50	4	$1.36	$1.02	40	6	$1.80	$1.35
VA15	1500	50	4	1.44	1.08	40	6	1.93	1.45
VA20	2000	50	4	1.55	1.16	40	6	2.07	1.55
VA25	2500	50	4	1.66	1.25	20	8	2.20	1.65
VA30	3000	25	6	1.93	1.45	20	8	2.85	2.13
VA35	3500	25	6	2.70	2.02	.....	.....	.....	.....
VB10	1000	100	5	1.41	1.07	50	6	1.88	1.43
VB15	1500	100	5	1.51	1.15	50	6	2.01	1.53
VB20	2000	100	5	1.59	1.20	50	6	2.12	1.60
VB25	2500	100	5	1.72	1.30	25	12	2.30	1.73
VB30	3000	50	10	1.88	1.42	25	12	2.50	1.90
VB40	4000	50	10	2.05	1.56	25	12	2.74	2.08
VB50	5000	50	10	2.40	1.82	25	12	3.20	2.42
VB60	6000	50	10	2.62	1.99	.....	.....	.....	.....
1N4441	1500	.....	.....	.....	.....	25	4	2.01	1.53

*Add suffix **X** to Varo VA/VB Number.

SERIES VC HIGH VOLTAGE POWER RECTIFIERS (FIG. C)

High voltage, high current rectifiers with low leakage current; 1 to 2 amps average DC output. Epoxy encapsulated package. **DC Reverse Current:** Standard, 1 μA max; at 25° C, 40 μA max. at 100° C; Fast recovery, 2 μA max. at 25° C, 60 μA max. at 85° C. **Reverse Recovery:** Fast recovery types, 300 nsec. **Maximum Half Cycle Surge:** Standard, 50 amps at 60 Hz, non-recurrent; Fast recovery types, 35 amps. **Insulation Strength:** 10,000 VDC minimum. **Oper. Temp.:** −50° C to +125° C. **Size:** 3″ x ¾″ x ¾″.

Varo No.	PIV Volts	Standard Type V_F† V	Standard Type I_o Amps	Standard Type Net Ea., Lots 1-99	Standard Type Net Ea., Lots 100-999	Fast Recovery Type* V_F† V	Fast Recovery Type* I_o Amps	Fast Recovery Type* Net Ea., Lots 1-99	Fast Recovery Type* Net Ea., Lots 100-999
VC20	2000	4	2	$5.20	$4.00	4.8	2	$5.98	$4.60
VC30	3000	6	2	5.52	4.25	7.2	2	6.34	4.88
VC40	4000	8	2	5.85	4.50	9.6	2	6.72	5.17
VC50	5000	10	1.5	6.18	4.75	12.0	1.5	7.10	5.45
VC60	6000	12	1.5	6.50	5.00	14.4	1.5	7.47	5.75
VC70	7000	12	1.5	6.82	5.25	14.4	1.5	7.85	6.03
VC80	8000	14	1	7.15	5.50	16.8	1	8.22	6.32

*Add suffix **X** to Varo No. (e.g., VC20**X**). †At 100 mA.

SERIES VG HIGH VOLTAGE RECTIFIERS (FIG. D)

High voltage, medium current rectifiers with low leakage current in minimum sized epoxy encapsulated package. Withstand 500G shock, 100 Hz vibration with peak acceleration of 10G. **DC Reverse Current:** 1 μA at peak inverse voltage at 25° C. **Reverse Recovery:** Fast recovery types, 250 nsec. **Maximum Half Cycle Surge:** 3 amps at 60 Hz. **Operating Temperature:** Standard, −55° C to +150° C; Fast recovery, −55° C to +85° C. **Size:** .160″ dia. x 0.6″ lg.; leads 0.75″ long.

Varo No.	PIV Volts	Standard Type I_o mA	Standard Type V_F V	Standard Type Net Ea., Lots 1-99	Standard Type Net Ea., Lots 100-999	Fast Recovery Type* I_o mA	Fast Recovery Type* V_F V	Fast Recovery Type* Net Ea., Lots 1-99	Fast Recovery Type* Net Ea., Lots 100-999
VG1	1000	100	5	$0.80	$0.65	50	6	$0.85	$0.68
VG2	2000	100	5	.85	.68	50	6	.89	.71
VG3	3000	50	10	.97	.77	25	12	.99	.79
VG4	4000	50	10	1.04	.83	25	12	1.14	.91
VG5	5000	50	12	1.22	.97	25	14	1.35	1.07
VG7	7000	25	14	1.30	1.03	10	16	1.42	1.13
VG10	10000	25	20	1.49	1.18	10	24	1.64	1.30
VG12	12000	10	24	1.58	1.25	5	30	1.74	1.38
VG15	15000	10	30	1.76	1.40	5	36	1.94	1.54
VG20	20000	10	40	2.08	1.65	5	50	2.29	1.82

*Add suffix **X** to Varo No. (e.g., VG1X).

NOTE: If operated over 10,000 volts/inch in length, devices should be immersed in oil or re-encapsulated.

EPOXY BRIDGE RECTIFIERS

1-AMP I_o (FIG. E)

VE27, VE47 and VE67: Controlled avalanche types with 200 watts max. power dissipation in $V_{(BR)}$ region for 100 μsec; 1 watt continuous. **VE18, VE28, VE48 and VE68:** Non-controlled avalanche types. **VE18X, VE28X and VE48X:** Fast recovery types with 200 nsec max reverse recovery time. **Peak Surge Current:** 4 amps max., 1 sec at 60 Hz; one-cycle, 25 amps max. (non-recurrent). **Reverse Current:** 10 mA max. at 150° C; 10 μA DC at 40° C. **Operating/Storage Temp.:** −50° to +150° C. **Size:** .32″ dia. x .2″.

Varo No.	V_R/V_{RM} V	Max. V_R (RMS)	V_{FM} V/ Leg	Avalanche Volts Min.	Avalanche Volts Max.	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
VE27	200	140	1.2	250	700	$1.74	$1.45	$1.21
VE47	400	280	1.2	450	900	1.88	1.46	1.32
VE67	600	420	1.2	650	1100	2.52	1.93	1.60
VE18	100	70	1.2	.....	.....	1.31	1.10	.90
VE28	200	140	1.2	.....	.....	1.44	1.21	1.00
VE48	400	280	1.2	.....	.....	1.58	1.33	1.10
VE68	600	420	1.2	.....	.....	1.95	1.64	1.25
VE18X	100	70	1.5	.....	.....	1.96	1.65	1.35
VE28X	200	140	1.5	.....	.....	2.16	1.81	1.50
VE48X	400	280	1.5	.....	.....	2.36	1.98	1.65

2-AMP I_o (FIG. F)

VS247, VS447 and VS647: Controlled avalanche types with 300 watts max. power dissipation in $V_{(BR)}$ region for 100 μsec; 1 watt continuous. **VS148, VS248, VS448 and VS648:** Non-controlled avalanche types. **VS148X, VS248X and VS448X:** Fast recovery types with 200 nsec max. reverse recovery time. **Peak Surge Current:** 8 amps, 1 sec at 60 Hz; one-cycle, 50 amps (non-recurrent). Fast recovery types, 6 amps, 1 sec; one-cycle, 35 amps. **Reverse Current:** 10 mA max. at 150° C; 10 μA DC at 40° C. **Insulation Strength:** 2000 VDC, circuit to case. **Operating/Storage Temperature:** −50° to +150° C. **Size:** .600″ sq. x .200″.

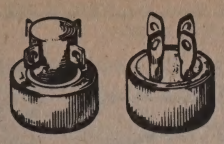
Varo No.	PIV V	Max. V_R (RMS)	V_{FM} V/ Leg	Avalanche Volts Min.	Avalanche Volts Max.	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
VS247	200	140	1.2	250	700	$1.82	$1.58	$1.27
VS447	400	280	1.2	450	900	1.99	1.65	1.37
VS647	600	420	1.2	650	1100	2.42	2.04	1.73
VS148	100	70	1.2	.....	.....	1.38	1.16	.94
VS248	200	140	1.2	.....	.....	1.51	1.27	1.05
VS448	400	280	1.2	.....	.....	1.65	1.39	1.15
VS648	600	420	1.2	.....	.....	2.06	1.73	1.47
VS148X	100	70	1.5	.....	.....	2.16	1.81	1.50
VS248X	200	140	1.5	.....	.....	2.38	2.00	1.65
VS448X	400	280	1.5	.....	.....	2.60	2.18	1.81

6-AMP I_o (FIG. F)

VH247, VH447 and VH647: Controlled avalanche types with 400 watts max. power dissipation in $V_{(BR)}$ region for 100 μsec; 2 watts continuous. **VH148, VH248, VH448 and VH648:** Non-controlled avalanche types. **Peak Surge Current:** 25 amps, 1 sec at 60 Hz; one-cycle, 100 amps (non-recurrent). **Reverse Current:** 10 mA max. at 150° C; 10 μA at 40° C. **Insulation Strength:** 2000 VDC. **Oper./Storage Temp.:** −50° to +150° C. **Size:** .600″ sq. x .200″.

Varo No.	PIV V	Max. V_R (RMS)	V_{FM} V/ Leg	Avalanche Volts Min.	Avalanche Volts Max.	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
VH247	200	140	1.2	250	700	$2.97	$2.50	$2.04
VH447	400	280	1.2	450	900	3.42	2.87	2.34
VH647	600	420	1.2	650	1100	3.94	3.30	2.70
VH148	100	70	1.2	.....	.....	2.32	1.95	1.58
VH248	200	140	1.2	.....	.....	2.58	2.17	1.75
VH448	400	280	1.2	.....	.....	2.99	2.51	2.03
VH648	600	420	1.2	.....	.....	3.46	2.91	2.35

Varo Silicon Rectifiers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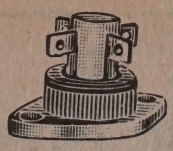
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SILICON AVALANCHE INTEGRATED FULL-WAVE BRIDGE RECTIFIERS 10 AMP I_O (FIG. G, H, OR I)

Electrically insulated welded package offers minimum size, minimum thermal resistance and maximum mounting ease. **Average DC Forward Current:** 10 amps at 100° C case temp. **Peak Surge Current:** 100 amps, one cycle at 60 Hz. **Avalanche Power Dissipation:** 600 watts, 100 μsec square wave. **Maximum DC Reverse Current:** .2 mA/leg, T_C=160° C max. **Forward Voltage Drop:** 1.3 volts/leg at 10 amps. **Insulation Strength:** 2000 VDC min. **Operating/Storage Temperature:** −65° C to +160° C. **Size:** .752″ dia. x .405″ h. Terminals, .420″ long with .070″ dia. hole in each. Also available with flag terminals .400″ long x .187″ with .110″ dia. hole in each (add **/F** to Varo No.). **Mounting:** Press-fit, Fig. G; TO-3 flange, Fig. H (add **/T** to Varo No.); single stud, Fig. I (add **/S** to Varo No.).

Varo No.	Fig.	V_{RM} (Wkg.) Volts	Max. V_R (rms)	Avalanche Volts Min.	Avalanche Volts Max.	Net Each, Lots of 1-24	25-99	100-999
1N4436	G	200	140	250	500	$5.48	$4.57	$3.36
1N4436/F	G	200	140	250	500	5.48	4.57	3.36
1N4436/F/T	H	200	140	250	500	5.80	4.84	3.58
1N4436/F/S	I	200	140	250	500	6.00	5.00	3.69
1N4437	G	400	280	450	700	7.20	6.00	4.40
1N4437/F	G	400	280	450	700	7.20	6.00	4.40
1N4437/F/T	H	400	280	450	700	7.53	6.27	4.62
1N4437/F/S	I	400	280	450	700	8.49	6.44	4.73
1N4438	G	600	400	650	900	9.83	8.20	6.00
1N4438/F	G	600	400	650	900	9.83	8.20	6.00
1N4438/F/T	H	600	400	650	900	10.16	8.47	6.22
1N4438/F/S	I	600	400	650	900	10.36	8.63	6.33

SILICON AVALANCHE INTEGRATED FULL-WAVE BRIDGE RECTIFIERS 25 AMP I_O (FIG. G, H, OR I)

Electrically insulated welded package offers minimum size, minimum thermal resistance and maximum mounting ease. **Average DC Forward Current:** 25 amps at 100° C case temp. **Peak Surge Current:** 250 amps, one cycle at 60 Hz. **Avalanche Power Dissipation:** 1500 watts, 100 μsec square wave. **Maximum DC Reverse Current:** 5 mA/leg, T_C=180° C. **Maximum Forward Voltage Drop:** 1.5 volts/leg at 25 amps. **Insulation Strength:** 2000 VDC min. **Operating/Storage Temperature:** −65° C to +180° C. **Size:** .752″ dia. x .405″ h. Available with flag terminals only, .400″ long x .187″ with .110″ dia. hole in each. **Mounting:** Press-fit, Fig. G; TO-3 flange, Fig. H; (add **/T** to Varo No.); single stud, Fig. I (add **/S** to Varo No.).

Varo No.	Fig.	V_{RM} (Wkg.) Volts	Max. V_R (rms)	Avalanche Volts Min.	Avalanche Volts Max.	Net Each, Lots of 1-24	25-99	100-999
VT200	G	200	140	250	700	$7.06	$5.89	$4.35
VT200/T	H	200	140	250	700	7.39	6.16	4.57
VT200/S	I	200	140	250	700	7.59	6.33	4.68
VT400	G	400	280	450	900	9.24	7.70	5.83
VT400/T	H	400	280	450	900	9.57	7.98	6.05
VT400/S	I	400	280	450	900	9.77	8.14	6.16
VT600	G	600	400	650	1100	13.00	10.84	7.81
VT600/T	H	600	400	650	1100	13.33	11.11	8.03
VT600/S	I	600	400	650	1100	13.53	11.28	8.14

DIB™ 1 AMP DUAL-IN-LINE BRIDGE (FIG. J)

Miniature DIP package suitable for automatic handling, testing and inserting. Pins on standard 0.10″ grid spacing. Glass-passivated diodes. **Average DC Forward Current:** 1 Amp at T_A = 40° C. **Peak Surge Current:** 25 Amps, ½ cycle at 60 Hz. **Maximum DC Reverse Current** (per diode): 5 μA at T_A = 40° C; 0.5 mA at T_A = 150° C. **Forward Voltage Drop** (per diode): 1.2 Volts. **Operating/Storage Temperature:** −50° to +150° C. **Size:** .370″ l. x .240″ w. x .140″ d. Moisture-resistant epoxy case.

Varo No.	Fig.	Maximum V_{RM} (Wkg.) Volts	Maximum V_R (rms)	Maximum I_O Amp	Net Each, Lots of 1-24	25-99	100-999
VM25	J	25	18	1	$0.85	$0.71	$0.46
VM08	J	50	35	1	.88	.73	.48
VM18	J	100	70	1	.92	.77	.52
VM28	J	200	140	1	1.00	.83	.55
VM48	J	400	280	1	1.07	.89	.58
VM68	J	600	420	1	1.16	.97	.64
VM88	J	800	560	1	1.55	1.29	.85
VM108	J	1000	700	1	1.68	1.40	.95

15 AMP AND 30 AMP EBR™ EPOXY BRIDGE RECTIFIERS (FIG. N)

VL Series, 15 A; VK Series, 30 A; both have controlled avalanche types with 600 W (VL) and 1500 W (VK) power dissipation in $V_{(BR)}$ region for 100 μsec. **Peak Surge Currents:** (VL) 30 A; (VK) 75 A for 1 sec. at 60 Hz, T_C = 80° C. **Reverse Current:** (VL) 5 μA at rated V_{RM}, T_J = 40° C; 0.5 mA at T_J = 175° C. (VK) 10 μA at rated V_{RM}, T_J = 40° C; 1 mA at T_J = 175° C. **Insulation Strength,** circuit-to-case: 1500 VDC. **Operating/Storage Range:** −50° to +175° C. **Size:** .76″ square. Fast recovery types available.

Varo No.	Fig.	Maximum V_{RM} (Wkg.) Volts	Maximum V_R (rms)	Maximum I_O Amps	Maximum $V_{(BR)}$ Min.	Net Each, Lots of 1-24	25-99	100-999
VL048	N	50	35	15	—	$3.41	$2.84	$2.29
VL148	N	100	70	15	—	3.55	2.96	2.38
VL247	N	200	140	15	250	4.41	3.67	2.94
VL248	N	200	140	15	—	3.65	3.04	2.44
VL447	N	400	280	15	450	4.54	3.78	3.03
VL448	N	400	280	15	—	3.76	3.13	2.51
VL647	N	600	420	15	650	5.12	4.27	3.33
VL648	N	600	420	15	—	4.24	3.53	2.77
VL847	N	800	560	15	850	5.48	4.57	3.63
VL848	N	800	560	15	—	4.54	3.78	3.01
VL1048	N	1000	700	15	—	4.78	3.98	3.19
VK048	N	50	35	30	—	3.93	3.27	2.62
VK148	N	100	70	30	—	4.02	3.35	2.68
VK247	N	200	140	30	250	5.00	4.17	3.32
VK248	N	200	140	30	—	4.14	3.45	2.76
VK447	N	400	280	30	450	5.20	4.33	3.47
VK448	N	400	280	30	—	4.31	3.59	2.88
VK647	N	600	420	30	650	5.56	4.63	3.68
VK648	N	600	420	30	—	4.60	3.83	3.05
VK847	N	800	560	30	850	6.38	5.31	4.19
VK848	N	800	560	30	—	5.27	4.39	3.48
VK1048	N	1000	700	30	—	5.57	4.64	3.68

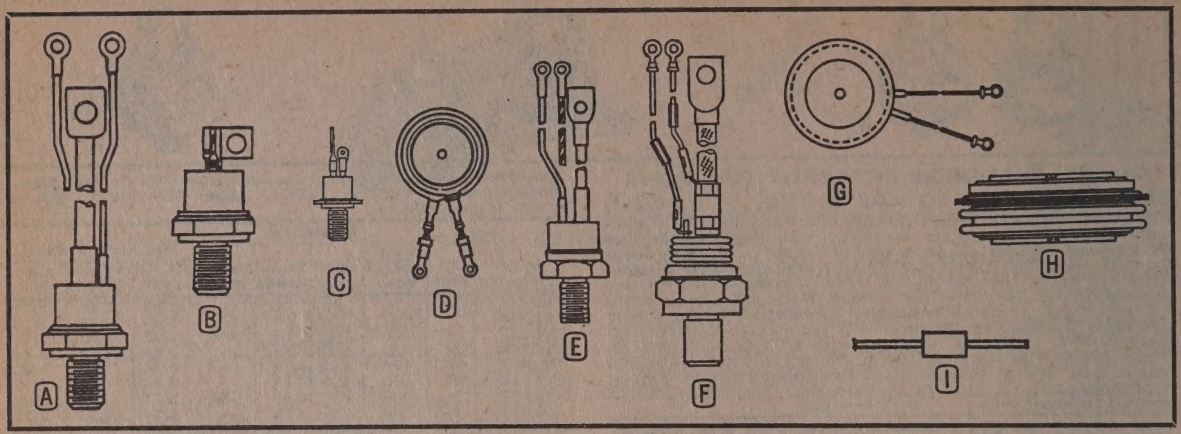
SCHOTTKY BARRIER RECTIFIERS 1A, 3A, 5A, 15A (FIG. K, L, M)

Extremely fast recovery and very low forward voltages. 1 Amp in DO-41 package; 3 & 5 Amp in epoxy packages; 15 Amp in DO-4 package. **Peak Surge Currents,** ½ cycle, 60 Hz: 40 Amps for 1A (I_O); 150 Amps for 3A (I_O); 250 Amps for 5A (I_O); 300 Amps for 15A (I_O). **Maximum Reverse Currents,** at rated V_{RM}: 10, 30, 75, & 75 mA (T_L or T_C = 100° C). **Maximum Forward Voltage Drop:** i_F = 1.0 A, .450 & .550 V; i_F = 3.0 A, .475 & .550 V; i_F = 5.0 A, .380 V; i_F = 15 A, .550 V.

Varo No.	Fig.	Maximum V_{RM} Volts	Maximum V_R (rms)	Maximum I_O Amps	Net Each, Lots of 1-9	100-999
VSK120	K	20	14	1	$2.60	$1.80
VSK130	K	30	21	1	3.52	2.35
VSK320	L	20	14	3	4.20	2.80
VSK330	L	30	21	3	5.13	3.41
VSK520	L	20	14	5	4.39	2.93
VSK530	L	30	21	5	5.57	3.75
VSK1520	M	20	14	15	5.34	3.56
VSK1530	M	30	21	15	6.87	4.58

3 AMP AXIAL LEAD SILICON RECTIFIERS 100 AMP SURGE AND 200 AMP SURGE (FIG. O)

Varo No.	V_{RRM} V	V_R (rms) Volt	V_{FM} Volt	I_O Amp	$V_{(BR)}$ Min. Volt	trr nsec. Max.	Net Ea., Lots of 1-99	100-999
100 AMP SURGE								
V322	200	140	1.2	3	250	—	$0.61	$0.44
V324	400	280	1.2	3	450	—	.64	.45
V326	600	420	1.2	3	650	—	.75	.53
V328	800	560	1.2	3	850	—	.92	.66
V330	50	35	1.2	3	—	—	.39	.27
V331	100	70	1.2	3	—	—	.40	.28
V332	200	140	1.2	3	—	—	.42	.30
V334	400	280	1.2	3	—	—	.44	.32
V336	600	420	1.2	3	—	—	.48	.34
V338	800	560	1.2	3	—	—	.53	.38
V3310	1000	700	1.2	3	—	—	.70	.50
V330X	50	35	1.4	3	—	200	.59	.41
V331X	100	70	1.4	3	—	200	.55	.42
V332X	200	140	1.4	3	—	200	.63	.44
V334X	400	280	1.4	3	—	200	.67	.47
V336X	600	420	1.4	3	—	200	.82	.58
200 AMP SURGE								
V342	200	140	1.1	3	250	—	$0.73	$0.53
V344	400	280	1.1	3	450	—	.75	.54
V346	600	420	1.1	3	650	—	.87	.63
V348	800	560	1.1	3	850	—	1.07	.76
V350	50	35	1.1	3	—	—	.48	.35
V351	100	70	1.1	3	—	—	.49	.36
V352	200	140	1.1	3	—	—	.51	.37
V354	400	280	1.1	3	—	—	.53	.38
V356	600	420	1.1	3	—	—	.57	.40
V358	800	560	1.1	3	—	—	.63	.46
V3510	1000	700	1.1	3	—	—	.81	.58
V350X	50	35	1.4	3	—	200	.76	.55
V351X	100	70	1.4	3	—	200	.78	.56
V352X	200	140	1.4	3	—	200	.80	.58
V354X	400	280	1.4	3	—	200	.86	.62
V356X	600	420	1.4	3	—	200	.96	.71



SCR types are listed by half sine-wave average current rating at 180° conduction angle. Surge ratings are peak one-half cycle currents at 60 Hz. Voltage ratings are maximum steady state blocking voltages. Complete with mounting hardware.

T507 SERIES FAST SWITCHING THYRISTORS (FIG. A AND B)

Specify flexible (Fig. A) or flag (Fig. B) terminals.
Series T507__4054—40 A avg.; 63 A rms; t_{off} = 30 μsec.
Series T507__4064—40 A avg.; 63 A rms; t_{off} = 20 μsec.

V_{FB} V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T507014054	$ 22.75	$13.75	T507014064	$ 23.50	$14.25
200	T507024054	29.50	17.75	T507024064	30.75	18.50
300	T507034054	30.75	18.50	T507034064	32.00	19.25
400	T507044054	36.50	22.00	T507044064	38.75	23.25
500	T507054054	43.25	26.00	T507054064	46.50	28.00
600	T507064054	50.00	30.00	T507064064	52.50	31.50
700	T507074054	61.50	36.75	T507074064	66.00	39.50
800	T507084054	73.00	43.75	T507084064	77.50	46.50
900	T507094054	84.00	50.50	T507094064	88.50	53.50
1000	T507104054	95.50	57.50	T507104064	100.00	60.00
1200	T507124054	107.00	64.00	.....	.....	.....

Series T507__4074—40 A avg.; 63 A rms; t_{off} = 15 μsec.
Series T507__4084—40 A avg.; 63 A rms; t_{off} = 10 μsec.

V_{FB} V	W-H Type	W-H Type	Net Each, Lots of 1-9	Net Each, Lots of 10-99
100	T507014074	T507014084	$25.00	$15.00
200	T507024074	T507024084	32.00	19.25
300	T507034074	T507034084	34.25	20.50
400	T507044074	T507044084	41.00	24.50
500	T507054074	T507054084	49.00	29.50
600	T507064074	T507064084	59.00	35.50
700	T507074074	.....	70.50	42.25
800	T507084074	.....	82.00	49.00

T507__7054 Series: 70 A avg.; 110 A rms; t_{off} = 30 μsec.
T507__7064 Series: 70 A avg.; 110 A rms; t_{off} = 20 μsec.

V_{FB} V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T507017054	$ 25.00	$15.00	T507017064	$ 26.25	$15.75
200	T507027054	30.75	18.50	T507027064	32.00	19.25
300	T507037054	33.00	19.75	T507037064	34.25	20.50
400	T507047054	39.75	24.00	T507047064	41.00	24.50
500	T507057054	47.75	28.75	T507057064	50.00	30.00
600	T507067054	59.00	35.50	T507067064	61.50	36.75
700	T507077054	70.50	42.25	T507077064	73.00	43.75
800	T507087054	79.50	47.75	T507087064	84.00	50.50
900	T507097054	88.50	53.50	T507097064	95.50	57.50
1000	T507107054	103.00	61.50	T507107064	107.00	64.00
1200	T507127054	121.00	72.50	.....	.....	.....

T507__7074 Series—70 A avg.; 110 A rms; t_{off} = 15 μsec.
T507__7084 Series—70 A avg.; 110 A rms; t_{off} = 10 μsec.

V_{FB} V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T507017074	$27.25	$16.50	T507017084	$27.25	$16.50
200	T507027074	34.25	20.50	T507027084	34.25	20.50
300	T507037074	37.50	22.50	T507037084	37.50	22.50
400	T507047074	45.50	27.25	T507047084	45.50	27.25
500	T507057074	54.50	32.75	T507057084	54.50	32.75
600	T507067074	68.50	41.00	T507067084	68.50	41.00
700	T507077074	79.50	47.75	.....	.....	.....
800	T507087074	91.00	54.50	.....	.....	.....

HIGH TEMPERATURE THYRISTORS

2N2023–2N2030 (Fig. A)—80 A; 110 A rms; 1200 A surge.

V_{FB} V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	V_{FB} V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
25	2N2023	$25.00	$15.00	200	2N2027	$39.75	$24.00
50	2N2024	32.50	19.50	250	2N2028	41.00	24.50
100	2N2025	37.00	22.25	300	2N2029	42.00	25.25
150	2N2026	38.75	23.25	400	2N2030	45.50	27.25

LOW POWER THYRISTORS

2N681–2N690 (Fig. C)—20 A; 25 A rms max.; 150 A surge.

V_{FB} V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	V_{FB} V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
25	2N681	$4.30	$2.95	250	2N686	$6.20	$4.20
50	2N682	4.30	2.95	300	2N687	6.70	4.60
100	2N683	4.82	3.35	400	2N688	7.70	5.30
150	2N684	5.50	3.75	500	2N689	9.30	6.40
200	2N685	5.60	3.80	600	2N690	9.90	6.80

2N1842A–2N1850A (Fig. C)—10 A at 90° C; 16 A rms max.; 125 A surge.

V_{FB} V	W-H Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999
25	2N1842A	$3.45	$2.40
50	2N1843A	3.45	2.40
100	2N1844A	3.86	2.65
150	2N1845A	4.50	3.10
200	2N1846A	5.20	3.55
250	2N1847A	6.00	4.10
300	2N1848A	6.40	4.40
400	2N1849A	7.60	5.20
500	2N1850A	8.80	6.10

T400__1008 Series (Fig. C)—10 A avg.; 16 A rms.
T400__1608 Series (Fig. C)—16 A avg.; 22 A rms.

V_{FB} V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
50	T400001008	$3.10	$2.10	T400001608	$ 4.05	$2.70
100	T400011008	3.55	2.35	T400011608	4.60	3.10
200	T400021008	4.90	3.35	T400021608	5.10	3.40
300	T400031008	6.20	4.15	T400031608	6.30	4.20
400	T400041008	7.20	4.75	T400041608	7.40	4.92
500	T400051008	8.50	5.70	T400051608	8.60	5.80
600	T400061008	9.70	6.50	T400061608	10.00	6.75

T400__2208 Series (Fig. C)—22 A avg.; 35 A rms.
T400__2218 Series (Fig. C)—22 A avg.; 35 A rms; I_{FSM} = 360 A.

V_{FB} V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
50	T400002208	$ 4.60	$3.10
100	T400012208	5.20	3.45
200	T400022208	6.10	4.05
300	T400032208	7.30	4.81
400	T400042208	8.50	5.70
500	T400052208	10.25	6.70
600	T400062208	11.00	7.30

*C137E. †C137M.

PRICING FOR LOW POWER THYRISTORS TO 1200 VOLTS AVAILABLE ON REQUEST.

SEE PRECEDING AND FOLLOWING PAGES FOR ILLUSTRATIONS

MEDIUM POWER THYRISTORS (FIGS. A, B)

Specify flexible (Fig. A) or flag (Fig. B) terminals.

T500__50 Series—40 A avg.; 63 A rms; 1200 A surge.

V_{FB} V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	V_{FB} V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	T5100150	$16.75	$ 9.90	700	T5000740	$46.50	$28.00
200	T5100250	17.25	10.25	800	T5000840	51.50	30.75
300	T5100350	18.25	10.75	900	T5000940	57.00	34.25
400	T5100450	19.50	13.50	1000	T5001040	62.50	37.50
500				1200	T5001240	79.50	47.75
600	T5100650	25.00	18.75	1400	T5001440	91.00	54.50

2N4361–2N4368 (Fig. A)—70 A; 110 A rms max ; 1600 A surge.
2N4371–2N4378 (Fig. B)—70 A; 110 A rms max.; 1600 A surge.

V_{FB} V	W-H Type	W-H Type	Net Each, Lots of 1-9	Net Each, Lots of 10-99
100	2N4361	2N4371	$22.75	$13.75
200	2N4362	2N4372	26.75	16.00
400	2N4363	2N4373	36.50	22.00
600	2N4364	2N4374	45.50	27.25
800	2N4365	2N4375	57.00	34.25
1000	2N4366	2N4376	68.50	41.00
1200	2N4367	2N4377	78.50	47.00
1400	2N4368	2N4378	91.00	54.50

2N1700 Series—80 A avg.; 110 A rms; 1000 A surge.

V_{FB} V	W-H Type	Net Each, Lots of 1-9	Net Each, Lots of 10-99
50	2N1792	$24.75	$15.50
100	2N1793	24.75	15.00
150	2N1794	25.75	15.50
200	2N1795	27.00	16.25
250	2N1796	29.50	17.75
300	2N1797	32.00	19.25
400	2N1798	36.50	22.00
500	2N1799	41.00	24.50
600	2N1800	45.50	27.25
700	2N1801	52.50	31.50
800	2N1802	57.00	34.25
900	2N1803	62.50	37.50
1000	2N1804	68.50	41.00

2N1900 Series—80 A avg.; 110 A rms; 1000 A surge.

50	2N1909	$22.75	$13.75
100	2N1910	22.75	13.75
150	2N1911	22.75	13.75
200	2N1912	25.00	15.00
250	2N1913	27.25	16.50
300	2N1914	29.50	17.75
400	2N1915	32.00	19.25
500	2N1916	36.50	22.00
600	2N1805	41.00	24.50
700	2N1806	45.50	27.25
800	2N1807	52.50	31.50

T500__80 Series—80 A; 125 A rms max.; 1600 A surge.

V_{FB} V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	V_{FB} V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	T5100180	$19.50	$12.00	700	T5000780	$57.00	$34.25
200	T5100280	20.50	12.50	800	T5000880	62.50	37.50
300	T5100380	23.75	14.00	900	T5000980	68.50	41.00
400	T5100480	27.50	16.25	1000	T5001080	73.00	43.75
500	T5100580	31.25	18.75	1200	T5001280	84.00	50.50
600	T5100680	34.25	20.50	1400	T5001480	95.50	57.50

HIGH POWER THYRISTORS

T520__06 Series (Fig. D)—60 A; 95 A rms.
T520__12 Series (Fig. D)—120 A; 190 A rms.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
100	T5200106	$16.50	$10.00	T5200112	$19.00	$11.50
200	T5200206	17.50	10.50	T5200212	22.50	13.50
300	T5200306	21.00	12.00	T5200312	25.50	15.50
400	T5200406	23.00	13.00	T5200412	28.00	16.75
500	T5200506	25.00	15.00	T5200512	30.00	18.00
600	T5200606	29.00	17.00	T5200612	34.00	20.50
700	T5200706	33.00	20.00	T5200712	38.00	23.00
800	T5200806	38.00	23.00	T5200812	43.00	26.00
900	T5200906	43.00	26.00	T5200912	48.00	29.00
1000	T5201006	47.00	28.00	T5201012	52.00	31.00
1200	T5201206	52.00	31.00	T5201212	60.00	36.00
1400	T5201406	60.00	36.00	T5201412	70.00	42.00

T520__13 Series (Fig. D)—125 A; 200 A rms; 1600 A surge.
T600__13 Series (Fig. E)—125 A; 200 A rms; 3300 A surge.

100	T5200113	$32.25	$19.50	T600011304	$38.75	$23.25
200	T5200213	32.25	19.50	T600021304	43.25	26.00
300	T5200313	34.25	20.75	T600031304	49.00	29.50
400	T5200413	36.50	22.00	T600041304	57.00	34.25
500	T5200513	38.75	23.25	T600051304	68.50	41.00
600	T5200613	40.75	24.50	T600061304	76.00	45.75
700	T5200713	43.00	25.75	T600071304	85.50	51.50
800	T5200813	49.25	29.75	T600081304	96.50	58.00
900	T5200913	56.00	33.50	T600091304	106.00	63.50
1000	T5201013	60.00	36.00	T600101304	120.00	71.50
1200	T5201213	68.50	41.25	T600121304	131.00	78.50
1400	T5201413	86.00	51.50	T600141304	159.00	95.50

HIGH POWER THYRISTORS (CONTINUED)

T620__13 Series (Fig. D)—125 A; 200 A rms; 3300 A surge.
T600__15 Series (Fig. E)—150 A; 235 A rms; 4000 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
100	T620011304	$36.50	$22.00	T600011504	$45.50	$27.25
200	T620021304	38.75	23.25	T600021504	49.00	29.50
300	T620031304	43.25	26.00	T600031504	54.50	32.75
400	T620041304	50.00	30.00	T600041504	61.50	36.75
500	T620051304	59.00	35.50	T600051504	73.00	43.75
600	T620061304	68.50	41.00	T600061504	82.00	49.00
700	T620071304	74.00	44.25	T600071504	91.00	54.50
800	T620081304	81.00	48.50	T600081504	103.00	61.50
900	T620091304	88.50	53.50	T600091504	114.00	68.50
1000	T620101304	98.00	59.00	T600101504	123.00	73.50
1200	T620121304	105.00	63.00	T600121504	146.00	87.50
1400	T620141304	125.00	75.00	T600141504	171.00	103.00

2N3884–2N3896 (Fig. E)—175 A; 275 A rms; 5000 A surge.
T600__18 Series (Fig. E)—175 A; 275 A rms; 5500 A surge.

50	2N3884	$49.00	$29.50			
100	2N3885	51.50	30.75	T600011804	$ 51.50	$ 30.75
200	2N3886	54.50	32.75	T600021804	54.50	32.75
300	2N3887	60.50	36.25	T600031804	60.50	36.25
400	2N3888	68.50	41.00	T600041804	68.50	41.00
500	2N3889	79.50	47.75	T600051804	79.50	47.75
600	2N3890	87.50	52.50	T600061804	87.50	52.50
700	2N3891	103.00	61.50	T600071804	103.00	61.50
800	2N3892	114.00	68.50	T600081804	114.00	68.50
900	2N3893	125.00	75.00	T600091804	125.00	75.00
1000	2N3894	137.00	82.00	T600101803	137.00	82.00
1200	2N3895	159.00	95.50	T600121804	159.00	95.50
1400	2N3896	193.00	116.00	T600141804	193.00	116.00

T620__20 Series (Fig. D)—200 A; 320 A rms; 4000 A surge.
T700__25 Series (Fig. F)—250 A; 400 A rms; 7000 A surge.

100	T620012004	$36.50	$22.00	T700012504	$59.00	$35.50
200	T620022004	38.75	23.25	T700022504	62.50	37.50
300	T620032004	43.25	26.00	T700032504	68.50	41.00
400	T620042004	50.00	30.00	T700042504	79.50	47.75
500	T620052004	59.00	35.50	T700052504	98.00	59.00
600	T620062004	68.50	41.00	T700062504	112.00	67.00
700	T620072004	77.50	46.50	T700072504	120.00	71.50
800	T620082004	86.50	52.00	T700082504	131.00	78.50
900	T620092004	95.50	57.50	T700092504	137.00	82.00
1000	T620102004	105.00	63.00	T700102504	148.00	88.50
1200	T620122004	116.00	69.50	T700122504	171.00	103.00
1400	T620142004	137.00	82.00	T700142504	193.00	116.00
1600				T700162504	216.00	130.00

T700__30 Series (Fig. F)—300 A; 470 A rms; 8400 A surge.
T620__30 Series (Fig. D)—300 A; 470 A rms; 5500 A surge.

100	T700013004	$59.00	$35.50	T620013004	$41.00	$24.50
200	T700023004	68.50	41.00	T620023004	45.50	27.25
300	T700033004	49.50	47.75	T620033004	50.00	30.00
400	T700043004	91.00	54.50	T620043004	57.00	34.25
500	T700053004	109.00	65.50	T620053004	66.00	39.50
600	T700063004	123.00	73.50	T620063004	75.00	45.00
700	T700073004	134.00	80.50	T620073004	68.50	41.00
800	T700083004	146.00	87.50	T620083004	95.50	57.50
900	T700093004	157.00	94.00	T620093004	91.00	54.50
1000	T700103004	168.00	101.00	T620103004	114.00	68.50
1200	T700123004	196.00	118.00	T620123004	125.00	75.00
1400	T700143004	216.00	130.00	T620143004	148.00	88.50
1600	T700163004	239.00	143.00			

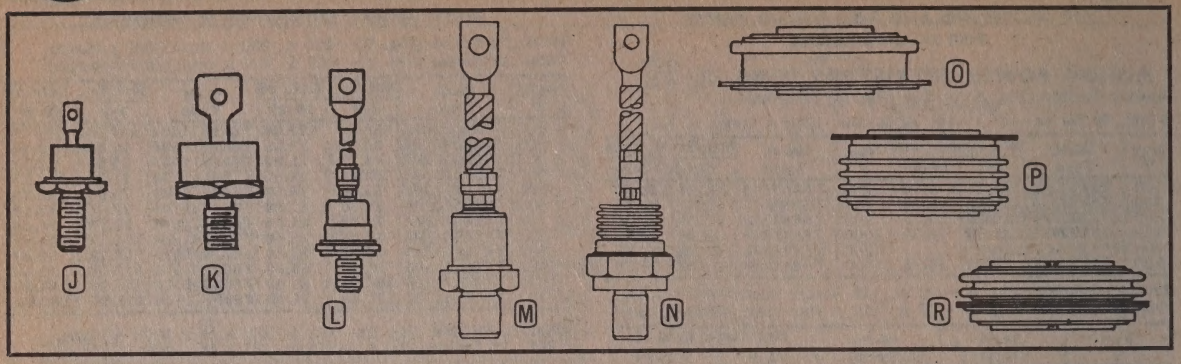
T700__35 Series (Fig. F)—350 A; 550 A rms; 10,000 A surge.
T720__35 Series (Fig. G)—350 A; 550 A rms; 7000 A surge.

100	T700013504	$64.00	$38.25	T720013504	$79.50	$47.75
200	T700023504	74.00	44.25	T720023504	86.50	52.00
300	T700033504	91.00	54.50	T720033504	91.00	54.50
400	T700043504	103.00	61.50	T720043504	100.00	60.00
500	T700053504	121.00	72.50	T720053504	109.00	65.50
600	T700063504	134.00	80.50	T720063504	118.00	71.00
700	T700073504	146.00	87.50	T720073504	130.00	78.00
800	T700083504	157.00	94.00	T720083504	141.00	84.50
900	T700093504	179.00	101.00	T720093504	152.00	91.50
1000	T700103504	180.00	108.00	T720103504	164.00	98.00
1200	T700123504	184.00	111.00	T720123504	175.00	105.00
1400	T700143504	250.00	150.00	T720143504	198.00	119.00
1600				T720163504	221.00	133.00
1800				T720183504	250.00	150.00
2000				T720203504	295.00	177.00
2200				T720223504	341.00	205.00

T720__45 Series (Fig. G)—450 A; 700 A rms; 8400 A surge.
T720__55 Series (Fig. G)—550 A; 850 A rms; 10,000 A surge.

100	T720014504	$91.00	$54.50	T720015504	$103.00	$61.50
200	T720024504	98.00	59.00	T720025504	109.00	65.50
300	T720034504	103.00	61.50	T720035504	114.00	68.50
400	T720044504	112.00	67.00	T720045504	123.00	73.50
500	T720055404	121.00	72.50	T720055504	132.00	79.00
600	T720064504	130.00	78.00	T720065504	141.00	84.50
700	T720074504	141.00	84.50	T720075504	152.00	91.50
800	T720084504	152.00	91.50	T720085504	164.00	98.00
900	T720094504	164.00	98.00	T720095504	175.00	105.00
1000	T720104504	175.00	105.00	T720105504	187.00	112.00
1200	T720124504	193.00	116.00	T720125504	216.00	130.00
1400	T720144504	227.00	137.00	T720145504	255.00	153.00
1600	T720164504	273.00	164.00			
1800	T720184504	307.00	184.00			
2000	T720204504	341.00	205.00			

HIGH POWER THYRISTORS CONTINUED ON NEXT PAGE



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HIGH POWER THYRISTORS (CONTINUED)

T920__10 Series (Fig. H)—1000 A; 1510 A rms; 16,000 A surge.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T920011004	160.00	96.50	700	T920071004	270.00	163.00
200	T920021004	170.00	103.00	800	T920081004	300.00	180.00
300	T920031004	180.00	109.00	900	T920091004	330.00	199.00
400	T920041004	200.00	120.00	1000	T920101004	360.00	217.00
500	T920051004	220.00	135.00	1200	T920121004	400.00	240.00
600	T920061004	240.00	145.00				

T920__06 Series (Fig. H)—600 A; 940 A rms; 10,000 A surge.
T920__08 Series (Fig. H)—800 A; 1255 A rms; 12,000 A surge.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	T920010604	140.00	84.50	T920010804	150.00	90.00
200	T920020604	150.00	90.00	T920020804	160.00	96.50
300	T920030604	160.00	96.50	T920030804	170.00	103.00
400	T920040604	170.00	103.00	T920040804	190.00	115.00
500	T920050604	185.00	112.00	T920050804	205.00	129.00
600	T920060604	200.00	120.00	T920060804	220.00	133.00
700	T920070604	220.00	133.00	T920070804	240.00	145.00
800	T920080604	240.00	145.00	T920080804	260.00	157.00
900	T920090604	260.00	157.00	T920090804	280.00	169.00
1000	T920100604	280.00	169.00	T920100804	320.00	193.00
1200	T920120604	300.00	180.00	T920120804	340.00	205.00
1400	T920140604	320.00	193.00	T920140804	360.00	217.00
1600	T920160604	340.00	205.00	T920160804	380.00	229.00
1800	T920180604	380.00	217.00	T920180804	410.00	247.00
2000	T920200604	400.00	240.00	T920200804	409.00	265.00
2200	T920220604	440.00	285.00			
2400	T920240604	500.00	300.00			
2600	T920260604	580.00	349.00			
2800	T920280604	680.00	409.00			
3000	T920300604	800.00	480.00			

HIGH POWER FAST SWITCHING THYRISTORS

T527__0644 Series (Fig. D)—60 A; 95 A rms; 1000 A surge; t_{off} = 40 μs. For t_{off} = 30 μs, specify T527__0654; inquire for pricing.
T527__0664 Series (Fig. D)—Same except t_{off} = 20 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T527010644	$22.75	$13.75	T527010664	$24.00	$14.50
200	T527020644	29.50	17.75	T527020664	28.50	17.25
300	T527030644	30.75	18.50	T527030664	32.00	19.25
400	T527040644	36.50	22.00	T527040664	37.50	22.50
500	T527050644	44.25	26.75	T527050664	45.50	27.25
600	T527060644	50.00	30.00	T527060664	51.50	30.75
700	T527070644	57.00	34.25	T527070664	62.50	37.50
800	T527080644	64.00	38.25	T527080664	74.00	44.25
900	T527090644	74.00	44.25			
1000	T527100644	85.50	51.50			
1200	T527120644	103.00	61.50			

T527__0674 Series (Fig. D)—60 A; 95 A rms; 1000 A surge; t_{off} = 15 μs. For t_{off} = 10 μs, specify T527__0684; same price.
T527__1244 Series (Fig. D)—115 A; 180 A rms; 1200 A surge; t_{off} = 15 μs. For t_{off} = 30 μs, specify T527__1254; inquire for pricing.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T527010674	$25.00	$15.00	T527011244	$25.00	$15.00
200	T527020674	32.00	19.25	T527021244	30.75	18.50
300	T527030674	34.25	20.50	T527031244	33.00	19.75
400	T527040674	41.00	24.50	T527041244	39.75	24.00
500	T527050674	49.00	29.50	T527051244	47.75	28.75
600	T527060674	59.00	35.50	T527061244	56.50	33.75
700	T527070674*	70.50	42.25	T527071244	62.50	37.50
800	T527080674*	82.00	49.00	T527081244	69.50	41.75
900				T527091244	81.00	48.50
1000				T527101244	92.00	55.50
1200				T527121244	108.00	65.00

*t_{off} = 10 μs not available.

HIGH POWER FAST SWITCHING THYRISTORS (CONT'D)

T527__1264 Series (Fig. D)—115 A; 180 A rms; 1200 A surge; t_{off} = 20 μs.
T527__1274 Series (Fig. D)—Same except t_{off} = 15 μs. For t_{off} = 10μs, specify T527__1284; inquire for pricing.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T527011264	$25.00	$15.00	T527011274	$27.75	$16.50
200	T527021264	29.50	17.75	T527021274	32.00	19.25
300	T527031264	34.25	20.50	T527031274	37.50	22.50
400	T527041264	39.75	24.00	T527041274	45.50	27.25
500	T527051264	47.75	28.75	T527051274	57.00	34.25
600	T527061264	57.00	34.25	T527061274	62.00	37.25
700	T527071264	68.50	41.00			
800	T527081264	79.50	47.75			

T527__1344 Series (Fig. D)—125 A; 200 A rms; 1400 A surge; t_{off} = 40 μs. For t_{off} = 30 μs, specify T527__1354; inquire for pricing.
T527__1364 Series (Fig. D)—Same except t_{off} = 20 μs.

100	T527011344	$26.25	$15.75	T527011364	$25.00	$15.00
200	T527021344	32.00	19.25	T527021364	29.50	17.75
300	T527031344	37.50	22.50	T527031364	34.25	20.50
400	T527041344	41.00	24.50	T527041364	39.75	24.00
500	T527051344	50.00	30.00	T527051364	47.75	28.75
600	T527061344	56.50	33.75	T527061364	57.00	34.25
700	T527071344	62.50	37.50			
800	T527081344	69.50	41.75			
900	T527091344	81.00	48.50			
1000	T527101344	92.00	55.50			
1200	T527121344	114.00	68.50			

*Not available in t_{off} = 30 μs.

T527__1374 Series (Fig. D)—125 A; 200 A rms; 1400 A surge; t_{off} = 15 μs. For t_{off} = 10 μs, specify T527__1384; inquire for pricing.
T607__1344 Series (Fig. E)—125 A; 200 A rms; 3500 A surge; t_{off} = 40 μs.

100	T527011374	$28.50	$17.25	T607011344	$44.25	$26.75
200	T527021374	32.00	19.25	T607021344	54.50	32.75
300	T527031374	37.50	22.50	T607031344	61.50	36.75
400	T527041374	43.25	26.00	T607041344	64.00	38.25
500	T527051374	57.00	34.25	T607051344	75.00	45.00
600	T527061374	62.00	37.25	T607061344	91.00	54.50
700				T607071344	103.00	61.50
800				T607081344	114.00	68.50
900				T607091344	125.00	75.00
1000				T607101344	148.00	88.50
1200				T607121344	171.00	103.00

T607__1354 Series (Fig. E)—125 A; 200 A rms; 3500 A surge; t_{off} = 30 μs.
T607__1364 Series (Fig. E)—Same except t_{off} = 20 μs.

100	T607011354	$47.75	$28.75	T607011364	$52.50	$31.50
200	T607021354	58.00	34.75	T607021364	62.50	37.50
300	T607031354	65.00	39.00	T607031364	69.50	41.75
400	T607041354	70.50	42.25	T607041364	76.00	45.75
500	T607051354	82.00	49.00	T607051364	88.50	53.50
600	T607061354	98.00	59.00	T607061364	105.00	63.00
700	T607071354	109.00	65.50	T607071364	116.00	69.50
800	T607081354	121.00	72.50	T607081364	128.00	76.50
900	T607091354	137.00	82.00	T607091364	148.00	88.50
1000	T607101354	159.00	95.50	T607101364	171.00	103.00
1200	T607121354	182.00	109.00			

T607__1374 Series (Fig. E)—125 A; 200 A rms; 3500 A surge; t_{off} = 15 μs.
T607__1544 Series (Fig. E)—150 A; 235 A rms; 4000 A surge; t_{off} = 40 μs.

100	T607011374	$57.00	$34.25	T607011544	$47.75	$28.75
200	T607021374	66.00	39.50	T607021544	59.00	35.50
300	T607031374	73.00	43.75	T607031544	64.00	38.25
400	T607041374	82.00	49.00	T607041544	70.50	42.25
500	T607051374	95.50	57.50	T607051544	82.00	49.00
600	T607061374	112.00	67.00	T607061544	98.00	59.00
700	T607071374	130.00	78.00	T607071544	109.00	65.50
800	T607081374	152.00	91.50	T607081544	121.00	72.50
900				T607091544	137.00	82.00
1000				T607101544	159.00	95.50
1200				T607121544	182.00	109.00

HIGH POWER FAST SWITCHING THYRISTORS
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SEE PRECEDING PAGES FOR ILLUSTRATIONS

HIGH POWER FAST SWITCHING THYRISTORS (CONTINUED)

150 AMP—235 AMP rms

T607__1554 Series (Fig. E)—4000 A surge; t_{off} = 30 μs.
T607__1564 Series (Fig. E)—4000 A surge; t_{off} = 20 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T607011554	$51.50	$30.75	T607011564	$56.00	$33.50
200	T607021554	61.50	36.75	T607021564	66.00	39.50
300	T607031554	68.50	41.00	T607031564	73.00	43.75
400	T607041554	77.50	46.50	T607041564	82.00	49.00
500	T607051554	88.50	53.50	T607051564	95.50	57.50
600	T607061554	105.00	63.00	T607061564	112.00	67.00
700	T607071554	116.00	69.50	T607071564	123.00	73.50
800	T607081554	128.00	76.50	T607081564	134.00	80.50
900	T607091554	148.00	88.50	T607091564	159.00	95.50
1000	T607101554	171.00	103.00	T607101564	182.00	109.00
1200	T607121554	193.00	116.00			

T607__1574 Series (Fig. E)—4000 A surge; t_{off} = 15 μs.
T627__1544 Series (Fig. D)—3500 A surge; t_{off} = 40 μs.

100	T607011574	$66.50	$40.00	T627011544	$39.75	$24.00
200	T607021574	69.50	41.75	T627021544	50.00	30.00
300	T607031574	76.00	45.75	T627031544	54.50	32.75
400	T607041574	88.50	53.50	T627041544	57.00	34.25
500	T607051574	103.00	61.50	T627051544	68.50	41.00
600	T607061574	118.00	71.00	T627061544	82.00	49.00
700	T607071574	137.00	82.00	T627071544	93.00	56.00
800	T607081574	159.00	95.50	T627081544	103.00	61.50
900				T627091544	114.00	68.50
1000				T627101544	134.00	80.50
1200				T627121544	155.00	93.00

T627__1554 Series (Fig. D)—3500 A surge; t_{off} = 30 μs.
T627__1564 Series (Fig. D)—3500 A surge; t_{off} = 20 μs.

100	T627011554	$43.25	$26.00	T627011564	$47.75	$28.75
200	T627021554	52.50	31.50	T627021564	57.00	34.25
300	T627031554	58.50	35.25	T627031564	62.50	37.50
400	T627041554	64.00	38.25	T627041564	68.50	41.00
500	T627051554	73.00	43.75	T627051564	79.50	47.75
600	T627061554	88.50	53.50	T627061564	94.50	56.50
700	T627071554	98.00	59.00	T627071564	105.00	63.00
800	T627081554	109.00	65.50	T627081564	115.00	69.00
900	T627091554	123.00	73.50	T627091564	133.00	80.00
1000	T627101554	143.00	86.00	T627101564	154.00	92.00
1200	T627121554	164.00	98.00			

T627__1574 Series (Fig. D)—3500 A surge; t_{off} = 15 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T627011574	$52.50	$31.50	400	T627041574	$73.00	$43.75
200	T627021574	59.00	35.50	500	T627051574	86.50	52.00
300	T627031574	66.00	39.50	600	T627061574	100.00	60.00

175 AMP—275 AMP rms

T607__1844 Series (Fig. E)—4500 A surge; t_{off} = 40 μs.
T607__1854 Series (Fig. E)—4500 A surge; t_{off} = 30 μs.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	T607011844	$50.00	$30.00	T607011854	$54.50	$32.75
200	T607021844	61.50	36.75	T607021854	65.00	39.00
300	T607031844	68.50	41.00	T607031854	73.00	43.75
400	T607041844	77.50	46.50	T607041854	84.00	50.50
500	T607051844	88.50	53.50	T607051854	95.50	57.50
600	T607061844	105.00	63.00	T607061854	112.00	67.00
700	T607071844	116.00	69.50	T607071854	123.00	73.50
800	T607081844	128.00	76.50	T607081854	134.00	80.50
900	T607091844	148.00	88.50	T607091854	159.00	95.50
1000	T607101844	171.00	103.00	T607101854	182.00	109.00
1200	T607121844	205.00	123.00			

T607__1864 Series (Fig. E)—4500 A surge; t_{off} = 20 μs.
T607__1874 Series (Fig. E)—4500 A surge; t_{off} = 15 μs.

100	T607011864	$58.00	$34.75	T607011874	$62.50	$37.50
200	T607021864	69.50	41.75	T607021874	73.00	43.75
300	T607031864	78.50	47.00	T607031874	79.50	47.75
400	T607041864	88.50	53.50	T607041874	95.50	57.50
500	T607051864	107.00	64.00	T607051874	109.00	65.50
600	T607061864	123.00	73.50	T607061874	125.00	75.00
700	T607071864	134.00	80.50			
800	T607081864	148.00	88.50			

200 AMP—315 AMP rms

T627__2044 Series (Fig. D)—4000 A surge; t_{off} = 40 μs.
T627__2054 Series (Fig. D)—4000 A surge; t_{off} = 30 μs.

100	T627012044	$43.25	$26.00	T627012054	$46.00	$27.75
200	T627022044	52.50	31.50	T627022054	54.50	32.75
300	T627032044	57.00	34.25	T627032054	61.50	36.75
400	T627042044	64.00	38.25	T627042054	70.50	42.25
500	T627052044	73.00	43.75	T627052054	79.50	47.75
600	T627062044	88.50	53.50	T627062054	93.00	56.00
700	T627072044	98.00	59.00	T627072054	105.00	63.00
800	T627082044	109.00	65.50	T627082054	114.00	68.50
900	T627092044	123.00	73.50	T627092054	134.00	80.50
1000	T627102044	143.00	86.00	T627102054	155.00	93.00
1200	T627122044	164.00	98.00	T627122054	175.00	105.00

200 AMP—315 AMP rms (CONTINUED)

T627__2064 Series (Fig. D)—4000 A surge; t_{off} = 20 μs.
T627__2074 Series (Fig. D)—4000 A surge; t_{off} = 15 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T627012064	$ 54.50	$32.75	T627012074	$ 60.00	$36.00
200	T627022064	59.00	35.50	T627022074	62.50	37.50
300	T627032064	64.00	38.25	T627032074	68.50	41.25
400	T627042064	73.00	43.75	T627042074	79.50	47.75
500	T627052064	86.50	52.00	T627052074	93.00	56.00
600	T627062064	100.00	60.00	T627062074	107.00	64.00
700	T627072064	112.00	67.00			
800	T627082064	121.00	72.50			

T707__2044 Series (Fig. F)—4000 A surge; t_{off} = 40 μs.
T707__2054 Series (Fig. F)—4000 A surge; t_{off} = 30 μs.

100	T707012044	$ 98.00	$ 59.00	T707012054	$103.00	$ 61.50
200	T707022044	103.00	61.50	T707022054	107.00	64.00
300	T707032044	109.00	65.50	T707032054	116.00	69.50
400	T707042044	116.00	69.50	T707042054	123.00	73.50
500	T707052044	128.00	76.50	T707052054	134.00	80.50
600	T707062044	146.00	87.50	T707062054	155.00	93.00
700	T707072044	166.00	99.50	T707072054	173.00	104.00
800	T707082044	191.00	115.00	T707082054	198.00	119.00
900	T707092044	202.00	122.00	T707092054	214.00	128.00
1000	T707102044	223.00	134.00	T707102054	234.00	141.00
1200	T707122044	248.00	149.00			

T707__2064 Series (Fig. F)—4000 A surge; t_{off} = 20 μs.
T707__2074 Series (Fig. F)—4000 A surge; t_{off} = 15 μs.

100	T707012064	$107.00	$ 64.00	T707012074	$114.00	$ 68.50
200	T707022064	116.00	69.50	T707022074	123.00	73.50
300	T707032064	125.00	75.00	T707032074	134.00	80.50
400	T707042064	134.00	80.50	T707042074	148.00	88.50
500	T707052064	150.00	90.00	T707052074	164.00	98.00
600	T707062064	173.00	104.00	T707062074	175.00	105.00
700	T707072064	198.00	119.00			
800	T707082064	223.00	134.00			

250 AMP—400 AMP rms

T627__2544 Series (Fig. D)—4500 A surge; t_{off} = 40 μs.
T627__2554 Series (Fig. D)—4500 A surge; t_{off} = 30 μs.

100	T627012544	$ 45.50	$ 27.25	T627012554	$ 50.00	$ 30.00
200	T627022544	54.50	32.75	T627022554	58.50	35.25
300	T627032544	61.50	36.75	T627032554	66.00	39.50
400	T627042544	70.50	42.25	T627042554	75.00	45.00
500	T627052544	79.50	47.75	T627052554	86.50	52.00
600	T627062544	93.00	56.00	T627062554	100.00	60.00
700	T627072544	105.00	63.00	T627072554	112.00	67.00
800	T627082544	114.00	68.50	T627082554	121.00	72.50
900	T627092544	134.00	80.50	T627092554	143.00	86.00
1000	T627102544	155.00	93.00	T627102554	164.00	98.00
1200	T627122544	184.00	111.00			

T627__2564 Series (Fig. D)—4500 A surge; t_{off} = 20 μs.
T627__2574 Series (Fig. D)—4500 A surge; t_{off} = 15 μs.

100	T627012564	$ 52.50	$31.50	T627012574	$ 56.50	$33.75
200	T627022564	62.50	37.50	T627022574	66.00	39.50
300	T627032564	70.50	42.25	T627032574	73.00	43.75
400	T627042564	79.50	47.75	T627042574	86.50	52.00
500	T627052564	95.50	57.50	T627052574	98.00	59.00
600	T627062564	112.00	67.00	T627062574	114.00	68.50
700	T627072564	121.00	72.50			
800	T627082564	134.00	80.50			

T707__2544 Series (Fig. F)—5000 A surge; t_{off} = 40 μs.
T707__2554 Series (Fig. F)—5000 A surge; t_{off} = 30 μs.

100	T707012544	$103.00	$ 61.50	T707012554	$107.00	$ 64.00
200	T707022544	107.00	64.00	T707022554	114.00	68.50
300	T707032544	116.00	69.50	T707032554	121.00	72.50
400	T707042544	123.00	73.50	T707042554	130.00	78.00
500	T707052544	134.00	80.50	T707052554	143.00	86.00
600	T707062544	152.00	91.50	T707062554	159.00	95.50
700	T707072544	173.00	104.00	T707072554	180.00	108.00
800	T707082544	198.00	119.00	T707082554	205.00	123.00
900	T707092544	214.00	128.00	T707092554	225.00	135.00
1000	T707102544	234.00	141.00	T707102554	248.00	149.00
1200	T707122544	259.00	156.00			

T707__2564 Series (Fig. F)—5000 A surge; t_{off} = 20 μs.
T707__2574 Series (Fig. F)—5000 A surge; t_{off} = 15 μs.

100	T707012564	$114.00	$ 68.50	T707012574	$118.00	$ 71.00
200	T707022564	121.00	72.50	T707022574	128.00	76.50
300	T707032564	130.00	78.00	T707032574	141.00	84.50
400	T707042564	143.00	86.00	T707042574	155.00	93.00
500	T707052564	157.00	94.00	T707052574	171.00	103.00
600	T707062564	180.00	108.00	T707062574	189.00	113.00
700	T707072564	205.00	123.00			
800	T707082564	230.00	138.00			

T727__2544 Series (Fig. G)—5500 A surge; t_{off} = 40 μs.
T727__2554 Series (Fig. G)—5500 A surge; t_{off} = 30 μs.

100	T727012544	$ 88.50	$ 53.50	T727012554	$ 93.00	$ 56.00
200	T727022544	93.00	56.00	T727022554	98.00	59.00
300	T727032544	100.00	60.00	T727032554	105.00	63.00
400	T727042544	105.00	63.00	T727042554	112.00	67.00
500	T727052544	116.00	69.50	T727052554	123.00	73.50
600	T727062544	132.00	79.00	T727062554	141.00	84.50
700	T727072544	150.00	90.00	T727072554	157.00	94.00
800	T727082544	173.00	104.00	T727082554	180.00	108.00
900	T727092544	184.00	111.00	T727092554	193.00	116.00
1000	T727102544	202.00	122.00	T727102554	214.00	128.00
1200	T727122544	225.00	135.00			

High Power Fast Switching Thyristors continued on next page.

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HIGH POWER FAST SWITCHING THYRISTORS (Cont'd.)

250 AMP—400 AMP rms (CONTINUED)

T727__2564 Series (Fig. G)—5500 A surge; t_{off} = 20 μs.
T727__2574 Series (Fig. G)—5500 A surge; t_{off} = 15 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T727012564	$ 98.00	$ 59.00	T727012574	$103.00	$ 61.50
200	T727022564	105.00	63.00	T727022574	112.00	67.00
300	T727032564	114.00	68.50	T727032574	123.00	73.50
400	T727042564	123.00	73.50	T727042574	134.00	80.50
500	T727052564	137.00	82.00	T727052574	148.00	88.50
600	T727062564	157.00	94.00	T727062574	159.00	95.50
700	T727072564	180.00	108.00			
800	T727082564	202.00	122.00			

300 AMP—475 A rms

T707__3044 Series (Fig. F)—4000 A surge; t_{off} = 40 μs.
T707__3054 Series (Fig. F)—4000 A surge; t_{off} = 30 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T707013044	$123.00	$ 73.50	T707013054	$139.00	$ 83.50
200	T707023044	128.00	76.50	T707023054	146.00	87.50
300	T707033044	134.00	80.50	T707033054	152.00	91.50
400	T707043044	146.00	87.50	T707043054	164.00	98.00
500	T707053044	157.00	94.00	T707053054	175.00	105.00
600	T707063044	180.00	108.00	T707063054	200.00	120.00
700	T707073044	205.00	123.00	T707073054	225.00	135.00
800	T707083044	230.00	138.00	T707083054	255.00	153.00
900	T707093044	255.00	153.00			
1000	T707103044	280.00	168.00			
1200	T707123044	325.00	195.00			

T707__3064 Series (Fig. F)—4000 A surge; t_{off} = 20 μs.
T707__3074 Series (Fig. F)—4000 A surge; t_{off} = 15 μs.

100	T707013064	$148.00	$ 88.50	T707013074	$152.00	$ 91.50
200	T707023064	157.00	94.00	T707023074	164.00	98.00
300	T707033064	168.00	101.00	T707033074	173.00	104.00
400	T707043064	174.00	105.00	T707043074	182.00	109.00
500	T707053064	182.00	109.00	T707053074	191.00	115.00
600	T707063064	214.00	128.00	T707063074	221.00	133.00

350 AMP—550 AMP rms

T727__3544 Series (Fig. G)—5500 A surge; t_{off} = 40 μs.
T727__3554 Series (Fig. G)—5500 A surge; t_{off} = 30 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T727013544	$ 93.00	$ 56.00	T727013554	$ 98.00	$ 59.00
200	T727023544	98.00	59.00	T727023554	103.00	61.50
300	T727033544	105.00	63.00	T727033554	109.00	65.50
400	T727043544	112.00	67.00	T727043554	118.00	71.00
500	T727053544	123.00	73.50	T727053554	130.00	78.00
600	T727063544	139.00	83.50	T727063554	146.00	87.50
700	T727073544	157.00	94.00	T727073554	164.00	98.00
800	T727083544	180.00	108.00	T727083554	187.00	112.00
900	T727093544	193.00	116.00	T727093554	205.00	123.00
1000	T727103544	214.00	128.00	T727103554	225.00	135.00
1200	T727123544	236.00	142.00			

T727__3564 Series (Fig. G)—5500 A surge; t_{off} = 20 μs.
T727__3574 Series (Fig. G)—5500 A surge; t_{off} = 15 μs.

100	T727013564	$103.00	$ 61.50	T727013574	$107.00	$ 64.00
200	T727023564	109.00	65.50	T727023574	116.00	69.50
300	T727033564	118.00	71.00	T727033574	128.00	76.50
400	T727043564	130.00	78.00	T727043574	141.00	84.50
500	T727053564	143.00	86.00	T727053574	155.00	93.00
600	T727063564	164.00	98.00	T727063574	171.00	103.00
700	T727073564	187.00	112.00			
800	T727083564	209.00	126.00			

450 AMP—700 AMP rms

T727__4544 Series (Fig. G)—8000 A surge; t_{off} = 40 μs.
T727__4554 Series (Fig. G)—8000 A surge; t_{off} = 30 μs.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	T727014544	$112.00	$ 67.00	T727014554	$125.00	$ 75.00
200	T727024544	116.00	69.50	T727024554	132.00	79.00
300	T727034544	123.00	73.50	T727034554	139.00	83.50
400	T727044544	132.00	79.00	T727044554	148.00	88.50
500	T727054544	143.00	86.00	T727054554	159.00	95.50
600	T727064544	164.00	98.00	T727064554	182.00	109.00
700	T727074544	187.00	112.00	T727074554	205.00	123.00
800	T727084544	209.00	126.00	T727084554	232.00	139.00
900	T727094544	232.00	139.00			
1000	T727104544	255.00	153.00			

T727__4564 Series (Fig. G)—8000 A surge; t_{off} = 20 μs.
T727__4574 Series (Fig. G)—8000 A surge; t_{off} = 15 μs.

100	T727014564	$134.00	$ 80.50	T727014574	$139.00	$ 83.50
200	T727024564	143.00	86.00	T727024574	148.00	88.50
300	T727034564	152.00	91.50	T727034574	157.00	94.00
400	T727044564	158.00	95.00	T727044574	165.00	99.00
500	T727054564	166.00	99.50	T727054574	173.00	104.00
600	T727064564	193.00	116.00	T727064574	200.00	120.00

SILICON FAST RECOVERY RECTIFIERS

1N3879, R–R3020606 (Fig. J)—6 A at Tc = 100° C; 75 A surge; t_{rr} = 200 ns.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 500-999
50				300	1N3881, R	$4.65	$3.10
100	1N3879, R	$3.25	$2.15	400	1N3882, R	5.70	3.75
150	1N3880, R	3.70	2.50	500			
200				600			

*For reverse polarity, increase third digit by **1** (R3030606).

1N3889, R–R3020612 (Fig. J)—12 A at Tc = 100° C; 150 A surge; t_{rr} = 200 ns.

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
50	1N3889, R	$4.05†	$2.70#	300	1N3892, R	$7.30	$4.82
100	1N3890, R	4.65	3.10	400	1N3893, R	8.60	5.70
200	1N3891, R	6.00	3.96	600			

*For reverse polarity, increase third digit by **1** (R3030612).
†Quantity 1–99. #Quantity 100–999.

1N3899, R–R4020620 (Fig. K)—20 A at Tc = 100° C; 225 A surge; t_{rr} = 200 ns.
1N3909, R–1N3913, R (Fig. K)—35 A at Tc = 100° C; 300 A surge; t_{rr} = 200 ns.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
50	1N3899, R	$ 5.70	$3.75	1N3909, R	$ 6.50	$4.30
100	1N3900, R	6.60	4.40	1N3910, R	7.60	5.10
200	1N3901, R	8.60	5.70	1N3911, R	9.80	6.60
300	1N3902, R	10.50	7.00	1N3912, R	12.25	8.10
400	1N3903, R	12.50	8.30	1N3913, R	14.50	9.60

*For reverse polarity, increase third digit by **1** (R4030620).
Following types t_{rr} = 1.5 μs (**FJ**); t_{rr} = 2 μs (**EJ**); t_{rr} = 3μs (**CJ**).

80 AMP SERIES (FIG. L)

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	R5020108FJ*	$19.00†	$12.00#	R5020108EJ*	$17.75‡	$11.25#
200	R5020208FJ*	21.25†	13.00#	R5020208EJ*	20.25†	12.00#
300	R5020308FJ*	22.50†	13.75#	R5020308EJ*	21.25†	13.00#
400	R5020408FJ*	23.00	14.25	R5020408EJ*	22.00	13.75
500	R5020508FJ*	26.00	15.50	R5020508EJ*	24.75	14.25
600	R5020608FJ*	28.25	16.50	R5020608EJ*	26.00	15.50
700	R5020708FJ*	32.00	19.00	R5020708EJ*	29.50	17.75
800	R5020808FJ*	34.75	20.25	R5020808EJ*	33.00	19.00
900	R5020908FJ*	37.75	22.50	R5020908EJ*	35.50	21.25
1000	R5021008FJ*	41.25	24.75	R5021008EJ*	39.00	23.75
1200	R5021208FJ*	47.25	28.25	R5021208EJ*	44.75	27.25

100 AMP SERIES (FIG. L)

100	R5020110FJ*	$20.00†	$12.00#	R5020110EJ*	$19.00†	$12.00#
200	R5020210FJ*	22.50‡	13.50#	R5020210EJ*	21.25†	13.00#
300	R5020310FJ*	23.75†	14.25#	R5020310EJ*	22.50†	13.75#
400	R5020410FJ*	24.25	14.50	R5020410EJ*	23.00	14.25
500	R5020510FJ*	27.00	16.25	R5020510EJ*	26.00	15.50
600	R5020610FJ*	30.00	18.00	R5020610EJ*	28.25	16.50
700	R5020710FJ*	33.75	20.25	R5020710EJ*	32.00	19.00
800	R5020810FJ*	36.75	22.25	R5020810EJ*	34.75	20.25
900	R5020910FJ*	40.25	24.25	R5020910EJ*	37.75	22.50
1000	R5021010FJ*	43.75	26.25	R5021010EJ*	41.25	24.75
1200	R5021210FJ*	49.75	30.00	R5021210EJ*	47.25	28.25

200 AMP SERIES (FIG. M)

100	R6020120FJ*	$25.25	$15.25	R6020120EJ*	$ 22.75	$14.25
200	R6020220FJ*	28.00	17.00	R6020220EJ*	24.75	15.00
300	R6020320FJ*	31.25	18.75	R6020320EJ*	28.00	16.25
400	R6020420FJ*	34.25	20.75	R6020420EJ*	31.25	18.25
500	R6020520FJ*	37.50	22.50	R6020520EJ*	34.25	21.50
600	R6020620FJ*	40.75	24.75	R6020620EJ*	38.75	23.75
700	R6020720FJ*	44.00	26.50	R6020720EJ*	40.75	24.75
800	R6020820FJ*	47.25	28.50	R6020820EJ*	45.00	26.75
900	R6020920FJ*	50.50	30.25	R6020920EJ*	49.25	30.00
1000	R6021020FJ*	55.00	33.25	R6021020EJ*	53.50	32.25
1200	R6021220FJ*	64.50	38.75	R6021220EJ*	62.50	37.50
1400				R6021420EJ*	92.50	56.00
1600				R6021620EJ*	113.00	67.50

250 AMP SERIES (FIG. M)

Rated 250 A at Tc = 110° C.

100	R6020125FJ*	$27.75	$16.75	R6020125EJ*	$ 25.25	$15.25
200	R6020225FJ*	30.75	18.75	R6020225EJ*	28.00	17.00
300	R6020325FJ*	34.25	20.75	R6020325EJ*	31.25	18.75
400	R6020425FJ*	37.75	22.75	R6020425EJ*	34.25	20.75
500	R6020525FJ*	41.25	24.75	R6020525EJ*	37.50	22.50
600	R6020625FJ*	44.75	27.25	R6020625EJ*	40.75	24.75
700	R6020725FJ*	48.75	29.25	R6020725EJ*	44.00	26.50
800	R6020825FJ*	51.50	30.75	R6020825EJ*	47.25	28.50
900	R6020925FJ*	55.50	33.50	R6020925EJ*	50.50	30.25
1000	R6021025FJ*	59.00	35.50	R6021025EJ*	53.50	32.25
1200	R6021225FJ*	71.00	42.50	R6021225EJ*	64.50	38.75
1400				R6021425EJ*	103.00	62.50
1600				R6021625EJ*	126.00	75.00

*For reverse polarity, increase third digit by **1** (R6030125FJ).
†Quantity 1–99. #Quantity 100–999.

Silicon Fast Recovery Rectifiers continued on next page.

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SILICON FAST RECOVERY RECTIFIERS (Cont'd.)

Following types t_{rr} = 1.5 μs (FJ); t_{rr} = 2 μs (EJ); t_{rr} = 3 μs (CJ).

350 AMP SERIES (FIG. O)

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	R6220135FJ	$21.50	$12.75	R6220135EJ	$19.50	$12.00
200	R6220235FJ	23.75	14.25	R6220235EJ	21.50	13.00
300	R6220335FJ	26.50	16.00	R6220335EJ	24.75	15.00
400	R6220435FJ	28.75	17.25	R6220435EJ	25.75	16.00
500	R6220535FJ	32.25	19.25	R6220535EJ	29.00	17.25
600	R6220635FJ	34.00	20.50	R6220635EJ	31.25	18.75
700	R6220735FJ	36.50	22.00	R6220735EJ	33.25	20.25
800	R6220835FJ	39.25	23.75	R6220835EJ	35.50	21.50
900	R6220935FJ	43.00	25.50	R6220935EJ	38.75	23.75
1000	R6221035FJ	45.75	27.50	R6221035EJ	41.75	25.00
1200	R6221235FJ	77.50	46.75	R6221235EJ	51.50	31.25
1400	.....	.....	.....	R6221435EJ	71.00	43.00
1600	.....	.....	.....	R6221635EJ	98.50	59.00

400 AMP SERIES (FIG. O)

100	R6220140FJ	$23.75	$14.25	R6220140EJ	$ 21.50	$13.00
200	R6220240FJ	26.00	15.75	R6220240EJ	23.75	14.25
300	R6220340FJ	29.50	17.75	R6220340EJ	26.75	16.25
400	R6220440FJ	32.00	19.25	R6220440EJ	29.00	17.50
500	R6220540FJ	35.50	21.25	R6220540EJ	32.25	19.50
600	R6220640FJ	37.75	22.75	R6220640EJ	34.25	20.75
700	R6220740FJ	40.75	24.50	R6220740EJ	37.00	22.25
800	R6220840FJ	43.75	26.25	R6220840EJ	39.75	24.00
900	R6220940FJ	47.25	28.25	R6220940EJ	43.00	25.75
1000	R6221040FJ	51.00	30.50	R6221040EJ	46.25	27.75
1200	R6221240FJ	62.50	37.75	R6221240EJ	57.00	34.25
1400	.....	.....	.....	R6221440EJ	78.50	47.25
1600	.....	.....	.....	R6221640EJ	110.00	65.50

600 AMP SERIES (FIG. P)

100	.....	.....	.....	R7220106EJ	$ 79.50	$47.25
200	.....	.....	.....	R7220206EJ	93.00	55.50
300	.....	.....	.....	R7220306EJ	97.00	58.00
400	.....	.....	.....	R7220406EJ	101.00	60.50
500	.....	.....	.....	R7220506EJ	105.00	64.00
600	.....	.....	.....	R7220606EJ	106.00	64.00
700	.....	.....	.....	R7220706EJ	116.00	69.50
800	.....	.....	.....	R7220806EJ	125.00	75.50
900	.....	.....	.....	R7220906EJ	135.00	80.50
1000	.....	.....	.....	R7221006EJ	145.00	86.00
1200	.....	.....	.....	R7221206EJ	165.00	99.00

800 AMP SERIES (FIG. P)

100	.....	.....	.....	R7220108EJ	$ 89.50	$53.00
200	.....	.....	.....	R7220208EJ	93.00	55.50
300	.....	.....	.....	R7220308EJ	97.00	58.00
400	.....	.....	.....	R7220408EJ	101.00	60.50
500	.....	.....	.....	R7220508EJ	105.00	64.00
600	.....	.....	.....	R7220608EJ	112.00	67.50
700	.....	.....	.....	R7220708EJ	122.00	73.00
800	.....	.....	.....	R7220808EJ	132.00	79.00
900	.....	.....	.....	R7220908EJ	142.00	85.00
1000	.....	.....	.....	R7221008EJ	152.00	91.00
1200	.....	.....	.....	R7221208EJ	174.00	104.00

*For reverse polarity, increase third digit by 1 (R7030103FJ).
‡Types t_{off} = 2 μs (EJ) t_{off} = 3 μs (CJ); t_{off} = 5 μs (AJ)

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SILICON HIGH POWER RECTIFIERS

1N3288A, R–1N3297A, R (Fig. L)—100 A at 130° C; 2300 A surge.
1N4587, R–1N4596, R (Fig. L)—150 A at 110° C; 3000 A surge.
JAN1N3289, JAN1N3291, JAN1N3293, JAN1N3294, JAN1N3295 and reverse polarities are also available; prices on request.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
100	1N3288A, R	$15.50	$ 9.20	1N4587, R	$17.25	$10.25
200	1N3289A, R	17.25	10.25	1N4588, R	19.00	11.50
300	1N3290A, R	18.25	11.00	1N4589, R	20.25	12.25
400	1N3291A, R	19.50	11.75	1N4590, R	21.50	13.00
500	1N3292A, R	20.75	12.50	1N4591, R	23.00	13.75
600	1N3293A, R	22.00	13.25	1N4592, R	25.50	15.25
800	1N3294A, R	24.75	15.00	1N4593, R	29.50	17.75
1000	1N3295A, R	27.25	16.25	1N4594, R	33.00	20.00
1200	1N3296A, R	29.50	17.75	1N4595, R	35.50	21.25
1400	1N3297A, R	35.50	21.25	1N4596, R	45.50	27.25

1N3260, R–1N3276, R (Fig. M)—160 A at 125° C; 2000 A surge.
R600__20 Series (Fig. M)—200 A; 5500 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
50	1N3260, R	$17.75	$10.75	.....	.....	.....
100	1N3261, R	18.25	11.00	R6100120†	$18.25	$11.00
150	1N3262, R	19.50	11.75	.....	.....	.....
200	1N3263, R	20.25	12.25	R6100220†	20.25	12.25
250	1N3264, R	21.25	12.75	.....	.....	.....
300	1N3265, R	22.50	13.50	R6100320†	22.50	13.50
350	1N3266, R	24.25	14.50	.....	.....	.....
400	1N3267, R	25.50	15.25	R6100420†	25.50	15.25
500	1N3268, R	27.25	16.25	R6100520	27.25	16.75
600	1N3269, R	29.50	17.75	R6100620	29.50	17.75
700	1N3270, R	32.00	19.25	R6100720	32.00	19.50
800	1N3271, R	33.75	20.25	R6100820	33.75	20.25
900	1N3272, R	36.50	22.00	R6101020	39.00	23.50
1000	1N3273, R	39.00	23.75	.....	.....	.....
1200	1N3274, R	47.25	28.25	R6001220†	47.25	28.25
1400	1N3275, R	55.50	33.25	R6001420†	55.50	33.25
1600	1N3276, R	64.00	38.25	R6001620†	64.00	38.25
1800	.....	.....	.....	R6001820†	75.50	45.25
2000	.....	.....	.....	R6002020†	87.50	52.50
2200	.....	.....	.....	R6002220†	103.00	61.50
2400	.....	.....	.....	R6002420†	118.00	71.00

†For reverse polarity, increase fourth digit by 1 (R6010120).

1N3161, R–1N3174, R (Fig. M)—240 A at 125° C; 3000 A surge.
1N3735, R–1N3744, R (Fig. M)—250 A at 130° C; 4500 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99	W-H Type	Net Ea., Lots of 1-9	Net Ea., Lots of 10-99
50	1N3161, R	$20.25	$12.25	.....	.....	.....
100	1N3162, R	20.75	12.50	1N3735, R	$21.25	$12.75
150	1N3163, R	22.00	13.25	.....	.....	.....
200	1N3164*, R	23.00	14.00	1N3736, R	23.75	14.25
250	1N3165, R	24.25	14.50	.....	.....	.....
300	1N3166, R	26.00	16.00	1N3737, R	26.50	16.00
350	1N3167, R	27.75	16.75	.....	.....	.....
400	1N3168*, R	29.00	17.50	1N3738, R	29.50	17.75
500	1N3169, R	30.75	18.50	1N3739, R	32.00	19.50
600	1N3170*, R	33.00	20.00	1N3740, R	34.25	20.50
700	1N3171, R	35.50	21.25	.....	.....	.....
800	1N3172*, R	39.00	23.50	1N3741, R	39.50	23.75
900	1N3173, R	41.25	24.75	.....	.....	.....
1000	1N3174*, R	43.75	26.25	1N3742, R	44.75	27.00
1200	.....	.....	.....	1N3743, R	49.50	29.75
1400	.....	.....	.....	1N3744, R	58.00	34.75

*JAN type available in forward and reverse polarities.

1N2054, R–1N2068, R (Fig. M)—250 A at 135° C; 4500 A surge.
R600__25 Series (Fig. M)—250 A; 6000 A surge.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
50	1N2054, R	$20.75	$12.50	.....	.....	.....
100	1N2055, R	21.25	12.75	R6100125*	$ 20.75	$12.50
150	1N2056, R	22.50	13.50	.....	.....	.....
200	1N2057, R	23.75	14.25	R6100225*	23.00	14.00
250	1N2058, R	24.75	15.00	.....	.....	.....
300	1N2059, R	26.50	16.00	R6100325*	26.00	16.00
350	1N2060, R	28.25	17.00	.....	.....	.....
400	1N2061, R	29.50	17.75	R6100425*	29.00	17.50
450	1N2062, R	30.75	18.50	.....	.....	.....
500	1N2063, R	32.00	19.50	R6100525	30.75	18.50
600	1N2064, R	34.25	20.50	R6100625	33.00	20.00
700	1N2065, R	36.50	22.00	R6100725	35.50	21.25
800	1N2066, R	39.50	23.75	R6100825	39.00	23.50
900	1N2067, R	42.50	25.50	R6100925	41.25	24.75
1000	1N2068, R	44.75	27.00	R6101025	43.75	26.25
1200	.....	.....	.....	R6001225*	52.00	31.25
1400	.....	.....	.....	R6001425*	65.00	39.00
1600	.....	.....	.....	R6001625*	85.00	51.00
1800	.....	.....	.....	R6001825*	104.00	62.50
2000	.....	.....	.....	R6002025*	121.00	72.50
2200	.....	.....	.....	R6002225*	142.00	85.00
2400	.....	.....	.....	R6002425*	165.00	99.00

*For reverse polarity, increase fourth digit by 1 (R6010125).

SILICON HIGH POWER RECTIFIERS
CONTINUED ON NEXT PAGE

SEE PRECEDING PAGES FOR ILLUSTRATIONS

SILICON HIGH POWER RECTIFIERS (CONTINUED)

1N4044, R–1N4056, R (Fig. M)—275 A at 125° C; 5000 A surge.
R600__30 Series (Fig. M)—300 A at 120° C; 6500 A surge.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
50	1N4044, R	$21.25	$12.75			
100	1N4045, R	22.50	13.50	R6100130	$23.75	$14.25
150	1N4046, R	23.75	14.25			
200	1N4047, R	24.75	15.00	R6100230	26.50	16.00
250	1N4048, R	26.50	16.00			
300	1N4049, R	27.75	16.75	R6100330	29.50	17.75
400	1N4050, R	31.25	18.75	R6100430	33.00	20.00
500	1N4051, R	33.75	20.25	R6100530	37.75	22.75
600	1N4052, R	36.00	22.00	R6100630	43.00	26.00
700	1N4053, R	39.00	23.50	R6100730	44.25	26.50
800	1N4054, R	41.25	24.75	R6100830	47.25	28.25
900	1N4055, R	44.75	27.00	R6100930	49.50	29.75
1000	1N4056, R	47.25	28.25	R6101030	53.00	32.00
1200				R6001230*	58.00	34.75

*For reverse polarity, increase fourth digit by **1** (R6010130).

R620__30 Series (Fig. O), R700__03 Series (Fig. N)—300 A.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	R6200130	$15.50	$ 9.70	R7000103*	$ 47.25	$ 28.25
200	R6200230	17.75	10.50	R7000203*	47.25	28.25
300	R6200330	20.25	12.00	R7000303*	47.25	28.25
400	R6200430	22.50	13.75	R7000403*	47.25	28.25
500	R6200530	24.75	15.50	R7000503*	55.50	33.00
600	R6200630	27.25	16.50	R7000603*	59.00	35.50
700	R6200730	29.30	17.75	R7000703*	62.50	37.75
800	R6200830	32.00	19.00	R7000803*	66.00	40.25
900	R6200930	34.25	20.75	R7000903*	75.50	44.75
1000	R6201030	36.50	22.50	R7001003*	85.00	51.00
1200	R6201230	40.25	23.75	R7001203*	93.00	55.50
1400	R6201430	52.00	30.75	R7001403*	103.00	61.50
1600	R6201630	64.00	38.25	R7001603*	118.00	71.00
1800	R6201830	75.50	45.25	R7001803*	139.00	84.00
2000	R6202030	87.50	52.50	R7002003*	165.00	99.00
2200				R7002203*	210.00	126.00
2400				R7002403*	226.00	136.00
2600				R7002603*	255.00	154.00
2800				R7002803*	272.00	164.00
3000				R7003003*	288.00	172.00

*For reverse polarity, increase fourth digit by **1** (R7010103).

R700__04 Series (Fig. N)—400 A. For reverse polarity, increase fourth digit by **1** (R701__04).

PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99	PRV V	W-H Type	Net Ea., Lots 1-9	Net Ea., Lots 10-99
100	R7000104	$47.25	$28.25	900	R7000904	$79.00	$47.25
200	R7000204	49.50	29.50	1000	R7001004	88.50	53.00
300	R7000304	52.00	30.75	1200	R7001204	101.00	60.50
400	R7000404	55.50	33.00	1400	R7001404	118.00	71.00
500	R7000504	59.00	35.50	1600	R7001604	132.00	79.00
600	R7000604	62.50	37.75	1800	R7001804	151.00	91.00
700	R7000704	66.00	40.25	2000	R7002004	175.00	105.00
800	R7000804	69.50	41.25				

R620__50 Series (Fig. O)—500 A at 125° C; 6000 A surge.
R700__05 Series (Fig. N)—500 A. For reverse polarity, increase fourth digit by **1** (R701__05).

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	R6200150	$19.00	$10.75	R7000105	$ 47.25	$28.25
200	R6200250	21.25	13.00	R7000205	53.00	32.00
300	R6200350	23.75	14.25	R7000305	54.50	33.00
400	R6200450	26.00	15.50	R7000405	59.00	35.50
500	R6200550	28.25	16.50	R7000505	62.50	37.75
600	R6200650	30.75	19.00	R7000605	66.00	40.25
700	R6200750	33.00	20.25	R7000705	69.50	41.25
800	R6200850	25.50	21.25	R7000805	73.00	43.75
900	R6200950	37.75	22.50	R7000905	82.50	49.50
1000	R6201050	42.50	26.00	R7001005	92.00	55.50
1200	R6201250	47.25	28.25	R7001205	104.00	62.50

R720__05 Series (Fig. P)—500 A; 6000 A surge.
R720__08 Series (Fig. P)—800 A; 8500 A surge.

100	R7200106	$ 47.25	$ 28.25	R7200109	$ 47.25	$ 28.25
200	R7200206	47.25	28.25	R7200209	49.50	29.50
300	R7200306	47.25	28.25	R7200309	52.00	30.75
400	R7200406	47.25	28.25	R7200409	55.50	33.00
500	R7200506	55.50	33.00	R7200509	59.00	35.50
600	R7200606	59.00	35.50	R7200609	62.50	37.75
700	R7200706	62.50	37.75	R7200709	66.00	40.25
800	R7200806	66.00	40.25	R7200809	69.50	41.25
900	R7200906	75.50	44.75	R7200909	79.00	47.25
1000	R7201006	85.00	51.00	R7201009	88.50	53.00
1200	R7201206	93.00	55.50	R7201209	101.00	60.50
1400	R7201406	103.00	61.50	R7201409	118.00	71.00
1600	R7201606	118.00	71.00	R7201609	132.00	79.00
1800	R7201806	139.00	84.00	R7201809	151.00	91.00
2000	R7202006	165.00	99.00	R7202009	175.00	105.00
2200	R7202206	210.00	126.00			
2400	R7202406	226.00	136.00			
2600	R7202606	255.00	154.00			
2800	R7202806	272.00	164.00			
3000	R7203006	288.00	172.00			

R720__10 Series (Fig. P)—1000 A; 10,000 A surge.
R920__11 Series (Fig. R)—1100 A avg. at 115° C.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	R7200112	$ 47.25	$28.25	R9200111	$104.00	$ 62.00
200	R7200212	53.00	32.00	R9200211	112.00	67.00
300	R7200312	54.50	33.00	R9200311	120.00	72.00
400	R7200412	59.00	35.50	R9200411	128.00	77.00
500	R7200512	62.50	37.75	R9200511	136.00	82.00
600	R7200612	66.00	40.25	R9200611	146.00	87.00
700	R7200712	69.50	41.25	R9200711	163.00	98.00
800	R7200812	73.00	43.75	R9200811	178.00	107.00
900	R7200912	82.50	49.50	R9200911	194.00	117.00
1000	R7201012	92.00	55.50	R9201011	209.00	126.00
1200	R7201212	104.00	62.50	R9201211	228.00	137.00
1400				R9201411	240.00	144.00
1600				R9201611	250.00	150.00
1800				R9201811	270.00	162.00
2000				R9202011	290.00	174.00
2200				R9202211	330.00	190.00
2400				R9202411	370.00	220.00
2600				R9202611	410.00	246.00
2800				R9202811	450.00	270.00
3000				R9203011	490.00	294.00

R920__16 Series (Fig. R)—1600 A avg. at 110° C.
R920__20 Series (Fig. R)—2000 A avg. at 95° C.

PRV V	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99	W-H Type	Net Each, Lots 1-9	Net Each, Lots 10-99
100	R9200116	$115.00	$ 69.00	R9200120	$120.00	$ 72.00
200	R9200216	123.00	74.00	R9200220	150.00	90.00
300	R9200316	131.00	79.00	R9200320	175.00	105.00
400	R9200416	140.00	84.00	R9200420	185.00	111.00
500	R9200516	150.00	90.00	R9200520	200.00	120.00
600	R9200616	162.00	97.50	R9200620	210.00	126.00
700	R9200716	172.00	103.00	R9200720	220.00	132.00
800	R9200816	182.00	109.00	R9200820	240.00	144.00
900	R9200916	192.00	115.00	R9200920	260.00	156.00
1000	R9201016	210.00	126.00	R9201020	280.00	168.00
1200	R9201216	230.00	138.00	R9201220	300.00	180.00
1400	R9201416	260.00	156.00			
1600	R9201616	280.00	168.00			
1800	R9201816	300.00	180.00			
2000	R9202016	320.00	192.00			

SILICON MEDIUM POWER RECTIFIERS

Suffix **R** indicates reverse polarity types available; same price.

1N1612, R–1N4459, R (Fig. J)—5 A at 150° C; 150 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1612, R	$1.30	$0.85	600	1N1616, R	$ 6.40	$4.25
100	1N1613, R	1.50	.97	800	1N4458, R	10.75	7.10
200	1N1614, R	2.25	1.50	1000	1N4459, R	12.00	8.00
400	1N1615, R	4.40	2.92				

1N1341A, R–1N3990, R (Fig. J)—6 A at 150° C; 150 A surge.

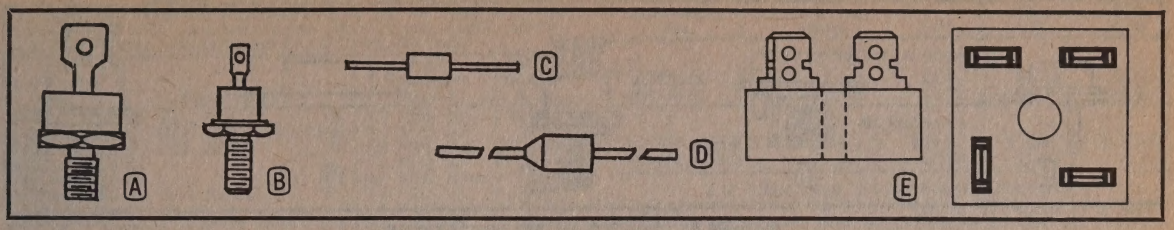
PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1341A, R	$1.35	$0.89	500	1N1347A, R	$ 5.50	$3.65
100	1N1342A, R	1.55	1.05	600	1N1348A, R	6.50	4.30
150	1N1343A, R	1.93	1.30	700	1N3987, R	9.10	6.10
200	1N1344A, R	2.55	1.70	800	1N3988, R	10.25	6.80
300	1N1345A, R	3.60	2.40	900	1N3989, R	11.00	7.30
400	1N1346A, R	4.70	3.10	1000	1N3990, R	11.50	7.70

1N1341B, R–1N1348B, R (Fig. J)—6 A at 150° C; 160 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1341B, R	$1.45	$0.94	300	1N1345B, R	$3.80	$2.55
100	1N1342B, R	1.60	1.10	400	1N1346B, R	4.94	3.30
150	1N1343B, R	2.25	1.60	500	1N1347B, R	5.90	3.95
200	1N1344B, R	2.65	1.80	600	1N1348B, R	7.20	4.80

1N1199A, R–1N3673A, R (Fig. J)—12 A at 150° C; 240 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1199A, R	$1.50	$0.97	500	1N1205A, R	$ 6.30	$4.20
100	1N1200A, R	1.70	1.10	600	1N1206A, R	7.30	4.86
150	1N1201A, R	2.15	1.45	700	1N3670A, R	9.30	6.20
200	1N1202A, R	2.92	1.95	800	1N3671A, R	10.50	6.90
300	1N1203A, R	4.10	2.75	900	1N3672A, R	11.25	7.50
400	1N1204A, R	5.30	3.50	1000	1N3673A, R	11.75	7.80



SILICON MEDIUM POWER RECTIFIERS (CONTINUED)

Suffix **R** indicates reverse polarity types available; same price.

1N1199B, R–1N1206B, R (Fig. B)—12 A at 150° C; 240 A surge.
R310__15 Series (Fig. B)—15 A at 125° C; 240 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1199B, R	$1.55	$1.10	R3100015	$1.50	$0.97
100	1N1200B, R	1.80	1.20	R3100115	1.70	1.10
150	1N1201B, R	2.25	1.55	R3100215	2.92	1.95
200	1N1202B, R	3.10	2.00	R3100315	4.10	2.75
300	1N1203B, R	4.25	2.82	R3100415	5.30	3.50
400	1N1204B, R	5.80	3.88	R3100515	6.30	4.20
500	1N1205B, R	6.90	4.60	R3100615	7.30	4.86
600	1N1206B, R	8.00	5.40			

1N3208–1N3214 (Fig. A)—15 A at 150° C; 250 A surge.
1N3615, R–1N3624, R (Fig. B)—16 A at 150° C; 300 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
50	1N3208	$2.05	$1.40	1N3615, R	$ 1.65	$ 1.10
100	1N3209	2.10	1.40	1N3616, R	1.81	1.26
150				1N3617, R	2.35	1.65
200	1N3210	2.15	1.45	1N3618, R	3.60	2.40
300	1N3211	2.94	1.88	1N3619, R	5.20	3.60
400	1N3212	3.45	2.30	1N3620, R	6.50	4.30
500	1N3213	4.15	2.80	1N3621, R	7.50	4.86
600	1N3214	4.94	3.30	1N3622, R	9.10	5.90
800				1N3623, R	12.50	9.10
1000				1N3624, R	17.50	13.00

1N248A, R–1N250C, R (Fig. A)—20 A at 150° C; 350 A surge.
1N1191A, R–R4100822 (Fig. A)—22 A at 150° C; 500 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N1191A, R	$ 1.95	$1.30	50	1N248A, R	$1.95	$1.30
100	1N1192A, R	2.05	1.40	50	1N248B, R	1.95	1.30
150	1N1193A, R	2.50	1.65	50	1N248C, R	1.95	1.30
200	1N1194A, R	2.92	1.95	100	1N249A, R	2.05	1.40
300	1N1195A, R	4.60	3.05	100	1N249B, R	2.05	1.40
400	1N1196A, R	5.80	3.88	100	1N249C, R	2.40	1.60
500	1N1197A, R	7.30	4.70	200	1N250A, R	2.86	1.95
600	1N1198A, R	7.90	5.30	200	1N250B, R	2.86	1.95
800	R4100822*	9.50	6.80	200	1N250C, R	3.30	2.20
1000	R4101022*	12.25	7.80				

*For reverse polarity, increase fourth digit by 1 (R4110822).

1N2154, R–1N2160, R (Fig. B)—25 A at 145° C; 300 A surge.

PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999	PRV V	W-H Type	Net Ea., Lots 1-99	Net Ea., Lots 100-999
50	1N2154, R	$2.80	$1.87	400	1N2158, R	$7.00	$4.65
100	1N2155, R	3.55	2.35	500	1N2159, R	7.30	4.83
200	1N2156, R	5.20	3.50	600	1N2160, R	7.50	4.94
300	1N2157, R	6.20	4.15				

1N1183, R–1N3768, R (Fig. B)—35 A at 140° C; 500 A surge.

50	1N1183, R	$2.55	$1.70	500	1N1189, R	$ 8.80	$5.90
100	1N1184, R	2.91	1.95	600	1N1190, R	10.25	6.90
150	1N1185, R	3.65	2.45	700	1N3765, R	10.75	7.30
200	1N1186, R	4.20	2.80	800	1N3766, R	11.50	7.70
300	1N1187, R	5.90	3.88	900	1N3767, R	12.75	8.50
400	1N1188, R	7.30	4.86	1000	1N3768, R	13.75	9.10

1N1183A, R–R4101040 (Fig. B)—40 A at 150° C; 800 A surge.
1N4001–1N4007 (Fig. C)—Epoxy encapsulated; 1.0 A at 75° C ambient; 30 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
50	1N1183A, R	$ 2.55	$1.70	1N4001	$0.32	$0.25
100	1N1184A, R	2.91	1.95	1N4002	.36	.27
150	1N1185A, R	3.65	2.45			
200	1N1186A, R	4.20	2.80	1N4003	.43	.34
300	1N1187A, R	5.90	3.88			
400	1N1188A, R	7.30	4.86	1N4004	.51	.41
500	1N1189A, R	8.80	5.90			
600	1N1190A, R	10.25	6.90	1N4005	.75	.53
800	R4100840*	11.50	7.70	1N4006	.93	.62
1000	R4101040*	13.75	9.10	1N4007	1.04	.69

*For reverse polarity, increase fourth digit by 1 (R4110840).

SILICON LOW POWER RECTIFIERS

1N4816–1N5054 (Fig. D)—Epoxy encapsulated; 1.5 A at 40° C; 50 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	PRV V	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
50	1N4816	$0.32	$0.26	500	1N4821	$0.58	$0.48
100	1N4817	.36	.32	600	1N4822	.64	.55
200	1N4818	.43	.36	700	1N5052	.87	.59
300	1N4819	.49	.40	800	1N5053	.93	.62
400	1N4820	.51	.44	1000	1N5054	1.04	.71

1N5391–1N5399 (Fig. C)—Epoxy encapsulated; 1.5 A at 40° C ambient; 50 A surge.

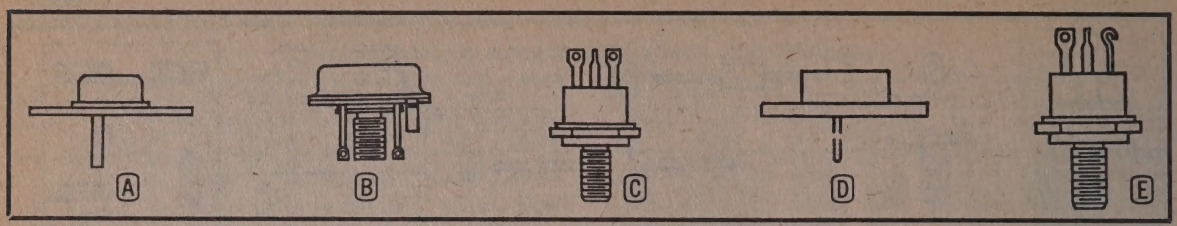
1N5400–1N5408 (Fig. D)—Epoxy encapsulated; 3 A at 50° C ambient; 200 A surge.

PRV V	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	W-H Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
50	1N5391	$0.32	$0.26	1N5400	$0.42	$0.36
100	1N5392	.36	.32	1N5401	.47	.39
200	1N5393	.43	.36	1N5402	.55	.46
300	1N5394	.49	.40	1N5403	.64	.49
400	1N5395	.51	.44	1N5404	.70	.59
500	1N5396	.58	.48	1N5405	.76	.66
600	1N5397	.64	.55	1N5406	.85	.76
800	1N5398	.93	.62	1N5407	1.31	1.16
1000	1N5399	1.04	.71	1N5408	1.73	1.45

MODULAR ASSEMBLIES (FIG. E AND F)

PRV V	W-H Type	Fig.	Amps	Net Each 1-99	Net Each 100-[illegible]
50	MB11A02V05	F	2	$ 1.25	$0.85
100	MB11A02V10			1.30	.90
200	MB11A02V20			1.35	.93
300	MB11A02V30			1.40	.95
400	MB11A02V40			1.45	1.00
600	MB11A02V60			1.50	1.05
800	MB11A02V80			1.95	1.20
1000	MB11A02W10			3.25	2.25
50	MB11A06V05	F	6	1.85	1.40
100	MB11A06V10			2.00	1.55
200	MB11A06V20			2.25	1.65
300	MB11A06V30			2.45	1.85
400	MB11A06V40			2.55	2.05
500	MB11A06V60			3.00	2.40
600	MB11A06V80			4.20	2.80
800	MB11A06W10			5.40	3.60
50	MB12A10V05	E	10	2.75	2.35
100	MB12A10V10			3.15	2.55
200	MB12A10V20			3.50	2.75
300	MB12A10V30			3.75	3.15
400	MB12A10V40			4.00	3.50
600	MB12A10V60			4.50	4.00
800	MB12A10V80			6.00	4.50
1000	MB12A10W10			7.50	5.50
50	MB12A25V05	E	25	3.20	2.60
100	MB12A25V10			3.60	3.10
200	MB12A25V20			4.00	3.50
300	MB12A25V30			4.25	3.75
400	MB12A25V40			4.50	4.00
600	MB12A25V60			5.00	4.25
800	MB12A25V80			7.00	5.00
1000	MB12A25W10			9.00	6.00

ALL RECTIFIERS ARE SUPPLIED WITH STANDARD NONINSULATING MOUNTING HARDWARE ON REQUEST. INSULATING HARDWARE KITS ARE AVAILABLE ON REQUEST AT AN ADDITIONAL CHARGE.



GENERAL PURPOSE TRANSISTORS

1571 Series (Fig. A)—I_C = 4 A; f_T = 1.0 MHz typ.

	h_{FE} = 25; I_C = .5 A			h_{FE} = 20; I_C = .5 A		
V_{CE} V	W-H Type	Net Ea., Lots of 1-99	100-999	W-H Type	Net Ea., Lots of 1-99	100-999
40	1571-0425	$1.00	$0.75			
60	2N3054	1.05	.78			
140				2N3441	$2.48	$1.80

151 Series and 152 Series (Fig. B)—Rated 6 A. I_C = 1.5 A; h_{FE} = 11 min. (152 Series, 18 min.) f_T = 500 kHz typ. V_{EB} = 25 V. T_J = −65° C to +150° C. P_D = 100 W at 80° C case.

V_{CE} V	W-H Type	Net Ea., Lots of 1-9	10-49	W-H Type	Net Ea., Lots of 1-9	10-49
40	151-04	$24.50	$22.00	152-04	$26.50	$24.00
60	151-06	25.75	23.50	152-06	28.00	25.25
80	151-08	27.50	24.75	152-08	29.75	26.75
100	151-10	29.25	26.00	152-10	31.50	28.50
120	151-12	30.75	27.75	152-12	33.50	30.00
140	151-14	32.75	29.90	152-14	35.25	31.75
160	151-16	34.75	31.00	152-16	37.50	33.75
180	151-18	36.50	33.00	152-18	39.75	35.75
200	151-20	39.00	35.00	152-20	42.00	38.00

153 Series (Fig. C)—Rated 7.5 amps. I_C = 1.5 A; h_{FE} = 15 min. f_T = 500 kHz typ. T_J = −65° C to +175° C. P_D = 200 W at 25° C case.

V_{CE} V	W-H Type	Net Ea., Lots 1-9	10-49	V_{CE} V	W-H Type	Net Ea., Lo 1-9	10-4
40	153-04	$30.50	$27.50	120	153-12	$38.50	$34.75
60	153-06	32.25	29.25	140	153-14	40.75	36.75
80	153-08	34.25	30.75	160	153-16	43.25	39.00
100	153-10	36.25	32.75	180	153-18	45.75	41.25

154 Series—Same as 153 Series, except h_{FE} = 1.5 min.

40	154-04	$33.00	$29.75	140	154-14	$44.25	$40.00
60	154-06	35.00	31.50	160	154-16	46.75	42.00
80	154-08	37.00	33.50	180	154-18	49.75	44.75
100	154-10	39.50	35.25	200	154-20	52.50	47.25
120	154-12	41.50	37.50				

1561-0403, 2N3442 (Fig. D)—h_{FE} = 20 at I_C = 3 A; I_C = 15 A; f_T = 1 MHz typ.
1561-0404–1561-1404 (Fig. D)—Same except h_{FE} = 20 at I_C = 4 A.

V_{CE} V	W-H Type	Net Ea., Lots of 1-99	100-999	W-H Type	Net Ea., Lots of 1-99	100-999
40	1561-0403	$1.00	$0.81	1561-0404	$1.05	$0.85
60	2N3232	1.05	.84	1561-0604	1.30	1.00
60				2N3055	1.40	1.05
80				2N6254	1.90	1.40
120	2N4347	3.15	2.45	2N4348	3.60	3.00
140	2N3442	3.60	3.30			
150	2N6262	3.75	3.45			

163 Series (Fig. E)—h_{FE} = 15 min. at I_C = 5 A; I_C = 20 A; f_T = 500 kHz typ.
164 Series (Fig. E)—Same ratings except h_{FE} = 25 min.

40	163-04	$38.75	$35.00	164-04	$42.00	$38.00
60	163-06	40.75	36.75	164-06	44.75	40.00
80	163-08	43.50	39.00	164-08	47.25	42.50
100	163-10	45.75	41.25	164-10	50.00	45.00
120	163-12	48.75	44.00	164-12	53.00	47.75
140	163-14	51.50	46.50	164-14	56.50	50.50
160	163-16	55.00	49.25	164-16	60.00	54.00
180	163-18	58.50	52.50	164-18	63.50	57.00
200	163-20	61.50	55.50	164-20	67.50	50.50

1561-0408, 2N3773 (Fig. D)—h_{FE} = 15 at I_C = 8 A; f_T = 1 MHz typ.; I_C = 30 A.

V_{CE} V	W-H Type	Net Ea., Lots 1-99	100-999	V_{CE} V	W-H Type	Net Ea., Lots 1-99	100-999
40	1561-0408	$2.90	$2.20	100	1561-1008	$5.40	$3.85
80	2N3238	3.85	2.75	120	1561-1208	5.00	3.75
				140	2N3773	5.00	3.75

1561-0410, 1561-1410 (Fig. D)—h_{FE} = 15 at I_C = 10 A; f_T = 1 MHz typ.; I_C = 30 A.
2N3771 (Fig. D)—Same except h_{FE} = 15 at I_C = 15 A.

V_{CE} V	W-H Type	Net Ea., Lots of 1-99	100-999	W-H Type	Net Ea., Lots of 1-99	100-999
40	1561-0410	$3.00	$2.20	2N3771	$3.30	$2.42
60	1561-0610	3.20	2.30			
60	2N3772	3.30	2.40			
80	1561-0810	3.60	2.70			
100	1561-1010	6.00	4.50			
120	1561-1210	7.00	5.40			
140	1561-1410	9.00	7.00			

MILITARY TRANSISTORS

7.5 AMP

2N1015–2N1015D (Fig. B)—$V_{CE(SAT)}$ = 1.5 V max.; f_T = 0.5 MHz typical.
2N1016–2N1016D (Fig. B)—$V_{CE(SAT)}$ = 2.5 V max.; f_T = 0.5 MHz typical.

V_{CE} Volts	W-H Type	Net Ea., Lots of 1-24	25-99	W-H Type	Net Ea., Lots of 1-24	25-99
30	2N1015	$19.50	$17.75	2N1016	$20.75	$19.00
50	2N1015A	24.75	22.50	2N1016A	25.25	23.50
100	2N1015B	31.00	28.25	2N1016B	34.00	31.00
150	2N1015C	41.25	37.50	2N1016C	41.50	38.00
200	2N1015D	59.00	53.50	2N1016D	66.00	60.00

2N3429–2N3432 (Fig. C)—Same ratings as 2N1016 Series except $V_{CE(SAT)}$ = 1 V max.

V_{CE} V	W-H Type	Net Ea., Lots of 1-99	100-999	V_{CE} V	W-H Type	Net Ea., Lots of 1-99	100-999
50	2N3429	$33.50	$26.75	150	2N3431	$60.50	$45.25
100	2N3430	44.75	34.50	200	2N3432	80.00	60.00

10 AMPS HIGH GAIN

2N2226–2N2229 (Fig. B)—h_{FE} = 100 min. at 10 A; f_T = 500 kHz typical.
2N2230–2N2233 (Fig. B)—Same except h_{FE} = 400 min. at 10 A.

V_{CE} Volts	W-H Type	Net Ea., Lots of 1-24	25-99	W-H Type	Net Ea., Lots of 1-24	25-99
50	2N2226	$ 52.00	$33.00	2N2230	$ 86.50	$ 56.50
100	2N2227	71.50	49.25	2N2231	117.00	78.00
150	2N2228	98.50	65.00	2N2232	144.75	101.75
200	2N2229	143.00	87.50	2N2233	211.50	159.00

2N3470–2N3473 (Fig. E)—h_{FE} = 100 min. at 10 A; f_T = 500 kHz typical.
2N3474–2N3477 (Fig. E)—Same except h_{FE} = 400 min. at 10 A.

V_{CE} Volts	W-H Type	Net Ea., Lots of 1-24	25-99	W-H Type	Net Ea., Lots of 1-24	25-99
50	2N3470	$ 52.50	$ 37.25	2N3474	$ 86.00	$ 62.00
100	2N3471	73.50	52.50	2N3475	117.00	81.50
150	2N3472	98.50	80.00	2N3476	162.00	147.00
200	2N3473	149.00	130.00	2N3477	213.00	187.00

30 AMPS

2N2757–2N2760 (Fig. E)—h_{FE} = 10 min. at I_C = 10 A; f_T = 500 kHz typical.
2N2763–2N2766 (Fig. E)—Same except h_{FE} at I_C = 15 A.
2N2769–2N2772 (Fig. E)—Same except h_{FE} at I_C = 20 A.
2N2775–2N2778 (Fig. E)—Same except h_{FE} at I_C = 25 A.

V_{CE} Volts	W-H Type	Net Ea., Lots of 1-24	25-99	W-H Type	Net Ea., Lots of 1-24	25-99
50	2N2757	$ 60.50	$ 51.00	2N2769	$ 73.50	$ 64.00
100	2N2758	67.00	57.50	2N2770	96.50	80.00
150	2N2759	100.00	84.50	2N2771	121.00	103.00
200	2N2760	129.00	108.00	2N2772	157.00	140.00
50	2N2763	66.50	55.00	2N2775	86.50	72.50
100	2N2764	87.00	72.00	2N2776	109.00	97.50
150	2N2765	121.00	91.50	2N2777	144.00	129.00
200	2N2766	140.00	118.00	2N2778	177.00	161.00

OUR SEMICONDUCTOR STOCK IS MAINTAINED CONSTANTLY TO ASSURE IMMEDIATE ACCESS OF ALL THE LATEST DEVICES. FOR NEW OR UNLISTED ITEMS, WRITE OR CALL OUR EXPERTS FOR QUOTATIONS.

BURROUGHS Display Devices

NIXIE® INDICATOR TUBES

All tubes are available with radioactive gas for improved dark ionization at 10% premium price. Tube types B4032, B4021, 6844A and B5991 are available to JAN specifications.

Burroughs No.	Description	Size: Character Ht., In.	Net Ea., Lots of 1-24
B7009	(0–9), EIA #7009	0.3 Min. Rd.	$21.25
B4021	(0–9), EIA #8502, low voltage	0.3 Min. Rd.	37.00
B4032*	(0–9), EIA #7977	0.3 Min. Rd.	21.25
B4032A*†	(0–9)	0.3 Min. Rd.	23.40
B4998*	(0–9)	0.3 Min. Rect.	23.90
B6844A	(0–9), EIA #6844A	0.6 Std. Rd.	12.30
B5025	(0–9)	0.6 biquinary	34.75
B5092A*†	(0–9), EIA #8421, wide angle	0.6 Std. Rd.	17.65
B5441A*†	(0–9), dec. pt., side view	0.6 Std.	15.75
B5442A*†	(+, −), side view	0.6 Std.	12.00
B5445*	(0–9), wide angle, side view	0.6 Std.	8.95
B5853*	(0–9), long leads, side view	0.5 Std.	8.00
B5853S*	(0–9), short leads, side view	0.5 Std.	6.45
B5853ST*	(0–9), thick spacer, side view	0.5 Std.	8.00
B5866*	(+, −), long leads, side view	0.5 Std.	9.00
B5866S*	(+, −), short leads, side view	0.5 Std.	9.00
B5866ST*	(+, −), thk. spcr., side view	0.5 Std.	9.00
B5870*	(0–9), long leads, side view	0.5 Std.	9.00
B5870S*	(0–9), short leads, side view	0.5 Std.	9.00
B5870T*	(0–9), long leads, thk. spcr., side view	0.5 Std.	9.00
B5870ST*	(0–9), short leads, thk. spcr., side view	0.5 Std.	9.00
B5971*	Alphanumeric, wide angle, 13-segment, EIA #8781	0.6	33.60
B5991*	(0–9), wide angle, EIA #8422	0.6 Std. Rect.	17.65
B5992*	(+, −), wide angle	0.6 Std. Rect.	17.65
B5995*	(0–9), dec. pt., wide angle	0.6 Std. Rect.	19.45

*Ultra-long life tubes contain mercury. †Contain radioactive gas.

SELF-SCAN® BAR GRAPH DISPLAYS

Self-scan bar graph displays provide analog signal representations with digital accuracy. Up to 400 individual elements are controlled by only six active drivers using eight connections to the display. Applications include: automobile and aircraft instrumentation, process controllers, depth indicators, panel meters and medical instrumentation. Advantages include: low power requirements, simple electronics interface, long life, high reliability, 100- and 200-element linear models available, 120-element circular models available, and special shapes easily made. Designer's kits are available to permit rapid and simple evaluation of the bar graphs. Kits K1, K2 and K3 come complete with printed circuit board, all necessary components, and the display panel. Kit K4 is a power supply kit. Kits K1A and K2A are kits for linear bar graphs and do not include the panel.

Burroughs No.	Description	Net Each, Lots of 1-99	100-999	1000-9999
BG16101-2	Dual 100-element linear bar graph	$ 29.00	$19.35	$14.50
BG12201-2	Dual 200-element linear bar graph	58.00	38.65	29.00
BG08120-K	Single 120-element circular bar graph	58.00	38.65	29.00
BG-K1	Designer's kit including dual 100-element bar graph	79.95	.....	.....
BG-K1A	Same as BG-K1, w/o display	54.95	.....	.....
BG-K2	Designer's kit, including dual 200-element linear bar graph	99.95	.....	.....
BG-K2A	Same as BG-K2, w/o display	54.95	.....	.....
BG-K3	Designer's kit, including single 120-element circular bar graph	109.95	.....	.....
BG-K4	+5 V and +250 V power supply kit	29.50	.....	.....

PANAPLEX® DISPLAYS

Panaplex panel displays are common-envelope, multi-digit, segmented, thin-panel, numeric display devices. Panels are available in several character sizes to satisfy a variety of viewing distance applications. The display is designed to be operated in a multiplexed mode where the cathode drive and decoder circuitry is time-shared among all of the digit positions. Characters are displayed by successively applying positive signals to the anodes corresponding to each of the character positions while negative signals are applied to the appropriate cathode buses. These displays are used primarily in high-volume, consumer-oriented applications.

Burroughs No.	Digits	Net Each, Lots of 1-99	100-999	1000-9999
0.2″ NUMERALS				
BR09250M	9	$16.20	$10.80	$ 8.10
BR09270MLC	9	14.85	9.90	7.45
BR10250M	10	18.00	12.00	9.00
0.25″ NUMERALS				
BR09253	9	$16.20	$10.80	$ 8.10
BR12250	12	21.60	14.40	10.80
BR12259	9	17.28	11.52	8.64
BR12261	11	19.80	13.20	9.90
BY13271C	12	18.90	12.60	9.95
BR16252	16	28.80	19.20	14.40
0.4″ NUMERALS				
BR09450	9	$21.00	$14.00	$10.50
BR09471C	8	15.70	10.50	7.89
BR11470C	11	18.00	12.00	9.00
0.4″ NUMERALS (CONT'D)				
BR13451	12	29.25	19.50	14.63
BR16452	16	36.00	24.00	18.00
0.7″ NUMERALS				
CD40733-CM	4 (Clock)	$12.65	$ 8.45	$ 6.33
CD60733-CM	6 (Clock)	17.50	11.65	8.74
0.5″ NUMERIC WITH ANNUNCIATORS				
C6009	6	$25.20	$12.60	$ 8.40

BIPCO® MODULE DECODER/DRIVERS

Burroughs No.	Description	Net Ea., Lots of 1-24
BIP-8507P	Driver for B5992 (+, −)	$18.00
BIP-8804-1*	4-line, 8-4-2-1 BCD, IC driver for B5991	42.90
BIP-8804-2*	4-line, 8-4-2-1 BCD, IC driver for B59956 with decimal point	43.35
BIP-8804-4*	IC driver for B5992 (+, −)	45.35
BIP-8806-1*	4-line, 8-4-2-1 BCD, IC driver with memory for B5991	42.90
BIP-8806-2*	4-line, 8-4-2-1 BCD, IC driver with memory for B59956 with decimal point	52.00
BIP-8806-4*	IC driver with memory for B5992 (+, −)	49.50
BIP-9502	13-line memory driver for B5971 alphanumeric	89.00

*Price includes tube.

SELF-SCAN® ALPHANUMERIC DISPLAYS

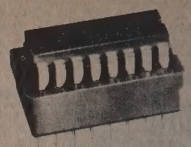
Display panels present alphanumeric characters in 5 x 7 dot matrix format using gas discharge technology. The displays are easily controlled by microprocessors. These panels are excellent for man/machine interface solutions and can present data in several ways. Data can be entered from right-to-left or left-to-right, depending on the version chosen. Refresh memory is provided with these panel types. Displays are available with or without refresh memory, which permits data inputs to be removed when data taken signal is received. Where continuously updated data is available, refresh memory is not required. Characters are displayed with two column spaces between characters: and character generators are available for modified ASCII 64- and 128-character subsets, as well as various foreign fonts: including Cryllic, Hebrew and Katakana. The panels are packaged in a bezel assembly for front or back panel mounting.

Burroughs No.	Description	Net Ea., Lots of 1-9	10-49
16-CHARACTER, SINGLE ROW 0.4″ CHARACTER HEIGHT			
SSD1000-0030	Without memory	$155.00	$125.00
SSD1000-0041	Memory, left to right entry	240.00	205.00
SSD1000-0061	Memory, right to left entry	264.00	225.00
SSD1000-0070	Memory, 128-character repertoire, right to left entry	300.00	255.00
32-CHARACTER, SINGLE ROW 0.2″ CHARACTER HEIGHT			
SSD0132-0030	Without memory	$182.00	$155.00
SSD0132-0040	Memory, left to right entry	270.00	230.00
SSD0132-0060	Memory, right to left entry	280.00	240.00
SSD0132-0070	Memory, 128-character repertoire, right to left entry	318.00	273.00
SSD0132-0080	Prom memory, right to left entry	369.00	293.00
80-CHARACTER, SINGLE ROW 0.2″ CHARACTER HEIGHT			
SSD0180-0040	Memory, 64-character repertoire, left to right entry	$630.00	$485.00
SSD0180-0050	Memory, 128-character repertoire, left to right entry	660.00	515.00
SSD0180-0060	Memory, 64-character repertoire, right to left entry	640.00	495.00
SSD0180-0070	Memory, 128-character repertoire, right to left entry	670.00	525.00
COMPLETE 256-CHARACTER SUBSYSTEMS			
BDS40832-201	Panel and control electronics, can be separated up to 7 ft.	$1058.00	$916.00
BDS40832-205	Control electronics mounted to panel	995.00	862.00
BDS40832-206	Control electronics mounted to panel and with wired I/O connectors	1036.00	880.00
BDS40832-207	Control electronics mounted to panel. Has extended memory and provisions for 2 user cards	1419.00	1230.00
256-CHARACTER PANEL			
BDS40832-PD2	Panel and drive electronics	$512.00	$438.00
POWER SUPPLIES			
BDS40832-PS1	Power supply for 115 V, 60 Hz	$280.00	$238.00
BDS40832-PS1	Power supply for 220 V, 50 Hz	293.00	249.00
ACCESSORIES			
BDS40832-EB1	Extender board	$27.75	$23.75
SR132	Connector	4.50	3.80

DUAL IN-LINE IC SOCKETS

For 6, 8, 14, 16, 18, 22, 24, 36 and 40 pin dual in-line integrated circuits with either Wire-Wrap* or solder-tab terminations. One-piece molded diallyl insulators withstand high temperatures and provide excellent mechanical stability (Nos. -3777 and -3778 are one-piece molded glass-filled nylon with anti-moisture bosses). Phosphor bronze contacts accept flat or round pins up to .024″ dia. Standard terminal plating is **-03** gold for all Wire-Wrap; **-04** electrotin for all solder tab sockets. Sockets can be supplied with electro-tin plating or Wire-Wrap pins or with gold plating on solder tab pins; prices on request. May be permanently mounted individually (rivet or screw) or press-mounted in PC boards or panels for production of breadboarding. Metric dimensional sockets for standard 14 and 16 pin DIPs are also available. *Reg. Gardner-Denver Co. TM.

703-3881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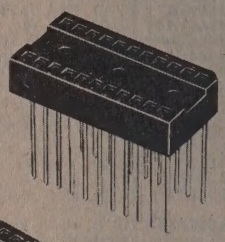
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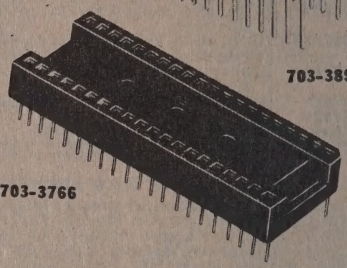
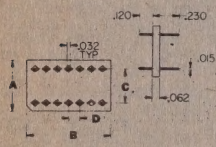

703-3766

Cambion Part No.	No. Contacts	Terminals	Inches: Overall Length	Inches: Term. Grid	Net Each, Lots of: 1-9	10-99	100-499	500-999
703-3771-01-04-16	6	Solder tab	.334	.100 x	$0.95	$0.91	$0.64	$0.58
703-3881-01-03-16	6	Wire-Wrap	.334	.300	1.31	1.26	.88	.80
703-3772-01-04-16	8	Solder tab	.434		1.00	.96	.67	.61
703-3882-01-03-16	8	Wire-Wrap	.434		1.38	1.32	.92	.84
703-3777-01-04-12	14	Solder tab	.780		.91	.87	.61	.56
703-3788-01-04-16	14	Solder tab	.784		1.13	1.08	.76	.69
703-3897-01-03-16	14	Wire-Wrap	.784		1.54	1.48	1.03	.94
703-3778-01-04-12	16	Solder tab	.834		.99	.95	.66	.60
703-3789-01-04-16	16	Solder tab	.884		1.21	1.16	.81	.74
703-3898-01-03-16	16	Wire-Wrap	.884		1.70	1.63	1.14	1.04
703-3787-01-04-16	18	Solder tab	.934		1.39	1.33	.93	.85
703-3895-01-03-16	18	Wire-Wrap	.934		2.04	1.96	1.37	1.24
703-3785-01-04-16	22	Solder tab	1.180	.100 x	1.95	1.87	1.31	1.19
703-3892-01-03-16	22	Wire-Wrap	1.180	.400	2.42	2.32	1.62	1.48
703-3790-01-04-16	24	Solder tab	1.280	.100 x	2.26	2.17	1.51	1.38
703-3896-01-03-16	24	Wire-Wrap	1.280	.600	2.64	2.53	1.77	1.61
703-3783-01-04-16	28	Solder tab	1.480		2.52	2.42	1.69	1.54
703-3890-01-03-16	28	Wire-Wrap	1.480		3.10	2.98	2.08	1.89
703-3791-01-04-16	36	Solder tab	1.880		2.94	2.82	1.97	1.79
703-3893-01-03-16	36	Wire-Wrap	1.880		3.85	3.70	2.58	2.35
703-3766-01-04-16	40	Solder tab	2.080		3.20	3.05	2.14	1.95
703-3885-01-03-16	40	Wire-Wrap	2.080		4.15	4.00	2.78	2.53

COMPONENT SOCKET ADAPTERS

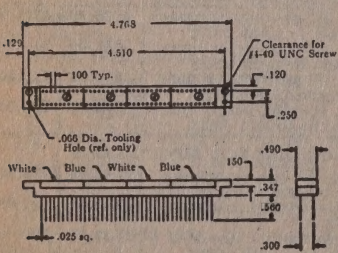


Component adapters plug into standard 14, 16, 24 or 36 pin dual in-line sockets as well as CAMBION's Integrated Socket strip. Larger width sizes for wider components straddle two sockets or socket strips. Terminal pairs are on .100″ or .200″ grid centers for varying component sizes; slotted for ease of parts mounting. Terminal is phosphor bronze, spring tempered per QQ-B-750 Comp. A. Finish is hard gold plate. Board material, .062″ type GEE glass epoxy per MIL-P-18177.

Cambion Part Number 702-	Dimensions, Inches: Board A	Board B	Terminal Centers C	Terminal Centers D	*	Net Each, Lots of: 1-9	10-49	50-99
3723-01-03-00	.450	.750	.300	.200	8	$0.93	$0.84	$0.74
3724-01-03-00	.950	.750	.800	.200	8	.93	.84	.74
3725-01-03-00	.450	.750	.300	.100	14	1.40	1.26	1.12
3726-01-03-00	.950	.750	.800	.100	14	1.40	1.26	1.12
3728-01-03-00	.450	.850	.300	.100	16	1.68	1.51	1.34
3730-01-03-00	.950	.850	.800	.100	16	1.68	1.51	1.34
3732-01-03-00	.750	1.235	.600	.200	12	1.23	1.11	.98
3734-01-03-00	.750	1.835	.600	.200	18	1.97	1.77	1.58

*No. of terminals.

80 PIN DUAL IN-LINE SOCKET STRIP



Molded diallyl body .025″ sq., Wire-Wrap posts and spring contacts, electro-tin plated. Mounts all dual in-line devices without a PC board. Flanges at the ends provide for independent mounting or into CAMBION mounting frame or relay rack drawers. Pins are replaced by removing the screw down covers. Socket strips accept five 14 pin DIPs, four or five 16 pin DIPs. Wider MSI or LSI DIPs can be mounted by bridging between two properly spaced strips.

Cambion Part No. 703-1000-01-04-00—
Net Each, 1-9 ..... **$4.80**; 10-99 ..... **$4.60**
Net Each, 100-499 ..... **3.20**; 500-999 ..... **2.93**

Cambion Part No. 706-6050-01-00-00 Mounting Frame—Holds 21 socket strips (approx. 100 ICs). Size, 5″ x 11″ approximate. Net Each, 1-4 ..... **$22.20**; 5-9 ..... **$20.00**

Cambion Part No. 706-6051-01-00-00 Double Mounting Frame—Holds 2 rows of 21 socket strip each (approx. 200 IC total). Size, 10″ x 11″ approx. Net Each, 1-4 ..... **$32.70**
Net Each, 5-9 ..... **29.40**

Cambion Part No. 706-6054-01-00-00 Mini Mounting Frame—Holds 6 socket strips (approx. 28 IC's). Size, 4″ x 5″ approx. Net Each, 1-4 ..... **$13.40**; 5-9 ..... **$12.10**

CAMBION drawer for 19″ relay rack 1¾″ h. or 3½″ h.; holds approx. 600 ICs. Information on request: 706-6000 Series.

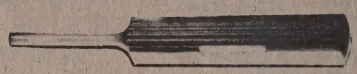
PRECUT AND STRIPPED WIRE KIT

For wire-wrapping. Solid copper 30 AWG white insulated Kynar* wire, silver plated, ends stripped to tolerance. Kit contains 13 pkgs. of varied lengths from 1″ thru 9″. Per pkg.: 1″ thru 4.5″, 100 pcs.; 5″ thru 9″, 50 pcs. Also available 1.0″ thru 25.0″ lengths in black, red and white insulation on request.

*Reg. Pennsalt Chemicals Corp. TM.

Cambion Part No. 718-1010-01-01-19—Net per Kit.... **$53.90**

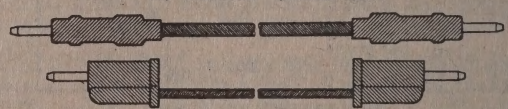
HAND WIRE WRAP TOOL



For wrapping solid copper 30 AWG wire. Low cost alternative to power equipment suitable for use in field repairs and by hobbyists and experimenters. Molded glass filled nylon. Size, 3.225″ x .480″ dia.

Cambion Part No. 435-1816-01-00-16—Net Each **$2.46**

IC PATCH CORD KIT



Contains 100 pieces (48 pcs., Fig. A; 52 pcs., Fig. B) pin patch cords .040″ dia. Red, blue and black in 2″, 4″, 6″ and 8″ lgths. Ideal for breadboarding requirements.

Cambion Part No. 446-3892-01-00-00—Net per Kit.... **$97.60**

Cambion Part No. 446-3990-01-00-00—Contains 55 pieces stackable patch cords (Fig. B). Red, black and blue in 2″, 4″, 6″ and 8″ lengths. Net per Kit **$58.20**

Cambion Part No. 446-3991-01-00-00—Contains 73 pieces stackable patch cords (Fig. B). Red, black and blue in 2″, 4″, 6″ and 8″ lengths. Net per Kit **$77.70**

SOCKET TYPE HIGH DENSITY BREADBOARDS

16 pin dual-in-line sockets. Socket terminals connected via printed wiring to .040″ cage jacks. Use with Cambion IC patch boards. Power and ground planes included.

Cambion Part No. 705-1024-01-00-00—16 sockets. Board size, 6.5″ x 6.5″. Net Each, 1-4 ..... **$69.00**; 5-9 ..... **$65.60**

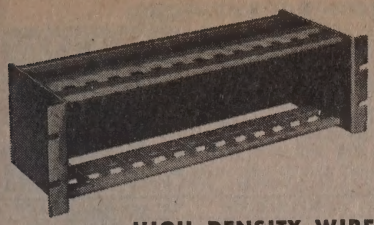
Cambion Part No. 705-1022-01-00-00—32 sockets. Board size, 6.5″ x 11.5″. Net Each, 1-4 ..... **$121.70**; 5-9 ..... **$115.60**

EXPERIMENTAL BREADBOARDS

Socket type breadboards for small circuit building applications. Socket terminal connected via printed wiring to .040″ cage jacks. Use with Cambion IC patch cords. Binding posts for power supply connections included. Size, 4.5″ x 6.5″.

Cambion Part No.	Sockets	Pins/Socket	Accepts X-Pin DIPs	Net Ea., Lots: 1-4	5-9
705-2105-02-00-00	4	18	6, 8, 14, 16, 18	$24.00	$22.80
705-2109-02-00-00	2†	22	22	23.80	22.60
705-2115-02-00-00	2	28	24, 28	22.60	21.50
705-2118-02-00-00	1*	40	24, 28, 36, 40	29.50	28.00

*Zero insertion force socket. †Includes decals for pin identification.



13 POSITION CARD FILE

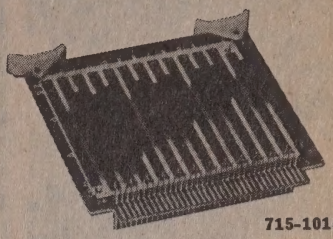
Designed to provide maximum flexibility in a choice of logic accessories. Thirteen position card file has 1¼" card spacing. Complete with 13 Wire-Wrap connectors, voltage and ground power planes. Other styles and sizes available. Complete listing on request.

Cambion Part No.	For Card Size, In.	Net Each, Lots 1-4	Net Each, Lots 5-9	Cambion Part No.	For Card Size, In.	Net Each, Lots 1-4	Net Each, Lots 5-9
706-9002-02	4.5 x 9.25	$209.80	$188.80	706-9005-02	4.5 x 4.5	$206.00	$185.40

HIGH DENSITY WIRE-WRAP* CAMBI-CARDS®

Printed circuit boards designed to accept dual in-line IC sockets, in-line integrated circuits and discrete components in a tightly arranged package for Wire-Wrap interconnections. Each socket position on **715 Series** (on every other row on **714 Series**) has two auxiliary pins to permit connecting each IC to power and ground planes. Cards with sockets affixed; with sockets and spaces for discretes; for all discretes; copper-clad and blank cards; card extenders and general purpose cards without sockets but with grid patterns permitting mixing any combination of in-line ICs in any mounting pattern. All cards have edge connectors which plug into standard CAMBION card files, available with or without mating power planes. Board material—.062" thick, double clad copper, epoxy glass cloth type FL-GE per MIL-P-13949. Pin plating, gold over phosphor bronze material.

*Registered Gardner-Denver Co. TM

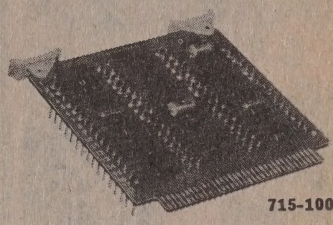


715-1015-01

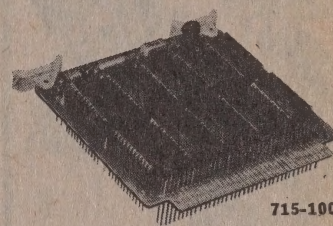
715 SERIES—70 PIN INPUT/OUTPUT CONNECTORS

All cards 4.5" wide.

Cambion Part No.	Card Lgth. In.	No. of Sockets per Card	No. of Pins/ Socket	Net Each, Lots of 1-4	5-9	10-24
715-1000-01	4.5	Card extender	.....	$ 49.30	$ 44.40	$ 39.40
715-1001-01	4.5	Blank comp. card	.....	30.30	27.30	24.20
715-1002-01	4.5	Discretes only	.....	50.90	45.80	40.70
715-1004-01	4.5	10 plus discretes	24	94.60	85.10	75.70
715-1005-01	4.5	16 plus discretes	16	94.80	85.30	75.80
715-1006-01	4.5	16 plus discretes	14	91.40	82.30	73.10
715-1011-01	4.5	24	16	94.80	85.30	75.80
715-1013-01	4.5	24	14	91.40	82.30	73.10
715-1015-01	4.5	Gen'l purpose (w/o sockets)	.....	38.70	34.80	31.00
715-1016-01	4.5	Copper clad card	.....	11.90	10.70	9.50
715-1100-01	9.25	Card extender	.....	49.30	44.40	39.40
715-1101-01	9.25	Blank comp. card	.....	36.30	32.70	29.00
715-1102-01	9.25	Discretes only	.....	58.10	52.30	46.50
715-1104-01	9.25	25 plus discretes	24	164.10	147.70	131.30
715-1105-01	9.25	56 plus discretes	16	167.60	150.80	134.10
715-1106-01	9.25	56 plus discretes	14	160.80	144.70	128.60
715-1111-01	9.25	64	16	167.60	150.80	134.10
715-1113-01	9.25	64	14	160.80	144.70	128.60
715-1115-01	9.25	Gen'l purpose (w/o sockets)	.....	51.30	46.20	41.00
715-1116-01	9.25	Copper clad card	.....	13.10	11.80	10.50



715-1002-01

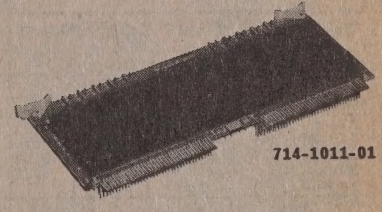


715-1004-01

714 SERIES—140 PIN INPUT/OUTPUT

All cards 9.75" wide.

Cambion Part No.	Card Lgth. In.	No. of Sockets per Card	No. of Pins/ Socket	Net Each, Lots of 1-4	5-9	10-24
714-1011-01	4.5	54	16	$191.00	$171.90	$152.80
714-1013-01	4.5	54	14	177.30	159.60	141.80
714-1015-01	4.5	Gen'l purpose (w/o sockets)	.....	73.80	66.40	59.00
714-1016-01	4.5	Copper clad card	.....	24.90	22.40	19.90
714-1111-01	9.25	126	16	329.20	296.30	263.40
714-1113-01	9.25	126	14	284.50	256.10	227.60
714-1115-01	9.25	Gen'l purpose (w/o sockets)	.....	98.30	88.50	78.60
714-1116-01	9.25	Copper clad board	.....	24.90	22.40	19.90



714-1011-01

LOGIC FUNCTION CARDS

CAMBION offers a complete line of logic function cards, all of which may be used with above standard, 4½" h., "714" and "715" series Wire-Wrap cards. Write for complete information on logic function cards.

UNIVERSAL PANELS

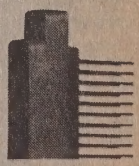
CAMBION universal panels support Wire-Wrap jacks arranged in columns .300" apart which accept dual-in-line packages with .300" and .600" pin alignment. Separate power planes are provided on each side of the panels. Several Wire-Wrap pins are provided adjacent to each column with direct connection to the power planes. Panels are available with one through six sections. Each section has large power and ground terminals for connection to power supplies and for the mounting of bulk decoupling capacitors.

Cambion Part No.	Description	Net Each, Lots of 1-4	5-9
707-1040-01-00-00	Power panel (1-section)	$ 84.50	$ 76.10
707-1040-02-00-00	Power panel (2-section)	166.50	149.90
707-1040-03-00-00	Power panel (3-section)	249.00	224.10
707-1040-04-00-00	Power panel (4-section)	331.00	297.90
707-1040-05-00-00	Power panel (5-section)	413.30	372.00
707-1040-06-00-00	Power panel (6-section)	495.50	446.00

70 PIN CARD CONNECTOR

Cambion Part No.	Terminals	Net Each, Lots of 1-9	10-24	25-49
706-7029-01	Solder lug	$6.80	$6.45	$6.10
706-7015-01*	Wire-Wrap	5.95	5.65	5.35

*For use with CAMBION Power Planes.



IC INSERTION-EXTRACTION TOOL

Handy tool properly positions integrated circuits for insertion or extraction by securely gripping the IC between the leads and under the body. Practically any IC with 14 or 16 leads aligned on 0.300" centers can easily be inserted or extracted regardless of tight packaging and without damage to the fragile IC leads. Basic material of insertion-extraction tool is plastic.

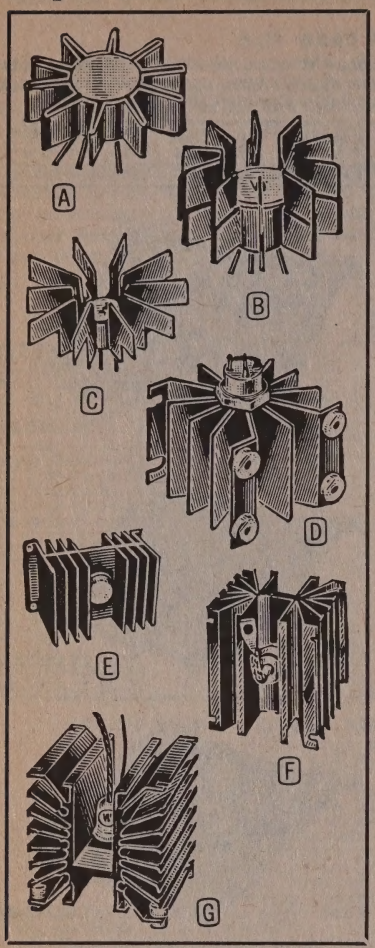
Cambion Part No. 706-3739-01—
Net Each, 1-4.....**$1.28**; 5-9.....**$1.15**
Net Each, 10-24..... **1.05**

IC TESTERS

Provide easy test point access to 14 and 16 pin Dual-In-Line IC's under operating conditions. Tester is placed over top of IC and makes contact with the exposed portion of each lead.

Cambion Part No. 706-1020-01-00-00 14-Pin Tester—
Net Each, 1-4.....**$2.93**; 5-9.....**$2.64**

Cambion Part No. 706-1019-01-00-00 16-Pin Tester—
Net Each, 1-4.....**$3.20**; 5-9.....**$2.88**



THERMAL JOINT COMPOUND

Used between semiconductor and heat-sink; or for thermoelectric modules.

Wakefield No.	Size	Net Each, Lots of 1-9	10-24	25-49
120-S	4 gm	$ 0.45*	$ 0.37*	$0.31*
120-2	2 oz.	2.35	2.21	1.94
120-5	5 oz.	3.86	3.56	3.22
120-8	8 oz.	6.31	5.91	5.21
120-80	5 lb.	29.95	29.27	.....

*Net Each, Lots 1-99, 100-499, 500-999.

VERTICAL MOUNTING ADAPTERS

Meet MIL-STD-202. Cond. B for vibration. Two required per sink. For insulation, use Teflon insulator 103, below.

No. 111—For 401 or 403.
Net Each, 1–99...**$0.24**; 100–499...**$0.19**

No. 113—For 421 or 423.
Net Each, 1–99...**$0.34**; 100–499...**$0.29**

TEFLON® INSULATORS

Type 105 accepts #10 mtg. hardware; all others, 6-32. ®DuPont TM

Type No.	For Sink Model Number	No. Req'd	Hypot kV*
101	501 502, 503, 504, 505	3 4	0.5
103	301 401	2 3	1.5
	302, 303, 403, 413, 421, 423, 431, 433, 621, 623, 641	4	1.5
105	441, 451, 465, 476, 486, 489	4	5.0
107	Same as 103		5.0

*At 60 Hz.

Wakefield Number	Net per Pkg. of 100 1-499	500-900	1000-4900
101	$18.64	$15.53	$14.51
103	7.28	6.07	5.78
105	28.57	23.81	22.22
107	28.57	23.81	22.22

SERIES 200 FEATHERWEIGHT DISSIPATORS

Unique fin design permits horizontal or vertical orientation with excellent natural convection performance in either position. In forced convection applications, the axis of the semiconductor may be oriented either perpendicular or parallel to the direction of air flow. Max. contact thermal impedance for the semiconductor case to the dissipator I.D. is 5° C/W for 201, 202, 203 and 222, 3° C/W for 204, 205, 207, 209 and 224, 2° C/W for 211, 213 and 215. Delta-T No. 120 thermal joint compound will reduce impedance by a factor of 8. Beryllium copper per MIL-C-81021 with black ebonol C finish per MIL-F-495; also available with no finish, prices on request.

Wakefield Model 160 Installation Tool—For 201, 202, 203, 204, 205, 207, 208, 209, 222 and 224. Net Each.....**$1.50**

Wakefield Model 161 Installation Tool—For 211, 213 and 215. Net Each.....**1.50**

Wakefield Number	Fig.	Fits Case Dia., In.	Fits JEDEC Case Styles	Size, Inches I.D.	O.D.	H.	Net per Pkg. of 100 1-199	200-400	500-900
201-CB*	A	.161/.240	TO-18, 24, 28, 40, 44	.150	.640	.187	$22.86	$19.05	$17.25
202-CB	A			.150	.490	.187	20.11	16.76	15.19
203-CB*	B			.150	.640	.375	32.76	27.30	24.70
206-CB*	B			.165	.510	.375	32.76	27.30	24.70
204-CB*	A	.275/.370	TO-5, 9, 11, 12, 16, 26, 29, 33, 39, 42, 43, 45	.255	.550	.187	20.11	16.76	15.19
205-CB*	A			.255	.720	.187	22.86	19.05	17.25
207-CB*	B			.255	.720	.375	32.76	27.30	24.70
208-CB*	B			.280	.580	.375	32.76	27.30	24.70
209-CB*	C			.255	1.280	.720	36.12	30.10	27.56
211-CB*	A	.440/.544	TO-8, 38, 48,	.420	.830	.187	32.76	27.30	24.70
213-CB*	B			.420	.830	.375	35.39	29.49	26.69
215-CB*	C			.420	1.400	.830	35.39	29.49	26.69
222-CB	A	.165/.240	2—TO-18, 24, 28	.150	.640	.380	31.86	26.55	24.07
224-CB	A	.275/.370	2—TO-5, 9, 11, 12, 16, 29, 33, 39, 42, 43, 45	.255	.720	.440	36.12	30.10	27.56

*Also available in aluminum alloy 6061T6 with or without black anodize finish; prices on request.

SERIES 300 SEMICONDUCTOR COOLERS (FIG. D)

Accommodate stud-mounted, press-fitted rectifiers and transistors up to 1⅛" hex case. Semiconductor mounting surface and one mounting foot are free of anodize to assure excellent thermal and electrical performance. Ideal for stacking arrangement; electrical isolation provided by Type 103 insulators or Type 104 expansion nuts (not supplied). Temperature Rise at 23 Watts: Type 301, 100° C; 302, 72° C; 303, 52° C. Full curves on request. Aluminum alloy 6063-T5 per QQ-A-200; black anodize finish per MIL-A-8625 Type II. Size 2" sq. x ¾" h., 301; 1½" h., 302 and 3" h., 303. Part No. letter suffix indicates mounting hole type; see *Ordering Information on following page.

Wakefield Number*	Net Each, Lots of 1-24	25-49	50-99	Wakefield Number*	Net Each, Lots of 1-24	25-49	50-99
301K	$1.68	$1.34	$1.10	302R	$2.68	$2.14	$1.73
301L, M, N	2.03	1.62	1.41	303K	2.35	1.88	1.49
301R	2.03	1.62	1.41	303L, M, N†	3.11	2.49	2.02
302K	2.03	1.62	1.41	303R	3.11	2.49	2.02
302L, M, N†	2.68	2.14	1.73				

*For square slots to accept insulators add suffix **S** to number and **$0.10** per piece any quantity. †Add **$0.12** per piece for LL, MM, or NN (tapped both ends) any quantity.

SERIES 400 NATURAL CONVECTION HEAT SINKS (FIG. E)

Aluminum alloy 6063T5 per QQ-A-200; black anodize finish per MIL-A-8625, Type II. All Series 400 are available with square slots for mounting Type 104 or 106 insulators. To order, add suffix **S** to number and **$0.10**/piece any quantity. Part No. letter suffix indicates mounting hole type; see *Ordering Information on following page.

401: Unexcelled for natural convection where space is critical. Thermal resistance below 0.5° C/W at moderate air flow. Size, 1.5" x 4.812". **403:** Thermal resistance 1.8° C/W at medium power levels; adequate cooling in all but the most stringent applications. Size, 3.0" x 4.812".

Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249	Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249
401-A, K	$1.75	$1.38	$1.10	$0.92	403-A, K	$2.57	$2.02	$1.62	$1.34
401-(*)	2.08	1.64	1.31	1.09	403-(*)	2.90	2.28	1.81	1.49

423: Thermal resistance 0.8° C/W at higher power levels. Designed for applications involving larger Triacs, SCR's and diodes; may be mounted vertically or horizontally. Size, 5.5" x 4.812".

423-A, K	$5.92	$4.66	$3.71	$3.10	423-(*)	$6.26	$4.93	$3.91	$3.31

*All other standard configurations; see *Ordering Information on following page.

413: Thermal resistance 1.4° C/W natural convection; 0.3° C/W moderate air flow. Size, 3.0" x 4.75". **421:** Same except 1.3° C/W natural convection.

Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249	Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249
413-A, K	$4.03	$3.17	$2.56	$2.14	421-A, K	$3.67	$2.89	$2.32	$1.92
413-(*)	4.71	3.71	3.04	2.56	421-(*)	4.03	3.17	2.51	2.10

441 (Fig. F): Designed for vertical mounting; taking better advantage of natural convection. Thermal resistance 0.55° C/W at high power levels; 0.18° C/W with moderate forced convection. Size, 4.75" x 5.5".

441-K	$9.78	$7.70	$6.17	$5.13	441-(*)	$10.46	$8.24	$6.57	$5.49

*All other standard configurations; see *Ordering Information on following page.

465 (Fig. G): Designed for 1⅛" hex high power rectifiers and SCR's. Provides maximum cooling for minimum space requirements. Size, 4" sq. **476 (Fig. G):** For 1¼" hex SCR's and rectifiers. Optimum fin efficiency with unique radial fin designs. Size, 5" sq. **486 and 489 (Fig. G):** For mounting 1¾" hex SCR's; utilize the decreased conduction path length between semiconductors and fin area for maximum cooling of these large devices. Size, 6" x 6.25", except 489, 9" x 6.25".

Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249	Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249
465-K	$6.53	$5.68	$5.00	$4.72	476-J, W	$ 9.86	$ 8.57	$ 7.50	$7.16
465-J	7.29	6.34	5.59	5.33	486-K	14.36	12.49	11.01	.....
476-K	8.92	7.76	6.81	6.42	489-K	20.76	18.05	15.81	.....

WAKEFIELD ENGINEERING INC. Semiconductor Coolers

SERIES 490 KING SIZE HEAT SINKS (FIG. H)

Natural convection sinks for multi-cell high power rectifiers. Model 490-12.0, under natural convection conditions, will permit a case temperature rise of a 3½" sq. rectifier of only 110° C at 600 W dissipation. Full curves for all types available on request. Aluminum alloy 6063T5 per QQ-A-200; black anodize finish per MIL-A-8625 Type II except for the semiconductor mounting surface where the electrical stud and high current buswork connections are made. Four mounting lugs on each end with std. ⅜" dia. bolts, nuts and washers; or, use Type 109 mounting brackets (glass fiber reinforced plastic angles) for wall mounting or insulating (two required per sink), not supplied. Size, 6.75" w. x 9.25" d. x 3.5" h., 490-3.5; 6" h., 490-6.0; 12" h., 490-12.0. All have 3½" semiconductor mounting area. For square slots add **$0.10**/piece. Part No. letter suffix indicates mounting hole type; see *Ordering Information below.

Wakefield Number	Net Each, Lots of 1-24	25-49	Wakefield Number	Net Each, Lots of 1-24	25-49
490-3.5-K	$13.82	$12.02	490-6.0-W, Y, Z	$20.84	$18.12
490-3.5-W, Y, Z	13.28	11.55	490-12.0-K	37.33	32.46
490-6.0-K	21.77	18.93	490-12.0-W, Y, Z	36.70	31.91

Wakefield No. 109 Mounting Bracket—Used with Series 490 heat sinks. Insulation strength, 5000 volts. Size, 7.50" w. x 1.5" d. x 1.5" h. Mtg. centers spaced 6".
Net Each, Lots of: 1–99 ..... **$1.72**; 100–499 ..... **$1.48**

SERIES 600 CIRCUIT BOARD COOLERS

Low profile, flat surface coolers for printed circuit and externally mounted uses. Available for TO-8 and other transistor case styles and sizes to 1⅓" O.D. **601 (Fig. I):** For TO-8 transistors; temp. rise 89° C at 10 watts; 1.25" w. x 2.00" d. x 0.56" h. **603 (Fig. I):** Same, but temp. rise 83° C at 12 watts; 2.00" w. x 2.00" d. x 0.56" h. **621 (Fig. J):** For semis to 1.335" O.D.; temp. rise, 84° C at 18 watts; 1.50" w. x 4.75" d. x 0.46" h. **623 (Fig. J):** Same, but temp. rise, 72° C at 23 watts; 3.00" w. x 4.75" d. x 0.46" h. **641 (Fig. J):** For semis to 1.335" O.D.; temp. rise, 50° C at 23 watts; 3" w. x 4.12" d. x 1" h. Aluminum alloy with black anodize finish. For square slots to accept Type 104 insulators, add suffix **S** to number and **$0.10**/piece. Part No. letter suffix indicates mounting hole type; see *Ordering Information below for other mounting types available—prices on request.

Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	Wakefield Number	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
601-K	$1.26	$1.01	$0.80	$0.68	$0.60	623-A, K	$2.26	$1.81	$1.45	$1.26	$1.09
603-K	1.43	1.14	.95	.80	.68	641-A, K	2.35	1.88	1.51	1.27	1.11
621-A, K	1.53	1.22	.97	.82	.73						

SERIES 635 SPACE SAVER COOLER (FIG. K)

Ultra low cost, lightweight heat sinks for circuit board applications. One-piece design conforms to the diamond shape of the TO-3, TO-66 and TO-220 packages for minimum space usage in high-density applications. **Material:** Aluminum alloy 6063-T6 per QQ-A-220. **Finish:** Plain or black anodize per MIL-A-8625, Type II.

Wakefield Number*	Height Inches	Finish	Net Each, Lots of 1-199	200-999	1000-2499	2500-4999	5000-9999
635-.5B1	0.5	Black	$0.259	$0.225	$0.207	$0.188	$0.174
635-.5P1	0.5	Plain	.162	.141	.13	.118	.109
635-.75B1	0.75	Black	.293	.255	.235	.213	.198
635-.75P1	0.75	Plain	.197	.171	.156	.143	.133
635-1.0B1	1.0	Black	.321	.279	.256	.232	.216
635-1.0P1	1.0	Plain	.224	.195	.179	.162	.151
635-1.25B1	1.25	Black	.352	.306	.281	.255	.237
635-1.25P1	1.25	Plain	.255	.222	.204	.185	.172

*Last digit of part number indicates hold pattern: **1** for 8-pin TO-3, **2** for standard TO-3, **3** for TO-66, **4** for TO-220

SERIES 680 CIRCUIT BOARD HEAT SINKS (FIG. L)

Optimum natural convection cooling per unit volume above the circuit board. Free circulation of air from any direction. High thermal conductivity aluminum alloy, black anodized. Accepts all popular transistors. **Temp. Rise:** 680-.5, 90° C at 10 watts; 680-.75, 90° C at 13 watts; 680-1.0, 90° C at 15 watts; 680-1.25, 100° C at 21 watts. **Size:** Base 1.81" sq. with mtg. centers 1.50", all units. Transistor mtg. area 1.31" dia., min. all units. Height, .50", 680-.5; .75", 680-.75; 1", 680-1.0; 1.25", 680-1.25. Part No. letter suffix indicates mounting hole type; see *Ordering Information below.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-499	Wakefield Number	Net Each, Lots of 1-49	50-99	100-499
680-.5A, B, G1, K	$1.17	$1.12	$0.96	680-1.0A, B, G1, D	$1.33	$1.23	$1.07
680-.75A, B, G1, K	1.23	1.17	1.00	680-1.25A, B, G1, K	1.38	1.30	1.10

★ORDERING INFORMATION

SUFFIX LETTERS FOR MOUNTING TYPES

Parts as listed are standard; deviations are special and will require tooling and set-up charges.

Wakefield No.	Standard Suffix	Wakefield No.	Standard Suffix
301*, 302, 303	K, L*, M*, N*, R	486, 489	K
310	K, J, W	490	K, W, Y, Z
401, 403, 413, 421	A, B		
423	A, B	504, 505	K, L, M, N, P, Q, X
431, 433	J, K	601, 603	E, F, K
441	G, K	621, 623, 641	A, K, V
465	J, K	680	A, B, K, G1
476	K, W		

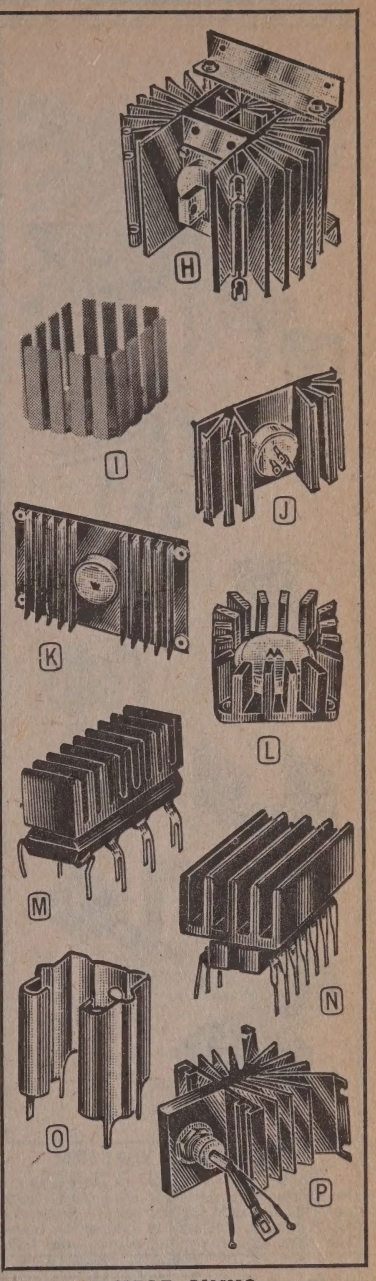
*301 available single-end L, M and N only.

Final Suffix S: When ordering heat sinks to accommodate Types 104 or 106 insulators, the suffix **S** is added to the heat sink number. Wider, square bottomed slots required for these two insulators are positioned further from the ends of the sinks.

MOUNTING SPECIFICATIONS

Locations of mounting groups on coolers to be within ½" of true position. Hole diameters **E** through **Y** not free of anodize on series 500; **R** (ream) free of anodize.

Suffix	Mtg. Hole	Suffix	Mtg. Hole	Suffix	Mtg. Hole
A	TO-3	J	0.520"	V	TO-3
B	TO-36	K	Blank	W	0.765"
E	0.200"	L	8-32 x ½"	X	5/16-24
F	0.270"	M	10-32 x ⅜"	Y	1.030"
G	0.330"	N	¼-28 x ⅜"	Z	0.765"
H	0.390"	R	0.4975"	G1, H1	TO-66



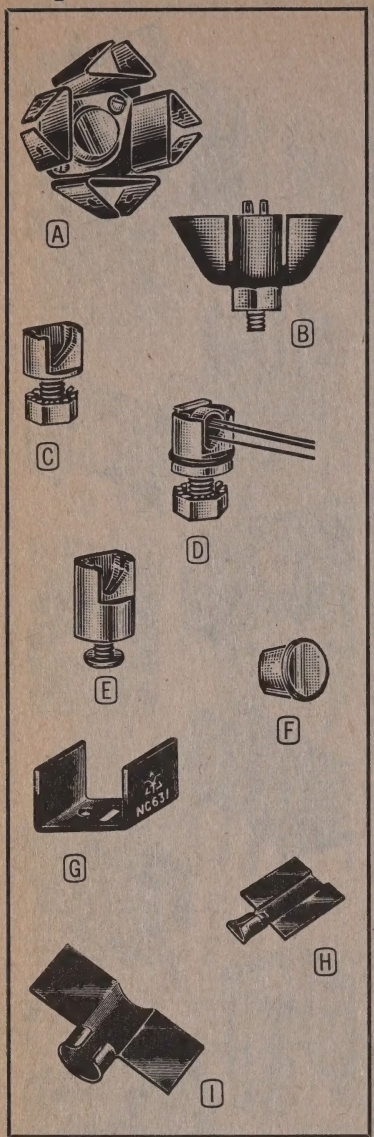
HEAT SINKS

Heat sinks for DIP and PC boards. **Type 650:** Bonded with Delta Bond epoxy for DIP. Size, .250" w. x .744" l. x .240" h. **Type 651:** Heat sink for DIP enables user to select extruded fins perpendicular to Type 650 fins to take advantage of air flow direction. Size, .415" w. x .75" l. x 24" h. **Type 295:** Solderable heat sink for PC boards. Tinned aluminum legs (.04" w. x .03" thick) plug-in .050" PC board holes for automatic soldering. **Type 310:** Extruded aluminum heat sink to provide installation in NEMA cabinets. Available in 3.0", 5.5" and 11.5" lengths with 11.5" size for mounting 1, 2, or 3 SCR's.

Wakefield Type	Fig.	Min. Order	Net, per 100 200-900	1000-2400
650-B*	M	100	$25.80	$22.20
651-B*	N	100	27.00	22.90
295-1	O	100	17.80§	15.16**
310-3.0K	P	1	5.36†	4.56‡

*Black anodize; change B to **G** for gold irridite; prices on request. Net Each: †1–24. ‡25–49; §500–900; **1000–4900.

Semiconductor Coolers



INSULATING WAFERS FOR TO-3 AND TO-66

Aluminum alloy per 5052-H38 with Delta Coate 151H (suffix **DC**) or hard coat (suffix **HC**). Thermal conductive coating on transistor side only, including edges, hole I.D.

Wakefield Number	Net per Pkg. of 10		
	10-90	100-490	500-990
170-, 171-, 172-DC	$0.86	$0.74	$0.70
170-, 171-, 172-HC	1.06	.92	.85

TYPE 690 CIRCUIT BOARD HEAT SINKS (FIG. A)

Designed to give the most power dissipation per unit cost. Power dissipation of 10–20 watts is obtainable. Made of highest thermally conductive pure aluminum, 1100 alloy. Available in both plain (suffix **P**) and black anodize (suffix **B**) finish. Available mounting patterns are for TO-3 and TO-66 JEDEC packages.

Wakefield Number	Fits Case	Size, In. W. x H.	Net per Pkg. of 100		
			1-199	200-900	1000-2400
690-3-P	TO-3	1.81 x 1.25	$34.00	$30.00	$28.00
690-66-P	TO-66	1.81 x 1.25	34.00	30.00	28.00
690-3-B	TO-3	1.81 x 1.25	46.00	38.00	34.00
690-66-B	TO-66	1.81 x 1.25	46.00	38.00	34.00

TYPE 695 CIRCUIT BOARD HEAT SINKS (FIG. B)

Made of thermally conductive pure aluminum, 1100 alloy. Available in black anodize (suffix **B**) or plain (suffix **P**) finish. Designed to accept semiconductors with threaded studs up to 10-32. Power dissipation up to 5 watts is obtainable for low power stud devices.

Wakefield Number	Fits Case	Size, In. W. x H.	Net per Pkg. of 100		
			1-199	200-900	1000-2400
695-P	DO-4	1.33 x .484	$17.10	$13.70	$12.80
695-B	DO-4	1.33 x .484	25.40	20.30	18.90

SERIES 254 THERMAL RETAINERS FOR TO-5 CASES

Designed as thermal links from TO-5 semiconductor case to cooler or chassis member acting as heat sink. Provides heat sink contact at bottom of case flange for best cooling. Ideal for use with TO-5 Kovar header case. All six types include 254-LS stainless steel locking spring for insertion behind transistor, using Type 120 thermal compound at header. Made of Zamak 3, with chromate conversion finish. Type 254-S1 has built-in electrical isolation, with stud mount of 6061-T6 aluminum with gold irridite finish. Supplied less mounting hardware.

Wakefield Number	Fig.	Mounting	Thermal Resistance	Net per Pkg. of 10		
				10-90	100-240	250-490
254-S	C	Stud	4.0° C/W	$2.96	$2.54	$2.36
254-S1	D	Stud*	6.0° C/W	2.96	2.54	2.36
254-T	E	Tapped hole	5.3° C/W	4.35	3.73	3.45
254-P	F	Plain	4.0° C/W	.89	.77	.71
254-D	F	Plain†	4.0° C/W	3.21	2.77	2.56

*With electrical isolation. †4-40 tapped thru center of base.

SERIES 630 HEAT SINKS FOR TO-3 AND TO-66 (FIG. G)

Maximum cooling heat sinks for TO-3 and TO-66. Available in 3 types utilizing same base size but three leg lengths. Type 1100-H14 aluminum 0.062″ thick. Black anodize (suffix **B**) or plain (suffix **P**) finish. Full curves on request.

Wakefield Number		Temp. Rise °C/5 W	Height, In.	Net per Pkg. of 100		
TO-3	TO-66			1-199	200-900	1000-2400
631-3-B	631-66-B	68	1.0	$19.50	$15.60	$13.60
631-3-P	631-66-P	68	1.0	8.80	7.00	5.90
632-3-B	632-66-B	57	2.0	22.90	18.30	16.00
632-3-P	632-66-P	57	2.0	12.40	9.90	8.40
633-3-B	633-66-B	45	3.0	26.50	21.20	18.30
633-3-P	633-66-P	45	3.0	15.90	12.70	11.00

TYPE 292 HEAT SINKS (FIG. H)

Accommodates most TO-92 plastic transistors for heat dissipation. Aluminum (type 6061T6) with black anodize finish (suffix **AB**) or no finish (suffix **AP**); beryllium copper with black ebonol finish (suffix **CB**) or no finish (suffix **CP**).

Wakefield Number	Net per Pkg. of 100				Wakefield Number	Net per Pkg. of 100			
	1-499	500-900	1000-4900	5000-9900		1-499	500-900	1000-4900	5000-9900
292-AB	$10.83	$8.66	$7.21	$5.78	292-CB	$11.15	$8.92	$7.49	$5.96
292-AP	2.76	2.21	1.89	1.49	292-CP	8.03	6.42	5.37	4.31

TYPE 296 HEAT SINKS (FIG. I)

Snaps onto TO-5 transistors. Finishes same as Type 292, above. Wing height, ¼″, 296-1; ½″, 296-2; ¾″, 296-3; 1″, 296-4.

Wakefield Number	Net per Pkg. of 100				Wakefield Number	Net per Pkg. of 100			
	1-499	500-900	1000-4900	5000-9900		1-499	500-900	1000-4900	5000-9900
296-1-AB	$ 7.23	$ 5.78	$ 4.86	$ 3.85	296-3-AB	$10.01	$ 8.01	$ 6.67	$ 5.37
296-1-AP	3.25	2.60	2.14	1.76	296-3-AP	3.99	3.19	2.60	2.07
296-1-CB	17.09	13.67	11.24	9.12	296-3-CB	30.74	24.59	20.51	16.43
296-1-CP	14.93	11.94	9.99	7.93	296-3-CP	27.43	21.94	18.39	14.60
296-2-AB	7.69	6.15	5.11	4.11	296-4-AB	10.34	8.27	6.88	5.51
296-2-AP	3.59	2.87	2.40	1.94	296-4-AP	4.24	3.39	2.74	2.27
296-2-CB	23.83	19.06	15.89	12.67	296-4-CB	38.30	30.64	25.37	20.38
296-2-CP	21.18	16.94	14.13	11.29	296-4-CP	34.01	27.21	22.60	18.08

EPOXY RESINS, HARDENERS AND ADHESIVES

MIXING PROPORTIONS AND WORKING TIME

Hdnr. No.	Net Wt./ Btl. Lbs.	Parts Hardener per 100 Parts Resin			Wkg. Time Hours
		151	152,153	154	
A4	.30	....	7.5	10.5	.75
B4	.14	....	3.5	5.0	.50
C4	.18	....	4.5	6.5	4.0
D4	.92	....	23.0	33.0	24.0
H3	.12	4	.....	.....	4.0

Delta Coate 151: Thermally conductive dielectric epoxy coating which may be applied using conventional paint spraying equipment. A .006″ coating yields 1000 V working dielectric strength for applications such as electrically isolating semiconductors from their heat sinks. **Delta Bond 152:** Contains no volatile solvents and is therefore 100% solid adhesive. Effective on porous and non-porous surfaces such as metals, glass, ceramics and most plastics. **Delta Cast 153:** Pourable casting resin for encapsulating components and assemblies. Thermal expansion is similar to aluminum and copper and assemblies will operate over a very wide temperature range. **Delta Bond 154:** Medium viscosity aluminum filled resin with the best thermal conductivity of this series. Not recommended for use as an electrical insulator nor conductor; principal application is that of a good thermal-mechanical adhesive for applications such as bonding fins to base plates or semiconductor mounting blocks or brackets to heat sinks. Machines freely. **Hardeners:** Available as listed for use with resins. Working time, cure time and properties of cured resins vary. For additional data request Catalog No. 103.

Resin No.	Size Can	Hardener Req'd	Net Ea., Lots 1-9	Net Ea., Lots 10-24
151-Q	Qt.	H3	$21.24	$19.16
152-Q	Qt.	A4, B4,	15.52	13.94
152-G	Gal.	C4, D4	55.30	53.09
153-Q	Qt.	A4, B4	$15.52	$13.94
153-G	Gal.	C4, D4	55.30	53.09
154-Q	Qt.		12.87	11.51

Hardener No.	Net Ea., Lots 1-9	Net Ea., Lots 10-24	Hardener No.	Net Ea., Lots 1-9	Net Ea., Lots 10-24
A4	$6.13	$5.72	D4	$10.35	$7.92
B4	3.97	2.99	H3	3.75	2.83
C4	5.09	3.47			

SERIES 130 PRESS-PAK HEAT SINKS AND CLAMPS (FIG. A)

Standard single heat sinks for use with Type 130 clamps; multiple heat sinks available, data and prices on request. T-slots accept standard hex head machine bolts for mounting and busing. Only one sink of a given pair should be bolted to rigid busing. Aluminum alloy 6063T5 with black anodize (suffix **B**) or gold irridite (suffix **G**) finish. Natural and forced convection data available on request. Size, 5″ w. x 4½″ d., except 133-4.5, 7″ w. x 4½″ d. and 133-7.5, 7″ w. x 7½″ d.

Wakefield Number	Ht., In.	Net Each, Lots of 1-9	10-24	25-49	Wakefield Number	Ht., In.	Net Each, Lots of 1-9	10-24	25-49
131-4.5-B	1⅛	$3.16	$3.00	$2.87	132F-4.5-B	3¼	$ 5.11	$4.41	$4.21
131-4.5-G	1⅛	2.31	2.18	2.10	132F-4.5-G	3¼	3.37	3.18	3.05
131F-4.5-B	2	3.04	2.88	2.75	133-4.5-B	3⅛	6.48	6.16	5.89
131F-4.5-G	2	2.18	2.06	1.99	133-4.5-G	3⅛	5.70	5.42	5.19
132-4.5-B	2¼	3.80	3.60	3.43	133-7.5-B	3⅛	10.42	9.89	9.47
132-4.5-G	2¼	3.04	2.88	2.75	133-7.5-G	3⅛	9.22	8.75	8.38

SERIES 130 CLAMP AND SPRING ASSEMBLIES

Fit all Press-Pak SCR sizes up to 2.25″ dia. Affords clamping force centering accuracy of less than 10% of junction diameter with Series 130 heat sinks, above.

STUD ASSEMBLIES

Crossbar is CRS, 3.8″ lg. x 13⁄16″ w. x ½″ thick. Stainless steel studs spaced 2¾″. Assembly is coated with epoxy insulating compound for 5 kVAC breakdown min.

Wakefield No.	Clearance*	Net Each, Lots of 1-9	10-24	25-49	Wakefield No.	Clearance*	Net Each, Lots of 1-9	10-24	25-49
130-A	1.74–2.12	$3.97	$3.34	$2.90	130-H	3.91–4.29	$4.30	$3.61	$3.15
130-B	2.05–2.43	3.97	3.34	2.90	130-J	4.22–4.60	4.30	3.61	3.15
130-C	2.36–2.74	3.97	3.34	2.90	130-K	4.53–4.91	4.53	3.81	3.31
130-D	2.67–3.05	4.19	3.54	3.06	130-L	4.84–5.22	4.53	3.81	3.31
130-E	2.98–3.36	4.19	3.54	3.06	130-M	5.15–5.53	4.53	3.81	3.31
130-F	3.29–3.67	4.19	3.54	3.06	130-N	5.46–5.84	4.82	4.06	3.90
130-G	3.60–3.98	4.30	3.61	3.15	130-P	5.77–6.15	4.82	4.06	3.90

*Min.–max., stud bar to top of clamp; includes spring assembly height.

SPRING ASSEMBLIES

Each leaf provides up to 400 lbs. clamping force; integral force indicator reads lbs./leaf in 100-lb. graduations (available without indicator). Stainless steel alloy has low creepage rate (less than 15% in 5 years at 400 lbs./leaf at 150° C operating); better than the best automotive valve-spring steels. Swivel pad is 2024 aluminum.

Wakefield No.	Leaves No.	H.	Net Each, Lots of 1-9	10-24	25-49	Wakefield No.	Leaves No.	H.	Net Each, Lots of 1-9	10-24	25-49
130-2	2	.50″	$3.82	$3.23	$2.79	130-4	4	.72″	$4.83	$4.13	$3.41
130-3	3	.61″	4.25	3.59	3.09	130-5	5	.83″	5.06	4.28	3.71

*For unit without indicator, deduct **25c.**

SERIES 260 CUP CLIPS FOR TO-5 AND TO-18 CASE

Brass base per QQB626a Comp. 22, black ebonol C finish per MIL-F-495. Cups are beryllium copper alloy #10 per MIL-C-81021, black ebonol C finish per MIL-F-495. Ceramic spacers are beryllium oxide, 99% purity, 95% density. Flared lip standard for easy component insertion. **Plain Mounting Base Types (Fig. B):** Can solder into place or used with pan head screws (#4 for TO-5; #2 for TO-18); 260-P5B and 260-P18B are for mounting with thermally conductive adhesive such as Delta Bond 152. **Tapped Base Types (Similar Fig. B):** Use 4-40 screw for TO-5; 2-56 for TO-18; 260-4TH5B and 260-2TL18 have thick base for wider screw length tolerances. **Stud Mounting Types (Figs. C and D):** Have 6-32 or 10-32 studs for TO-5 case; 4-40 and 6-32 for TO-18. Operate continuously between −100° F to +300° F. **Suffix B** (e.g., 260-P5**B**)**:** Beryllium oxide insulated for operations requiring low stray capacity to heat. Hypot rating 1000 VAC, 60 Hz for TO-5; 750 VAC, 60 Hz for TO-18. Color coded white. **Suffix E:** Epoxy insulated; color coded yellow. Hypot rating, 500 VAC, 60 Hz for TO-5; 250 VAC, 60 Hz for TO-18. **No Suffix:** Indicates non-insulated. **Size:** 0.29″ I.D. cup, hex base .37″ across flats for TO-5; .170″ I.D. with .25″ hex for TO-18.

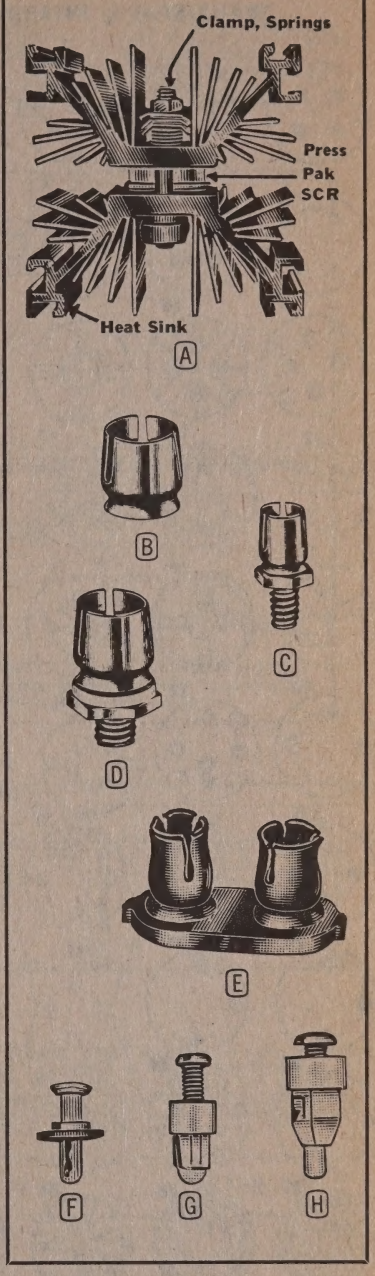
Wakefield Number	Fig.	Typical Case-to-Sink Thermal Resistance, °C/W	Hole or Thread Size	Net per Pkg. of 10 1-19	20-40	50-90
260-P5	B	12*	.112″ diameter	$ 3.34	$ 2.67	$ 2.31
260-P5B	B	16*	.185″ diameter	10.73	8.58	7.38
260-4T5	B	12*	4-40 fem., chamfer	6.33	5.06	4.37
260-4T5E	B	14*	4-40 fem., chamfer	7.98	6.38	5.47
260-4TH5B	B	16*	4-40 female	14.85	11.88	10.26
260-4TH5E	B	14*	4-40 female	7.98	6.38	5.47
260-6SH5	C	12*	6-32 stud	9.01	7.21	6.26
260-6SH5B	C	16*	6-32 stud	14.85	11.88	10.26
260-6SH5E	C	14*	6-32 stud	11.36	9.09	7.82
260-10SH5	D	12*	10-32 stud	7.05	5.64	4.88
260-10SH5B	D	16*	10-32 stud	14.85	11.88	10.26
260-10SH5E	D	14*	10-32 stud	9.01	7.21	6.26
260-P18	B	22.5†	.089″ diameter	3.34	2.67	2.31
260-P18B	B	27.5†	.128″ diameter	10.73	8.58	7.38
260-2T18	B	22.5†	2-56 female	7.05	5.64	4.88
260-2TH18	B	22.5†	2-56 female	7.05	5.64	4.88
260-2TH18B	B	27.5†	2-56 female	15.50	12.40	10.81
260-2TH18E	B	25.0†	2-56 female	9.01	7.21	6.26
260-2TL18E	B	25.0†	2-56 female	7.98	6.38	5.47
260-4SH18	C	22.5†	4-40 stud	7.05	5.64	4.88
260-4SH18B	C	27.5†	4-40 stud	14.85	11.88	10.26
260-4SH18E	C	25.0†	4-40 stud	9.01	7.21	6.26
260-6SH18	D	22.5†	6-32 stud	7.05	5.64	4.88
260-6SH18B	D	27.5†	6-32 stud	14.85	11.88	10.26
260-6SH18E	D	25.0†	6-32 stud	9.01	7.21	6.26

*With #30 copper-constantan thermocouple soldered to center of header of RCA 2N3053.
†With #30 copper-constantan thermocouple soldered to emitter-tab of Sprague 2N2907A.

SERIES 100 "BLIND" NYLON INSULATING FASTENERS

Type 102 (Fig. F): Fastener-washer pair quickly mounts and electrically isolates most of the Series 400 and 600 heat sinks. Size, 7⁄16″ O.D. x 1⁄16″ thick; for panel hole .187″ dia. and .063″ max. panel thickness. **Type 104 (Fig. G):** Screw mount with #8 sheet metal or machine screw; screw length, ⅝″ plug panel thickness. **Type 106 (Fig. H):** Larger screw mount type; screw length, ¾″ plus panel thickness.

Wakefield Number	Fig.	Hypot Kilovolts	Shoulder Dia.	Net per Pkg. of 100 1-499	500-900	1000-4900
102	F	1.5	⅜″	$4.34	$3.62	$3.42
104	G	3	⅜″	3.64	3.03	2.79
106	H	3	½″	5.99	4.99	4.59



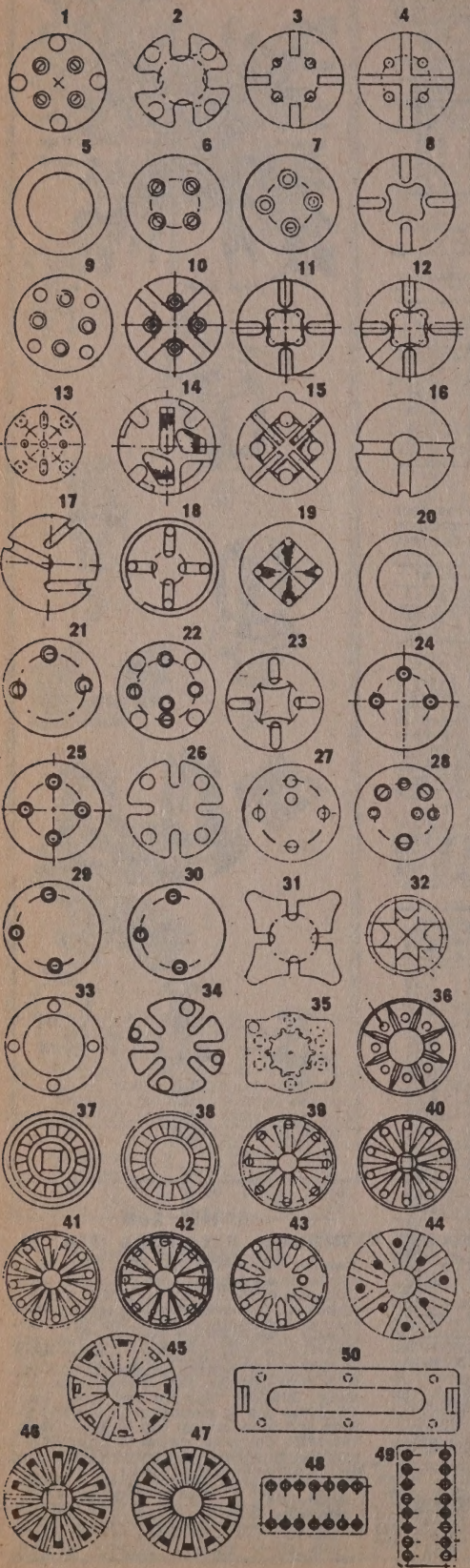
SERIES 260 THERMAL RETAINERS (FIG. E)

Two cup clips are bonded with Delta Bond 152 to an aluminum base precoated with Delta Coate 151H. This provides a thermal equalizing link with excellent thermal dissipation characteristics. Clips are electrically insulated from the strip and each other. Cup clip beryllium copper with black ebonol C finish; base aluminum 1100-H14 clear irridite and Delta Coate 151 finish. **260-5D:** Thermal resistance from TO-5 cup clip to mounting base is 13° C/watt and from cup to cup is 30° C/watt. **260-18D:** Thermal resistance from TO-18 cup clip to mounting base is 24° C/watt and cup to cup is 60° C/watt.

Wakefield Number	Net per Pkg. of 10 1-19	20-40	50-90
260-5D	$15.88	$12.70	$11.02
260-18D	15.88	12.70	11.02

Waldom/Bivar PERMO PADS™

FOR PROTECTING, LOCATING, FIXTURING, SPACING, MOUNTING AND REINFORCING TRANSISTORS, INTEGRATED CIRCUITS AND OTHER PRINTED CIRCUIT COMPONENTS



- IMPROVE RELIABILITY
- REDUCE PRODUCTION COSTS
- NYLON PER MIL-M-20693

MOUNTING PADS FOR TO-18 CASE

Waldom/ Bivar Number	Fig.	O.D., In.	Thickness In.	Lead Spacing, In. Entry	Exit	Standard Pkg. 100 Pieces Net/100 100-499	500-Up
100-095	1	.200	.095	.100	.100	$4.35	$3.35
101-096	2	.200	.096	.100	.100	4.35	3.35
102-125	3	.250	.125	.100	.100	4.35	3.35
111-125	4	.250	.125	.100	.100	4.35	3.35
103-080	5	.225	.080	.100	.100	4.35	3.35
104-060	6	.200	.060	.100	.100	4.35	3.35
105-021	7	.250	.021	.100	.100	4.35	3.35
106-045	8	.270	.045	.100	.100	4.35	3.35
107-180	9	.200	.180	.100	.100	4.70	3.65
108-021	10	.225	.021	.100	.100	4.35	3.35
109-045	11	.200	.045	.100	.100	4.35	3.35
110-030	12	.200	.030	.100	.100	4.35	3.35
112-040	13	.230	.040	.100	.100	4.35	3.35

SPREADER PADS FOR TO-18 CASE

200-170	14	.225	.170	.100	.200	$4.70	$3.65
201-150	15	.310	.150	.100	.200	4.70	3.65
202-150	16	.250	.150	.100	.200	4.70	3.65
203-150	17	.250	.150	.100	.200	4.70	3.65
204-125	18	.270	.125	.100	.200	4.70	3.65
205-085	19	.225	.085	.100	.150	4.70	3.65

MOUNTING PADS FOR TO-5 CASE

500-080	20	.365	.080	.200	.200	$4.70	$3.65
501-075	21	.345	.075	.200	.200	4.70	3.65
502-120	22	.345	.120	.200	.200	4.70	3.65
503-075	23	.345	.075	.200	.200	4.70	3.65
504-038	24	.345	.038	.200	.200	4.70	3.65
511-038	25	.345	.038	.200	.200	4.70	3.65
505-120	26	.350	.120	.200	.200	4.70	3.65
506-038	27	.350	.038	.200	.200	4.70	3.65
507-100	28	.340	.100	.200	.200	4.70	3.65
508-075	29	.281	.075	.200	.200	4.70	3.65
510-110	30	.281	.110	.200	.200	4.70	3.65
509-060	31	.312	.060	.200	.200	4.70	3.65
512-115	32	.230	.115	.200	.200	4.70	3.65

FOR MOUNTING TO-5 INTEGRATED CIRCUITS

Waldom/ Bivar Number	Fig.	No. Leads	O.D., In.	Thickness, In.	Lead Spacing, In. Entry*	Standard Pkg. 100 Pieces Net/100 100-499	500-Up
600-080	33	.....	.365	.080	.200/.230	$4.70	$3.65
601-120	34	6	.350	.120	.200/.230	5.00	3.85
608-090	35	10	.390	.090	.200/.230	5.50	4.25
605-085	36	8	.370	.085	.200/.230	5.50	4.25
606-075	37	10	.370	.075	.200/.230	5.50	4.25
607-075	38	12	.370	.075	.200/.230	5.50	4.25

*Exit spacing of leads same as entry spacing.

MOUNTING PAD SPREADERS FOR INTEGRATED CIRCUITS

700-130	39	8	.500	.130	.230/.300	$8.40	$6.70
701-130	40	10	.500	.130	.230/.300	8.40	6.70
702-130	41	12	.500	.130	.230/.300	8.40	6.70
707-120	42	8	.450	.120	.230/.300	8.40	6.70
708-275	43	12	.500	.275	.230/.300	8.40	6.70
703-250	44	8	.500	.250	.200/.300	9.05	7.25
704-250	45	8	.500	.250	.200/.300	9.05	7.25
705-250	46	10	.500	.250	.200/.300	9.05	7.25
706-250	47	12	.500	.250	.200/.300	9.05	7.25

*Exit spacing of leads, .400".

814-060	48	14	.450†	.060	.100	$8.40	$6.70
814-080	48	14	.450†	.080	.100	8.40	6.70
814-100	48	14	.450†	.100	.100	8.40	6.70
816-060	49	16	.450†	.060	.100	8.40	6.70
816-080	49	16	.450†	.080	.100	8.40	6.70
816-100	49	16	.450†	.100	.100	8.40	6.70
808-187	50	8	.385†	.187	.200/.230	9.05	7.25
810-187	50	10	.385†	.187	.200/.230	9.05	7.25
812-187	50	12	.385†	.187	.200/.230	9.05	7.25

*Exit spacing of leads, .100". †Overall width.

These Products Manufactured by BIVAR, INC.

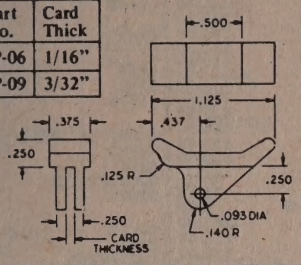
Waldom/Bivar
CARD EJECTORS AND ECON-O-GUIDES™

P.C. CARD EJECTORS

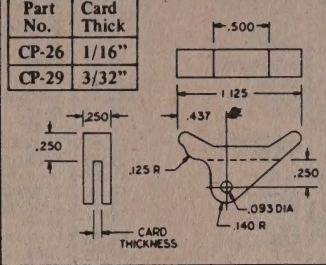
P.C. Card Ejectors provide safe and easy lever action for extraction and insertion of 1/16" and 3/32" PCBs. Available from stock in 8 standard styles and 2 locking versions for positive retention. CARD-O-PULLs are molded from natural white Nylon per MIL-M-20693 and can be supplied in 12 additional colors with hot stamped markings for permanent identification on a custom basis.

- Protect components, circuitry, connectors, PCB's and system from excessive stress damage.
- Designed for both 1/16" and 3/32" PCB's. Can be used in most systems.
- Aids insertion and extraction of PCB's—eliminates extraction tools.
- Available in locking versions.
- Available from stock.

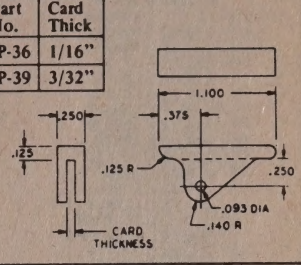
Part No.	Card Thick
CP-06	1/16"
CP-09	3/32"



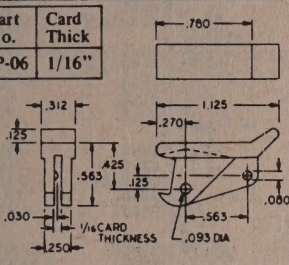
Part No.	Card Thick
CP-26	1/16"
CP-29	3/32"



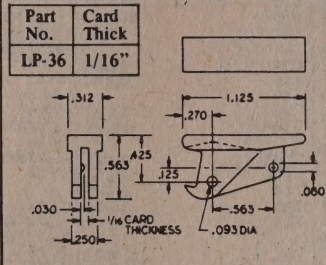
Part No.	Card Thick
CP-36	1/16"
CP-39	3/32"



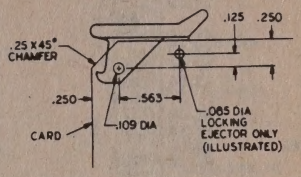
Part No.	Card Thick
LP-06	1/16"



Part No.	Card Thick
LP-36	1/16"



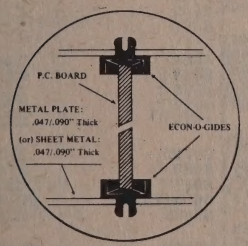
CARD MOUNTING DIMENSIONS



NOTE: 2 Ejectors, mounted on opposing corners, are recommended for cards where width is greater than length.

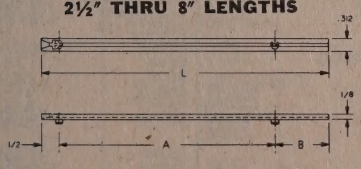
PRICING INFORMATION

Waldom/ Bivar Number	Card Thickness	Net Each, Lots of						
		1-49	50-99	100-499	500-999	1000-2499	2500-4999	5000-9999
CP-06	1/16"	$0.39	$0.30	$0.23	$0.21	$0.18	$0.17	$0.16
CP-26	1/16"	.39	.30	.23	.21	.18	.17	.16
CP-36	1/16"	.39	.30	.23	.21	.18	.17	.16
CP-09	3/32"	.40	.31	.24	.22	.19	.18	.17
CP-29	3/32"	.40	.31	.24	.22	.19	.18	.17
CP-39	3/32"	.40	.31	.24	.22	.19	.18	.17
LP-06	1/16"	.44	.34	.27	.25	.22	.21	.20
LP-36	1/16"	.44	.34	.27	.25	.22	.21	.20

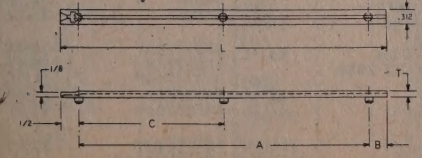


Typical Installation

2½" THRU 8" LENGTHS



8½" THRU 14" LENGTHS



ECON-O-GUIDES™

With these convenient snap-in card guides, your board stacking or rack mounting options are greatly increased. Guides may be located to desired spacing; they add extra insulation between boards and rack or cabinet enclosures. For computers/ systems, instrumentation and industrial applications. Constructed of rigid, reinforced nylon, black. Standard lengths, 2½" thru 14" in ½" increments. Mounting: Snap-in metal plates, .047/.090 inches thick. Hole size, .172" dia.

Waldom/ Bivar Number	Dimensions, Inches					Net Each, Lots of*	
	L	A	B	C	T	5-49	50-Up
E-250	2.5	1 33/64	0.5			$0.25	$0.20
E-300	3.0	1 33/64	1.0			.25	.20
E-350	3.5	1 33/64	1.5			.25	.20
E-400	4.0	3 1/64	.5			.27	.22
E-450	4.5	3 1/64	1.0			.27	.22
E-500	5.0	3 1/64	1.5			.27	.22
E-550	5.5	3 1/64	2.0			.27	.22
E-600	6.0	5 1/64	0.5			.30	.24
E-650	6.5	5 1/64	1.0			.30	.24
E-700	7.0	6 1/32	0.5			.38	.30
E-750	7.5	6 1/32	1.0			.38	.30
E-800	8.0	6 1/32	1.5			.38	.30
E-850	8.5	7 17/32	.5	3 49/64	.141	.44	.35
E-900	9.0	7 17/32	1.0	3 49/64	.141	.44	.35
E-950	9.5	7 17/32	1.5	3 49/64	.141	.44	.35
E-1000	10.0	9 1/32	.5	4 33/64	.141	.50	.40
E-1050	10.5	9 1/32	1.0	4 33/64	.141	.50	.40
E-1100	11.0	9 1/32	1.5	4 33/64	.141	.50	.40
E-1150	11.5	10 35/64	.5	5 17/64	.156	.60	.47
E-1200	12.0	10 35/64	1.0	5 17/64	.156	.60	.47
E-1250	12.5	10 35/64	1.5	5 17/64	.156	.60	.47
E-1300	13.0	12 3/64	.5	6 1/64	.156	.68	.55
E-1350	13.5	12 3/64	1.0	6 1/64	.156	.68	.55
E-1400	14.0	12 3/64	1.5	6 1/64	.156	.68	.55

*Standard Packaging: 8" or less, 10 pieces; 8.5" and up, 5 pieces.

These Products Manufactured by BIVAR, INC.

Amperex® Industrial Tubes

● POWER TUBES ● MICROWAVE TUBES ● SPECIAL PURPOSE TUBES

Information on types available government source inspected to applicable MIL specs available on request.

Amperex Type	Net Each
2-01C	28.50
2C39A	24.75
2C39AX	97.50
2C39BA	36.00
2C39BAX	101.25
2D21	1.80
2D21W	3.75
2J42	270.00
2J42-A	375.00
2J42H	292.50
2J55	375.00
2K25	66.75
2M53	93.75
2M66	86.25
2M88	116.25
2M131	210.00
3B22/1C	16.25
3B24	11.75
3B24W	11.75
3B24WA	11.75
3B24WB	11.75
3B28	8.50
3B29	37.00
3B29W	40.75
3C23	13.00
3C45	39.00
4B32	13.50
4C35	94.00
4CS250H	73.75
4CX250BNL	29.50
4CX250K	86.50
4CX250R/758W	38.75
4CX350F/8322	47.50
4J52-A	720.00
4X150A/7034	26.50
4X150D/7035	31.50
4X500A	223.50
5-125B	100.00
5-500A	107.00
5C21	35.00
5C22	101.00
5C22AX	202.00
5CX1500A	250.00
5CX3000A	510.00
5D22	62.50
5J26	1975.00
5J26JAN	1710.00
5R4GYB	2.80
6AK5W/5654	3.60
6AK5WB	6.45
6AL5W/5726	3.45
6A57GA	6.15
6C4WA	3.30
6C21	140.00
6DJ8/ECC88	2.40
6Q4/EC80	12.50
6R4/EC81	8.75
C24/5762	350.00
12AX7WA	6.50
17D7GH/L	P.O.R.
25T	65.00
35T	52.00
54AVP	225.00
54UVP	1450.00
56AVP	260.00
56CVP	435.00
56DUVP	735.00
56DUVP-03	815.00
56DVP	340.00
56DVP-03	440.00
56TUVP	935.00
56TVP	565.00
58CG	19.50
58CV	19.50
60DVP	2200.00
72	12.25
75NB3	21.50
75NTB3	31.50
75TH	71.00
75TL	71.00
76NB3	28.00
78L	70.00
79L	85.00
82D14GH/L	130.00
82D14GH/L/08	151.50
85NB3	32.00
90AV	7.10
90CG	7.30
90CV	12.00
90NB3	32.00
90NB4	32.00
92AV	10.70
100	305.00
100LB	87.00
100NB	63.00
100TH	135.00
100TL	135.00
102A	245.00
120N	90.00
120NB	98.50
150AVP	95.00
150CVP	165.00
150N	87.50
152TH	150.00
152TL	150.00
153C	90.00
155N	76.50
160G	75.00
161G	95.00
163G	95.00
171G	165.00
172	250.00
175A	127.00
199	425.00
200	340.00
200CB	80.00
200HB	80.00
200LB	105.00
200NB	65.00
203	21.25
25DR	57.00
250TH	85.00
254W	57.00
264	520.00
284	495.00
290	560.00
290A	570.00
300PC-452	225.00
303PC-331	235.00
304TH	110.00
304TL	110.00
310PC-310	225.00
322	26.25
323B	16.25
354A	40.75
355A	40.75
356	935.00
371B	24.25
393A	16.25
414	460.00
450TH	113.00
450TL	113.00
481B	16.25
501RA	450.00
548BLY	15.48
550BLY	29.70
550N	95.00
554N	95.00
560N	150.00
572B/T160L	26.50
575A	24.00
576A	40.75
577W	52.00
592/3-200A3	69.00
604	20.00
604L	21.75
606	30.50
606L	33.00
610	15.50
615	14.00
616	17.75
617	16.50
619	14.50
623	21.25
625	57.25
627	59.25
632B	38.50
635	19.00
635L	20.00
635P	20.00
649/5834	17.25
651	126.00
652	84.00
653/5835	26.00
653B	420.00
655	334.00
660	26.50
660L/7786	25.25
660P	27.50
664L	41.75
672A	46.95
673	21.25
676	66.50
677	87.25
678	57.00
679	260.00
681	69.00
682	69.00
686	69.00
688	
710	14.25
710A	21.25
710AL	26.75
710L	16.50
714	14.00
715	10.50
716	14.75
718	130.00
725-A	225.00
730	34.50
732	385.00
734/5544	34.50
740/6856	30.00
740L/7022	31.50
740P/6857	31.50
741	50.00
760/6858	33.00
760L	36.00
760P/6859	34.50
761	69.50
770L	70.75
770P	70.75
780	125.00
807	4.10
810	60.00
811A	15.50
812A	15.50
813	38.50
829B	41.75
832A	30.00
833A	80.00
836	14.75
838	39.75
845W	68.50
857B	275.00
866A	4.60
866AX	19.00
869B	155.00
869BL	155.00
872A	11.75
872AX	48.00
873	28.25
880	880.00
889R	585.00
889RA	585.00
891	685.00
891R	960.00
892	650.00
892R	900.00
912NB3	55.00
912NB4	57.50
967	10.50
1000T	285.00
1500T	500.00
1701	10.50
2000T	500.00
2050A	2.85
3200	935.00
3545	17.00
3546PW	17.00
3554	33.50
5530	890.00
5530H	890.00
5531	1100.00
5541	1100.00
5575/100	305.00
5576	340.00
5586	727.50
5586JAN	787.50
5604	835.00
5606	450.00
5606A	405.00
5619	635.00
5632/C3J	14.75
5654/6AK5W	3.60
5657	765.00
5657JAN	825.00
5658	880.00
5665/C16J	68.75
5666	425.00
5667/889R	585.00
5668	490.00
5669	775.00
5670	3.60
5686	5.00
5687	5.40
5687WA	5.95
5720	45.85
5725	4.25
5726/6AL5W	3.45
5727/2D21W	3.75
5736	258.00
5749	3.80
5750/6BE6W	4.90
5751	3.65
5759	450.00
5762/7C24	350.00
5771/356	935.00
5814A	3.40
5823/Z900T	6.35
5834/649	17.25
5835/653	26.00
5842COMM	11.75
5842JAN	14.90
5847AJAN	16.00
5847COMM	11.95
5855	148.00
5861/EC-55	112.50
5866	49.50
5866A	59.00
5867A	74.25
5868	113.00
5869	38.75
5870	197.00
5874A	775.00
5877	34.50
5894	38.75
5894A	44.50
5894B	55.10
5894JAN	55.10
5895	36.50
5918A	1435.00
5920/E90CC	11.75
5923	400.00
5924A	410.00
5957	88.00
5958	75.00
5963	2.30
6005	4.60
6007	9.80
6008/DF67	7.75
6011/710	14.25
6014/C1K	15.75
6027HYJ 1060	
6072A	4.80
6075	335.00
6076	395.00
6076A	370.00
6078	7590.00
6079	183.00
6080	6.75
6083	60.75
6084/E80F	11.65
6085/E80CC	14.25
6136/6AU6WA	4.00
6146A	7.50
6146B	7.50
6155	53.00
6156	58.00
6159	10.60
6159B	12.50
6189/12AU7WA	4.50
6189A	17.35
6197	3.55
6201/E81CC	8.30
6202	3.90
6211A	3.15
6216	6.90
6227/E80L	17.00
6252	50.75
6252JAN	62.10
6268/4C35A	94.00
6279/5C22	101.00
6293	18.50
6339	39.75
6350	2.95
6360	8.30
6360A	8.75
6360JAN	9.20
6399	220.00
6400	233.00
6400A	233.00
6420	605.00
6421	720.00
6421F	720.00
6422	645.00
6423	795.00
6423F	820.00
6424	710.00
6425	895.00
6425F	945.00
6426	970.00
6427	1305.00
6442	74.25
6463	3.70
6508	204.00
6623	260.00
6660	2.25
6661	2.70
6662	2.65
6664	2.50
6669	2.15
6676	2.15
6677	3.25
6678	2.55
6679	2.30
6680	2.00
6681	1.85
6686/E81L	11.30
6688A	9.80
6688B	22.50
6688COMM	7.36
66688JAN	12.65
6689/E83F	12.85
6693	130.00
6696	1435.00
6696A	1435.00
6697	1795.00
6697A	1795.00
6786	505.00
6800A	540.00
6807	47.00
6808	48.25
6809	53.50
6855/716	14.75
6856/740	30.00
6857/740P	31.50
6858/760	33.00
6859/760P	34.50
6860/C6JP	36.50
6883B/8032A/8552	12.70

Prices subject to change or withdrawal without notice.

Amperex® Industrial Tubes

INDUSTRIAL TUBES (CONTINUED)

Amperex Type	Net Each
6884	79.00
6894	27.00
6895	27.00
6907	50.25
6907JAN	65.50
6922COMM	5.71
6922JAN	7.70
6923/EA52	25.00
6925	265.00
6926	235.00
6926J	245.00
6930/635P	20.00
6939	16.75
6939 Gold Pin	19.75
6939JAN	17.50
6960A	240.00
6961A	375.00
6979	42.50
6989/C6JKL	37.50
6989-Ne	36.00
7007	1365.00
7014/604	20.00
7015/604L	21.75
7016/606	30.50
7017/606L	33.00
7018/615	14.00
7019/635	19.00
7020/635L	20.00
7021/714	14.00
7022/740L	31.50
7023/760L	36.00
7034/4X150A	26.50
7035/4X150D	31.50
7062/E180CC	10.30
7090	431.25
7092	208.00
7119/E182CC	16.25
7136	130.00
7151	970.00
7167	2.00
7171	73.00
7190	64.00
7191	64.00
7211	50.00
7237A	335.00
7289/3CX100A5	41.25
7289AX	102.75
7308COMM	8.50
7308JAN	9.40
7320/E84L	16.50
7321/C6JL	34.75
7363	21.50
7377	40.50
7378	115.00
7410	13.75
7459	350.00
7518/710L	16.50
7527A	74.00
7534/E130L	52.90
7580W/4CX250R	38.75
7580WJAN	42.75
7643/E80CF	14.95
7645	19.50
7693/E90F	11.85
7694/E99F	11.80
7699	16.50
7709/Z70W	5.40
7710/Z70U	4.50
7714/Z805U	7.50
7719	18.25
7721	56.40
7722/E280F	21.50
7723/610	15.50
7723-Ne	18.25
7725/710A	21.25
7726/710AL	26.75
7737COMM	9.90
7737JAN	10.80
7753	495.00
7786/660L	25.25
7788COMM	17.50
7788JAN	30.75
7804	1095.00
7805	965.00
7806	1895.00
7807	1255.00
7815/3CPN10A5	51.75
7836	84.50
7843	72.00
7854	54.70
7855	44.00
7855K	44.00
7855KAL	45.50
7900	350.00
7983	26.75
7986/5866A	59.00
7998	215.00
7998P	219.00
8000	64.75
8008	12.00
8008AX	48.00
8020/8020W	20.50
8042	20.50
8078	186.00
8094/199	425.00
8108/EC-157	525.00
8116	65.00
8116A	77.50
8116JAN	101.50
8117	78.00
8117A	78.10
117JAN	92.50
8119	625.00
8120	625.00
8146A	1135.00
8146AV	1265.00
8147A	1390.00
8205	970.00
8208	610.00
8233COMM	25.00
8223/E288CC	31.35
8233JAN	44.70
8255/E88C	16.85
8268	520.00
8269	620.00
8270	182.00
8295A/172	250.00
8300	42.50
8322/4CX350F	47.50
8333	1165.00
8348	18.75
8352/4CX1000K	275.00
8360	101.00
8370	100.00
8403	71.50
8408	38.50
8416	12.50
8436/EC-158	742.50
8438/4-400A	73.00
8438A/4-400AX	79.00
8457	6.00
8458	17.90
8463	19.90
8482	172.00
8505	41.75
8509	52.50
8556/EC8010	12.45
8560AS	42.50
8576/264	520.00
8577	20.25
8579	62.75
8591	1080.00
8592	455.00
8593	610.00
8594	1370.00
8595	19.50
8603	56.25
8624	49.50
8639	128.50
8643	74.50
8666	1125.00
8668	910.00
8670A	405.00
8680	4960.00
8683	43.75
8731	620.00
8732	505.00
8733	590.00
8734	1190.00
8735	1775.00
8736	2525.00
8737	55.10
8752	3860.00
8753	28.50
8798	780.00
8798JAN	897.00
8801	1825.00
8812	1130.00
8813	1350.00
8814	785.00
8847	127.00
8867	200.00
8888	1545.00
8904	78.50
8913	2545.00
8915	2315.00
8918	12975.00
8935	1875.00
8936	1835.00
8937	2865.00
8952	1140.00
8958	1050.00
18503	27.75
18504	32.50
18505	82.00
18506	82.00
18507	175.00
18509	29.50
18511	170.00
18515	125.00
18516	125.00
18518	265.00
18526	93.00
18529	34.50
18536	115.00
18546	340.00
18550	26.50
18552	110.00
18553	185.00
18555	125.00
23728	357.00
23791	363.00
37207	385.00
37248	276.00
A-2426	36.75
D7-11	127.25
D7-190GH	67.75
D7-190GM	81.50
D7-191GH	76.25
D7-191GM	91.00
D10-160Gh	75.75
D10-160GM	91.00
D10-161Gh	83.75
D10-161GM	100.00
D13-27GH	153.75
D13-27GM	184.50
D13-27Gh/01	217.25
D13-480GH	81.50
D13-480GM	98.00
D13-481GH	88.50
D13-481GM	102.75
D13-500Gh/01	1700.00
D14-120GH	161.00
D14-120GM	190.75
D14-121GH	169.50
D14-121GM	201.50
D14-123GH	180.25
D14-160GH/09	254.50
D14-160GM/09	307.50
D14-240Gh/37	650.00
D14-251GH/08	123.25
D14-251GH	116.50
D18-120GH	424.00
DF67/6008	7.75
DG7-5	64.50
DG7-6	64.50
DG7-31	50.00
DG7-32	50.00
DH3-91	56.25
DX-206	337.50
DX-206-F	398.25
DX-260	337.50
DX-267	1665.00
DX-276	742.50
DX-285	—
DX-286	2175.00
DX-290	—
DX-332	210.00
DX-342	4485.00
DX-343	4485.00
DX345	240.00
DX-368	4225.00
DX-373/3219	637.50
DX393A	84.50
DX-423	84.50
DX427	3095.00
DX-450	4485.00
DX-452	86.25
DX-453	93.75
DX-453-A	112.50
DX-460	4485.00
DX-468	4225.00
DX-472	840.00
DX475	337.00
DX-481	3575.00
DX-482	3575.00
EA52/6923	25.00
EA53	48.00
EC-55	112.50
EC80/6Q4	12.50
EC81/6R4	8.75
EC-157	525.00
EC-158	742.00
EC8010/8556	12.45
ECC88/6DJ8	2.40
ECC2000	11.80
EFP60	20.00
E10-12GH	265.00
E10-12GM	318.00
E10-130GH	281.00
E10-130GM	328.50
E14-100Gh	212.00
E80CC/6085	14.25
E80CF/7643	14.95
E80F/6084	11.65
E80L/6227	17.00
E81CC/6201	8.30
E81L/6686	11.30
E83F/6689	12.85
E84L/7320	16.50
E86C	15.00
E88C/8255	16.85
E90CC/5920	11.75
E90F/7693	11.85
E92CC	9.75
E99F/7694	11.80
E130L/7534	52.80
E180CC/7062	10.30
E182CC/7119	16.25
E280F/7722	21.50
E288CC/8223	31.35
HF200/T200	94.50
HF300/KU23	115.00
JP-9-2.5D/F	225.00
JP-9-2.5E	240.00
JP-9-2.5H	—
JP-9-7/L	—
JP-9-15/D	375.00
JP-9-18	375.00
KS-9-20-A	66.75
KS-9-20-B	73.50
KS-9-20-D/F	73.50
KS-9-40B	255.00
KS-9-40/D	255.00
KU17	78.75
KU23	115.00
KY21A	45.75
L14-110GH/55	1484.00
M17-140W	169.50
M17-141W	212.00
M24-100W	118.75
M24-101W	139.75
M31-130W	163.25
M31-131W	184.50
M38-120W	163.25
M38-121W	184.50
MD-2901	141.75
MG13-38	1272.00
MU13-38	1272.00
MW13-38	1272.00
MY13-38	1272.00
PL260	600.00
Q13-110BA	689.00
Q13-110GU	689.00
QF-451	141.75
T160L/572B	26.50
T200	94.50
T300	115.00
TD-03-10D/E	112.50
TD-03-10G	112.50
TH150	247.00
UXCV-11	36.25
WF-409	141.75
XP1002	315.00
XP1003	725.00
XP1004	495.00
XP1005	325.00
XP1010	155.00
XP1011	155.00
XP1016	360.00
XP1017	345.00
XP1110	160.00
XP1113	145.00
XP1116	275.00
XP1117	375.00
XP1118	275.00
XP1143	3200.00
XP1180	245.00
XP1230	260.00
XP2000	130.00
XP2020	675.00
XP2030	130.00
XP2040	785.00
XP2041	925.00
XQ1240	190.00
XQ1241	105.00
XP2230	360.00
YD1300	275.00
YD1334	810.00
YD1336	810.00
YJ-1110	390.00
YJ-1120	390.00
YJ-1121	420.00
YJ-1160	840.00
YJ-1162	840.00
YJ-1183	9750.00
YJ-1191-A	1440.00
YJ-1441	495.00
YJ-1481	390.00
Z70U/7710	4.50
Z70W/7709	5.40
Z5045	36.75
Z805U/7714	7.50
Z900T/5823	6.35

GENERAL ELECTRIC Industrial Tubes

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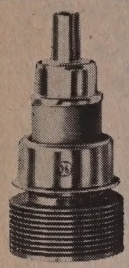
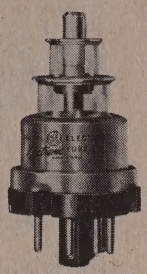

2C39B, 6897

6005/6AQ5W

7391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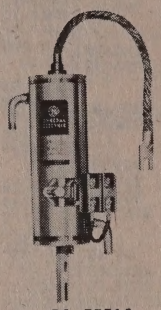

GL-5551A

GENERAL ELECTRIC TYPE	NET EACH
OA2	$ 1.75
OA3	2.05
OA4G	3.20
OB2	1.85
OB3	2.70
OC3, OD3	1.95
1P40	6.75
2B22	83.35
2C39A	35.20
2C39B	99.45
2C39BA	36.25
2C39WA	35.20
2C40A	84.30
2C42, 2C43	64.50
2C46	65.40
2D21	1.90
2E26	5.35
2J42	134.65
3B24W	12.10
3B28	12.35
3C23	13.20
3CX1000A7/ 8283	178.55
3CX2500A3/ 8161	200.00
3CX2500F3/ 8251	205.00
3CX3000A1	238.00
3CX3000F1	245.00
C3J/L	15.80
4-65A	34.80
4-250A	53.50
4-400A	58.25
4-400C	60.30
4-1000A	150.60
4CX250B	35.75
4CX300A/ 8167	65.40
4CX350A	51.90
4CX1000A/ 8168	200.00
4CX1500B	219.35
4CX3000A/ 8169	420.00
4CX5000A/ 8170	495.00
4CX15000A	695.00
4D21/4-125A	50.40
4E27/5-125B	$ 52.00
4PR60C	123.00
4X150A	25.00
4X500A	135.00
5R4GA	2.75
5R4GYB	2.95
6AK5WB*	6.45
6AN5	4.45
6AS6	4.45
6AS7GA	6.15
6C4WA*	3.30
6D4	3.65
6DJ8/ ECC88	2.70
6L6WGB	5.80
12AX7WA*	6.50
12AY7	2.65
FG-81A	50.85
83	4.95
FG-97	103.50
FG-98A	111.80
FG-105	60.10
FG-172	220.00
250R	45.40
FG-280	177.00
304TL	83.00
393A	15.40
407A	6.00
408A	5.60
GL-414	425.00
575A	25.25
610	14.00
615	11.50
672A	49.85
673	24.35
678	53.60
710/6011	14.45
710L/7518	16.55
807	6.35
810	42.85
811A	10.00
812A	8.50
813	28.50
816	5.85
829B	24.05
832A	20.30
833A	78.50
GL-858B	$ 235.00
862A	1775.00
866A	4.90
GL-869B	140.00
GL-870A	2920.00
872A/872	13.10
880	660.00
889A	292.35
892	355.35
927	10.30
930	7.15
931A	16.95
2050A/ 2050	2.85
GL-5513	880.00
5544	34.55
GL-5550	58.00
GL-5551A	75.00
GL-5551A/PC	77.00
GL-5552A	112.00
GL-5552A/PC	115.00
GL-5553B	285.00
GL-5553B/PC	290.00
GL-5554	245.00
GL-5555	370.00
GL-5556	81.00
5557	10.45
5558	19.25
5559	25.30
5560	37.15
5561	74.45
5563A	88.40
GL-5564	1110.00
5575/100/616	252.80
5576/200	262.15
5606	320.80
5606A	362.00
GL-5630	2530.00
5632/C3J	15.45
5642	3.75
5651	2.30
5654/6AK5W*	2.70
5663	3.05
5665/C16J	55.65
5670*	3.60
GL-5674	225.00
5675	11.45
5684/C3J/A	15.40
5686*	5.00
5687*	5.40
5687WA*	5.95
5687WB*	5.95
5691	11.00
5692	9.85
5693	12.20
5696A	2.45
5718	4.05
5720	45.85
5725/6AS6W*	4.25
5726/6AL5W*	2.75
5727*	3.75
5736	211.15
5749/6BA6W*	3.80
5750/6BE6W*	4.90
5751*	3.65
5763	3.00
GL-5788	800.00
5814A*	3.40
GL-5822A	132.00
GL-5822A/PC	135.00
5823	2.15
5824	5.50
5842/417A	$ 12.00
5844	2.90
5847/404A	10.70
5855	147.05
5881	3.10
5886	7.65
5894	45.95
5896	4.75
5902	4.80
5924A	367.80
5963	2.30
5964	2.40
5965A	2.80
5998A	15.40
6005/ 6AQ5W*	4.60
6012	10.30
GL-6014/C1K	14.20
6046	2.05
6072A*	4.80
6076	364.35
6080	6.75
6111	3.70
6134*	7.00
6135*	2.95
6136*	4.00
6137*	3.55
6146A	5.65
6146B/ 8298A	6.30
6161	246.00
6189/ 12AU7WA*	4.00
6197	3.55
6198A	170.00
6201*	4.05
6202*	2.95
6203*	5.10
6206	7.25
6211A	3.15
6216	4.40
GL-6228	3696.25
GL-6251	3550.00
6265*	4.85
6268	66.15
GL-6283	595.00
6299	154.40
6336A	33.05
6350	2.95
6360	5.45
6360A	6.90
6386*	10.35
6397	8.30
6442	54.05
6442AL	141.35
6463	2.15
6485	2.35
GL-6512	475.00
GL-6513	620.00
GL-6514	805.00
GL-6515	1410.00
6550A	6.95
6661/6BH6	2.70
6662/6BU6	2.65
6663/6AL5	1.95
6664/6AB4	$2.50
6669/6AQ5A	2.15
6676/6CB6A	2.15
6677/6CL6	3.25
6678/6U8A	2.55
6679/12AT7	2.30

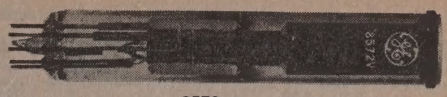
*Five Star type. /PC—indicates plastic coated.

GENERAL ELECTRIC Industrial Tubes

POWER • INDUSTRIAL RECEIVING • BROADCAST • CAMERA

GENERAL ELECTRIC TYPE	NET EACH
6680/12AU7A	$ 2.00
6681/12AX7A	1.85
6688*	9.55
6771	97.15
6807	47.00
6808	48.15
6809	53.50
6829*	6.60
6858/760	32.80
6859/760P	32.90
6883A	5.75
6883B/8032A/8552	6.70
6884	53.50
6897	83.35
6907	29.20
6922/E88CC	5.35
6939	16.40
GL-6942	1230.00
7007/6166A	1103.15
7036	1.95
7038	182.00
7044	3.40
7054	2.20
7056	1.35
7058	2.60
7059	2.20
7060	2.45
7061	2.80
7077	62.00
GL-7151	880.00
7167	2.10
GL-7171	68.00
7226	331.00
7233	3.05
7239	9.40
7262A	202.00
7263A	379.00
7266	62.85
7289/3CX100A5	40.60
7296	94.10
7325	182.00
7370	14.10
7391	105.60
GL-7399	570.00
7410	11.55
7462	66.85
7486	62.00
7551	4.60
7588	180.10
7625	68.30
7644	207.70
GL-7669	75.00
GL-7669/PC	77.00
GL-7670	86.00
GL-7671	112.00
GL-7671/PC	115.00
GL-7673	285.00
GL-7673/PC	290.00
GL-7681	180.00
GL-7681/PC	184.00
7697	170.00
7701	2.65
GL-7703	200.00
7716	2.20
7717	1.80
7720	78.25
7724	1.60
7725	21.20
7726	26.70
7735A	117.00
7735B	182.00
7735BX	374.00
GL-7736	1160.00
7768	157.20
7784	194.90
7815/3CPN10A5	27.65
7815AL	$ 41.25
7815XAL	41.25
7815/3CPN10A5	41.25
7815R	41.25
7841	67.40
Z-7856	450.00
7861*	4.35
Z-7869	1725.00
Z-7870	1775.00
Z-7870B	875.00
Z-7870X	1050.00
7905	4.65
7910	137.45
7911	188.55
Z-7911	79.00
Z-7912	587.00
7913	219.85
Z-7919	130.00
Z-7927A	812.00
Z-7927 IND.	402.00
Z-7929	389.00
Z-7933	578.00
Z-7946	1820.00
Z-7963	247.00
GL-7964	74.00
Z-7975A	812.00
Z-7975 IND.	533.00
Z-7978	1900.00
7984	6.40
Z-7996A	812.00
Z-7996 IND.	533.00
GL-7998	190.00
Z-7998	235.00
Z-7999	1625.00
8005	24.70
8008	14.15
8020	21.40
8042	25.00
8068	4.70
8077/7054	2.00
8082	82.95
8083	82.95
8102	1.90
8106	2.10
8134	210.00
8136	1.45
8156	4.65
GL-8205	880.00
8233	25.00
8295A	204.75
GL-8360	86.00
GL-8465	690.00
GL-8466	740.00
8484	182.00
8484H	194.00
GL-8500	570.00
8507	79.00
8507A	199.00
8511	331.00
8541	89.00
8541A	203.00
8541X	388.00
8572	227.00
8573	289.00
8573A	226.00
8573X	407.00
8604	326.00
8643	59.10
8683	24.65
8745	41.45
8751	238.80
GL-8866	600.00
8906	55.20
8906AL	55.20
8906XAL	55.20
8907	55.20
8907AL	55.20
8908	7.55
8950	6.30

*Five-Star type. /PC—Indicates plastic coated.



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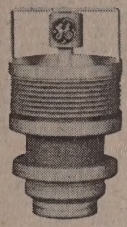


GL-6283, GL-7399

GL-710L/7518

6807

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
GE-13971	$125.25	GE-18651	$ 144.15
GE-14501	65.00	GL-37207	360.00
GE-14811	130.25	GL-37248	260.00
GE-15371	63.65	GL-51038	545.00
GE-16841	89.70	GL-51038R	600.00
GE-17241	42.40	GL-51064	1230.00
GE-17701-3	297.35		

McLEOD GAUGES

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
N-24900 AAG1	$400.00	N-24900 AEG1	$125.00
N-24900 AAG2	400.00	N-24900 AEG2	125.00

IGNITOR LEADS

GENERAL ELECTRIC TYPE	NET EACH
N-22007LC	$3.00

REED SWITCHES

GENERAL ELECTRIC		NET EACH, LOTS OF		
NEW NUMBER	OLD NUMBER	1-99	100-499	500-999★
DR302-20/40	.....	$0.80	$0.64	$0.48
DR341-10/60	.....	1.04	.83	.62
DR351-10/50	.....	1.04	.83	.62
DR401-15/55	.....	.82	.61	.41
DR401-18/38	DR145	.90	.72	.54
DR401-24/46	DR123	.82	.61	.41
DR401-32/54	DR121	.82	.61	.41
DR441-10/60	.....	1.12	.90	.67
DR442-20/50	.....	1.60	1.29	.65
DR540-30/50	.....	1.00	.80	.60
DR541-30/50	.....	1.25	1.00	.75
DR570-70/110	DR158	3.68	2.76	1.84
DR600-75/105	DR101	.52	.41	.37
DR600-30/50	DR104	.52	.41	.37
DR601-30/130	.....	1.08	.86	.75
DR601-75/105	DR113	1.08	.86	.75
DR602-40/100	.....	1.17	.93	.81
DR603-70/150	.....	3.58	2.86	2.50
DR680-80/200	DRV120	4.41	3.52	3.08
DR681-100/250	DRV161	4.73	3.78	3.30
DR682-150/300	.....	5.08	4.05	3.54
DR683-60/150	.....	4.76	3.80	3.33

★LARGER QUANTITY PRICES ON REQUEST

RAYTHEON Industrial and Power Tubes

SUBMINIATURE • SPECIAL PURPOSE • TRANSMITTING • KLYSTRONS • MAGNETRONS •

Information on types available government source inspected to applicable MIL specs available on request.

Raytheon Type	Net Each
OA2	$ 1.71
OA2WA	4.02
OA3A/OA3	1.92
OB2	1.85
OB2WA	3.18
OB3A/OB3	3.18
OC2	2.20
OC3A/OC3	2.08
OC3W	12.40
OD3A/OD3	1.94
OD3W	12.60
1AD4	7.60
1P39	9.45
1P40	7.45
ML-2C39A†	27.00
ML-2C39A‡	42.00
ML-2C39WA†	27.00
ML-2C39WA‡	42.00
ML-2C41	42.00
2D21	1.87
2G21	16.10
2G22	16.10
RK2J42*	175.00
RK2J50	600.00
RK2J51A	1000.00
RK2J55	680.00
RK2J55*	310.00
RK2J70A	570.00
RK2J70B	570.00
RK2K25	80.00
RK2K26	115.00
RK2K28	135.00
RK2K28A/6133	135.00
RK2K45	245.00
RK2K56	170.00
2X2A	6.45
3A4	3.03
3A5	4.25
RK3B22/1C	15.50
RK3B24W	12.10
RK3B24WB	13.45
3C23	17.50
ML-3CPN10A5	34.30
ML-3CX100A5	34.30
C3J/AL-Ne	25.25
C3J/L	19.35
RK4D22	118.65
RK4D32	129.35
RK4J31	810.00
RK4J32	810.00
RK4J33	810.00
RK4J34	810.00
RK4J35	810.00
5AX51	11.45
5R4GYA	2.85
5R4GYB	2.93
5R4WGA	11.58
5R4WGB	19.50
6AH6WA	8.20
6AN5	4.56
6AN5WA	11.25
6AR6	6.75
6AS6	4.43
6BL6	130.00
6BM6	130.00
6BM6A	130.00
6J4	6.40
C6J	35.50
C6J/K	37.00
C6J/L	33.95
6X4W	3.10
7AK7	9.00
7AX51	13.55
12AT7WA	3.46
12AT7WB	3.49
12AT7WC	4.05
12AY7	3.60
KY21A	46.00
RX21A	44.00
ML-102A	235.00
FG105	69.50
ML-141	175.00
ML-142	150.00
ML-322	28.60
323B	17.25
ML-356/5771	915.00
QKK381	150.00
393A	17.25
QKK404/7158	115.00
QKH456/7040	$ 9.50
CK510AX	8.20
CK512AX	12.15
CK526AX	115.00
QKK531	115.00
QKK532	9.30
CK533AX	9.30
CK534AX	115.00
QKK549	22.15
572B/T160L	25.25
RK575A	27.80
CK587	20.00
604	21.60
604L	28.60
606	21.00
606L	33.00
610/7723	15.60
615	13.90
616	17.70
617	20.50
619	14.30
623	20.00
QKK623	115.00
627	57.50
632B	39.25
635/7019	19.25
635L	20.15
635P	20.15
643	19.50
649/5834	17.20
653/5835	25.70
660	23.40
660L/7786	25.25
664L	41.75
RK673	29.05
710/6011	15.30
710L/7518	17.50
714	14.00
716	14.35
RK725A	405.00
RK726C	150.00
QKH729	810.00
QKH730	810.00
QKH731	810.00
QKH732	810.00
QKH733	810.00
734/5544	35.20
734L	36.55
740/6856	29.60
740L/7022	30.70
740P/6857	30.70
QKK752	115.00
QKK753	115.00
QKK754A	515.00
QKK755A	515.00
QKK756A	515.00
QKK758A	515.00
QKK759A	515.00
760	32.80
760L	34.00
760P	34.00
770L	70.15
770P	70.15
RK807	6.35
RK811A	9.70
RK813	36.65
QKK822	310.00
QKK826	310.00
RK829B	27.70
RK832A	22.00
QKK833A	880.00
QKK860	200.00
RK866A	560.00
QKK869	310.00
RK872A	14.80
QKK877	540.00
QKK878	915.00
ML880	850.00
884	4.43
ML-889RA	565.00
ML-891	670.00
ML-891R	885.00
ML-892	615.00
ML-892R	845.00
ML-893A	515.00
QKK910	15.15
917	13.00
918	7.10
923	10.30
927	8.85
929	$ 7.15
930	14.40
934	515.00
QKK965	515.00
QKK966	515.00
QKK967	515.00
QKK968	985.00
QKK978	9.05
CK1047	75.00
1051A	915.00
QKK1237	670.00
QKK1288A	670.00
QKK1289A	200.00
QKK1315	200.00
QKK1316	120.00
QKK1459	865.00
QKK1463	120.00
QKK1571	13.30
1614	8.15
1625	2.85
2050A/2050	14.35
2050W	7.58
CK5517	850.00
ML-5530	850.00
ML-5530H	1055.00
ML-5531	1055.00
ML-5541	58.00
5550	370.00
5555/FG238B	11.50
5557/715	21.20
5558/FG32	21.75
5559/FG57	41.75
5560/FG95	295.00
ML-5575/100	325.00
ML-5576/200	12.70
5581	15.00
5583	825.00
ML-5604	430.00
ML-5606	615.00
ML-5619	6.55
CK5636	5.70
CK5639	12.13
CK5639WA	6.85
CK5643	2.29
CK5651	2.29
CK5651A	4.50
CK5651WA	6.85
5653	2.87
CK5654	2.87
CK5654W	2.87
CK5654/6AK5W	
CK5656	28.95
RK5657	1000.00
ML-5658	850.00
5665/C16J	64.35
ML-5666	405.00
ML-5667	565.00
ML-5668	475.00
ML-5669	745.00
CK5670	3.57
CK5670W	3.57
CK5672	6.68
CK5675	16.05
CK5676	7.20
CK5678	5.40
ML-5681	3050.00
ML-5682	3550.00
ML-5682KT/8846	3845.00
5684/C3J/A	16.30
5684-Ne	4.97
CK5686	5.39
CK5687	5.90
CK5687WA	5.90
CK5687WB	11.02
CK5691	9.83
CK5692	12.20
CK5693	12.20
CK5702	14.35
CK5702WA	16.95
CK5702WB	12.80
CK5703	15.40
CK5703WA	16.10
CK5703WB	4.43
CK5718	170.00
RK5721	
CK5725	4.25
CK5725W	4.25
CK5725/6AS6W	$ 4.25
CK5726/6AL5W	2.72
CK5727/2D21W	3.74
CK5744	12.10
CK5744WA	14.45
CK5744WB	16.40
CK5749/6BA6W	3.78
CK5750/6BE6W	4.86
CK5751	3.66
CK5755	21.25
CK5763	3.00
CK5783	7.60
CK5783A	12.90
CK5783WA	11.45
CK5784	16.10
CK5784WA	18.55
CK5784WB	25.30
CK5787	7.55
CK5787A	9.80
CK5787WA	9.25
CK5814A	3.39
CK5823	2.15
CK5829	8.05
CK5829WA	14.30
RK5836	130.00
RK5837	130.00
CK5840	5.00
CK5840W	5.78
CK5842	9.25
CK5842WA	26.40
CK5844	2.90
CK5847	15.05
CK5847A	24.35
CK5875	7.35
CK5879	2.65
CK5881	3.13
CK5886	12.18
CK5889	39.70
CK5899	5.55
CK5902	4.80
CK5915	2.47
CK5963	2.31
CK5964	2.38
CK5965	2.78
CK5965A	2.78
CK5971	13.35
RK5976	115.00
CK6005/6AQ5W	4.57
6014/C1K	14.50
CK6021	5.87
CK6021W	9.05
CK6021WA	9.50
CK6029	13.35
RK6043	200.00
CK6072	4.61
CK6072A	4.78
CK6073/OA2	3.94
CK6074/OB2	4.56
CK6080	6.71
CK6080WA	12.10
CK6080WB	28.35
CK6080WC	28.35
CK6087/5Y3WGTB	10.55
CK6088	8.70
CK6110	9.75
CK6111	4.00
CK6111WA	9.50
CK6112	5.00
CK6112WA	6.70
RK6115A	130.00
CK6135	$ 2.95
CK6136/6AU6WA	4.00
CK6146	5.65
CK6146A	5.65
CK6146B/8298A	6.30
CK6146W	8.10
CK6174	8.63
RK6177	400.00
CK6186/6AG5WA	4.96
CK6189/12AU7WA	4.00
CK6201/12AT7WA	4.04
CK6202	2.95
CK6205	5.80
CK6213	10.85
CK6213A	12.10
RK6236	175.00
CK6245	16.15
CK6247	16.00
CK6247WA	37.70
ML-6256	590.00
ML-6257	610.00
ML-6258	650.00
CK6265	7.20
CK6286	8.78
CK6293	7.40
CK6293W	12.60
CK6336A	33.00
CK6336B	43.10
CK6350	2.96
CK6360	8.43
RK6390	220.00
CK6397	16.70
CK6418	7.90
CK6419	11.05
ML-6420	610.00
ML-6421	735.00
ML-6421F	770.00
ML-6422	625.00
ML-6423	760.00
ML-6423F	790.00
ML-6424	710.00
ML-6425	885.00
ML-6425F	935.00
ML-6426	945.00
ML-6427	1225.00
ML-6442	50.00
CK6476	28.30
CK6476A	28.30
CK6519	13.35
CK6528	34.85
CK6528A	43.10
CK6533	22.10
CK6533WA	36.00
CK6540	18.85
CK6542	20.70
CK6542A	21.60
CK6550	6.95
ML-6576	1495.00
CK6611	20.55
CK6612	25.10
CK6626/OA2WA	4.11
CK6627/OB2WA	2.68
CK6660/6BA6	2.23
CK6661/6BH6	2.66
CK6662/6BJ6	2.65
CK6663/6AL5	1.92
CK6669/6AQ5	2.13
CK6677/6CL6	3.22
CK6678/6U8A	2.54
CK6679/12AT7	2.30

RAYTHEON-MACHLETT INDUSTRIAL TUBES CONTINUED ON NEXT PAGE

*Foreign made. †Ceramic. ‡Glass. **Prices subject to change or withdrawal without notice.**

RAYTHEON Industrial and Power Tubes

MODULATORS • AMPLIFIERS • OSCILLATORS • RECTIFIERS • STORAGE • PHOTOSENSITIVE

Information on types available government source inspected to applicable MIL specs available on request.

Raytheon Type	Net Each	Raytheon Type	Net Each	Raytheon Type	Net Each	Raytheon Type	Net Each	Raytheon Type	Net Each
CK6680/12AU7	$ 1.96	6894	$ 27.35	ML-7560	$5465.00	CK7978	$ 23.80	ML-8533	$ 71.00
CK6681/12AX7	1.85	6895	27.35	CK7576	20.00	CK7979	30.65	ML-8534	145.00
CK6688	9.54	CK6909	24.85	ML-7668	2695.00	RK8008	14.15	ML-8535	145.00
ML-6696	1420.00	CK6910	29.10	ML-7698	50.00	RK8020	23.50	ML-8536	145.00
ML-6696A	1420.00	6989-Ne	37.30	ML-7698R	50.00	ML-8038	3100.00	ML-8537	145.00
ML-6697	1745.00	ML-7007	1225.00	7723-Ne	16.50	ML-8040	3500.00	ML-8538	135.00
ML-6697A	1745.00	RK7158/404	100.00	7786-Ne	26.20	ML-8041	3100.00	ML-8539	135.00
CK6763	9.05	ML-7209	42.00	ML-7815	34.30	ML-8094/199	410.00	ML-8795	4285.00
ML-6771	88.00	ML-7211	50.00	ML-7815/AL	37.00	CK8096	37.90	ML-8846	3845.00
CK6802	24.95	CK7246	11.95	ML-7815R	34.30	ML-8224	195.00	9001	6.82
CK6832	23.50	ML-7289	34.30	ML-7815R/AL	37.00	CK8262	25.90	9002	5.15
CK6883	5.75	ML-7479A	1335.00	ML-7855	44.00	ML-8317	5600.00	9003	7.19
CK6883B/ 8032A/8552	6.35	ML-7480	1785.00	ML-7855K	44.00	ML-8403	71.00	9005	8.05
		ML-7482	5485.00	ML-7855K/AL	45.50	CK8520	86.75	9006	3.23

PHOTOCELLS

Raytheon Type	Net Each, Lots of			Raytheon Type	Net Each, Lots of			Raytheon Type	Net Each, Lots of		
	1-99	100-499	500-999		1-99	100-499	500-999		1-99	100-499	500-999
CK1201	$1.75	$1.65	$1.50	CK1224	$1.75	$1.65	$1.50	CK1262	$2.70	$2.00	$1.80
CK1202	1.75	1.65	1.50	CK1225	1.75	1.65	1.50	CK1263	2.70	2.00	1.80
CK1203	1.75	1.65	1.50	CK1226	2.70	2.00	1.80	CK1264	2.70	2.00	1.80
CK1204	1.75	1.65	1.50	CK1241	2.70	2.00	1.80	CK1265	2.70	2.00	1.80
CK1205	1.75	1.65	1.50	CK1242	2.70	2.00	1.80	CK1266	2.70	2.00	1.80
CK1206	1.75	1.65	1.50	CK1243	2.70	2.00	1.80	CK1273-			
CK1206A	1.75	1.65	1.50	CK1244	2.70	2.00	1.80	CK1285	4.00	3.20	2.95
CK1207	1.75	1.65	1.50	CK1245	2.70	2.00	1.80	EM1502	2.70	2.00	1.80
CK1221	1.75	1.65	1.50	CK1246	2.70	2.00	1.80	EM1505	2.70	2.00	1.80
CK1222	1.75	1.65	1.50	CK1247	2.70	2.00	1.80	EM1507	2.70	2.00	1.80
CK1223	1.75	1.65	1.50	CK1261	2.70	2.00	1.80	EM1508	2.70	2.00	1.80

Cramer maintains a complete technical library on all manufacturers and their product lines. For technical problems, product availability, or latest price information:

call (617) 969-7700

Ask for your copy of our Ready Reference Line Card

GENERAL ELECTRIC / RCA / RAYTHEON

SERVICE-DESIGNED

RECEIVING TUBES

TUBES MAY BE ASSORTED TO OBTAIN QUANTITY DISCOUNTS

The receiving tubes listed below and on the following pages represent practically all types generally in demand. Many pre-World War II types are not included in order that we catalog a complete listing of new types now available. We invite your inquiries and orders for all types whether listed or not. As new types are released we will have them available. While we try to maintain complete stocks at all times, the listing of a particular type does not necessarily mean it is immediately available.

PHONE—WRITE—WIRE FOR PRICES & QUOTATIONS ON TUBES NOT LISTED.

Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
0Z4/0Z4A	$3.54	$2.95	$2.66	$2.36
1A3/DA90	4.38	3.65	3.29	2.92
1AY2A	3.69	3.08	2.77	2.46
1BC2B	2.76	2.30	2.07	1.84
1BG2	3.84	3.20	2.88	2.56
1BH2A	3.06	2.55	2.30	2.04
1BK2/1RK41	1.77	1.48	1.33	1.18
1BY2A/1AD2A	3.18	2.65	2.39	2.12
1DG3A	4.23	3.53	3.18	2.82
1DK27	2.43	2.03	1.83	1.62
1DK29	1.92	1.60	1.44	1.28
1G3GTA/1B3GT	3.00	2.50	2.25	2.00
1K3A/1J3	3.00	2.50	2.25	2.00
1L6	8.28	6.90	6.21	5.52
1N5GT	2.94	2.45	2.21	1.96
1R5	4.23	3.53	3.18	2.82
1S2A/DY87	1.83	1.53	1.38	1.22
1S5	2.46	2.05	1.85	1.64
1T4	2.82	2.35	2.12	1.88
1U4/DF904	3.15	2.63	2.37	2.10
1U5	2.76	2.30	2.07	1.84
1V2	1.80	1.50	1.35	1.20
1X2C/1BX2	3.12	2.60	2.34	2.08
2A3	6.45	5.38	4.84	4.30
2AF4B/2DZ4	3.75	3.13	2.82	2.50
2AU2	2.37	1.98	1.78	1.58
2AV2	3.33	2.78	2.50	2.22
2BN4A	3.18	2.65	2.39	2.12
2BU2/2AS2A/2AH2	3.18	2.65	2.39	2.12
2CN3B	3.30	2.75	2.48	2.20
2CW4	4.95	4.13	3.72	3.30
2CY5	4.65	3.88	3.49	3.10
2DS4	4.95	4.13	3.72	3.30
2DV4	5.13	4.28	3.85	3.42
2EG4	4.95	4.13	3.72	3.30
2EN5	1.92	1.60	1.44	1.28
2ER5/XC95	2.40	2.00	1.80	1.60
2FH5	2.40	2.00	1.80	1.60
2FS5	4.92	4.10	3.69	3.28
2GK5/2FQ5A	3.15	2.63	2.37	2.10
2GU5	3.81	3.18	2.86	2.54
2HA5	2.70	2.25	2.03	1.80
2HQ5	2.82	2.35	2.12	1.88
3A2	4.41	3.68	3.31	2.94
3A3C/3AW3/3B2	3.03	2.53	2.28	2.02
3AF4B/3DZ4	3.69	3.08	2.77	2.46
3AL5	2.61	2.18	1.96	1.74
3AT2B	2.94	2.45	2.21	1.96
3AU6	2.37	1.98	1.78	1.58
3AV6	1.92	1.60	1.44	1.28
3AW2A	3.06	2.55	2.30	2.04
3BA6	1.41	1.18	1.06	.94
3BC5/3CE5	2.43	2.03	1.83	1.62
3BL2A	3.03	2.53	2.28	2.02
3BM2	2.73	2.28	2.05	1.82
3BN2A	2.91	2.43	2.19	2.91
3BN4A	2.43	2.03	1.83	1.62
3BN6	4.14	3.45	3.11	2.76
3BW2/3BS2B/3BT2A	3.18	2.65	2.39	2.12
3BY6	2.31	1.93	1.74	1.54
3BZ6	3.03	2.53	2.28	2.02
3CA3	2.43	2.03	1.83	1.62
3CA3A	2.70	2.25	2.03	1.80
3CB6/3CF6	2.43	2.03	1.83	1.62
3CN3B	3.33	2.78	2.50	2.22
3CS6	$2.94	$2.45	$2.21	$1.96
3CU3A	3.69	3.08	2.77	2.46
3CY5	3.57	2.98	2.68	2.38
3CZ3A	3.15	2.63	2.37	2.10
3DA3/3CX3	3.33	2.78	2.50	2.22
3DB3/3CY3	3.33	2.78	2.50	2.22
3DC3	3.51	2.93	2.64	2.34
3DF3A	3.99	3.33	3.00	2.66
3DG4	5.40	4.50	4.05	3.60
3DH3	3.93	3.28	2.95	2.62
3DHH13	4.32	3.60	3.24	2.88
3DJ3	3.21	2.68	2.41	2.14
3DK6	2.94	2.45	2.21	1.96
3DR3	5.61	4.68	4.21	4.14
3DS3	5.61	4.68	4.21	4.14
3DT6A	2.67	2.23	2.01	1.78
3EH7/XF183	1.98	1.65	1.49	1.32
3EJ7/XF184	1.98	1.65	1.49	1.32
3ER5	3.15	2.63	2.37	2.10
3FH5	1.95	1.63	1.47	1.30
3FS5	4.38	3.65	3.29	2.92
3GK5	2.91	2.43	2.19	1.94
3HM5/3HA5	2.88	2.40	2.16	1.92
3HQ5	4.29	3.58	3.22	2.86
3JC6A	4.11	3.43	3.09	2.74
3KT6	2.73	2.28	2.05	1.82
3MP26	2.64	2.20	1.98	1.76
3Q4/DL95	3.54	2.95	2.66	2.36
3S4/DL92	2.04	1.70	1.53	1.36
3V4	3.66	3.05	2.75	2.44
4AU6	3.15	2.63	2.37	2.10
4AV6	2.16	1.80	1.62	1.44
4BC8	3.54	2.95	2.66	2.36
4BL8/XCF80	1.83	1.53	1.38	1.22
4BN6	2.43	2.03	1.83	1.62
4BS8	2.73	2.28	2.05	1.82
4BU8/4GS8	3.63	3.03	2.73	2.42
4BZ6	2.82	2.35	2.12	1.88
4CB6	2.19	1.83	1.65	1.46
4CE5/4BC5	1.83	1.53	1.38	1.22
4CS6	3.03	2.53	2.28	2.02
4DE6	2.22	1.85	1.67	1.48
4DK6	2.76	2.30	2.07	1.84
4DT6A	3.12	2.60	2.34	2.08
4EH7/LF183	2.70	2.25	2.03	1.80
4EJ7/LF184	2.70	2.25	2.03	1.80
4ES8/XCC189	3.54	2.95	2.66	2.36
4EW6	1.95	1.63	1.47	1.30
4GK5	2.19	1.83	1.65	1.46
4GJ7/XCF801	3.12	2.60	2.34	2.08
4GM6	2.22	1.85	1.67	1.48
4HA5/PC900	1.68	1.40	1.26	1.12
4HA7/4HC7	3.39	2.83	2.55	2.26
4HM6	2.25	1.88	1.69	1.50
4HQ5	3.36	2.80	2.52	2.24
4HS8	3.00	2.50	2.25	2.00
4HT6A	2.10	1.75	1.58	1.40
4JC6A	4.08	3.40	3.06	2.72
4JD6	3.75	3.13	2.82	2.50
4JH6	2.76	2.30	2.07	1.84
4KE8	4.95	4.13	3.72	3.30
4KT6	3.45	2.88	2.59	2.30
4LJ8	3.60	3.00	2.70	2.40
4LU6	3.81	3.18	2.86	2.54
4MK8	3.21	2.68	2.41	2.14
4MP12	2.64	2.20	1.98	1.76
4MP26	2.64	2.20	1.98	1.76
4RHH8/4KN8	4.98	4.15	3.74	3.32
5AM8	$4.53	$3.78	$3.40	$3.02
5AN8	3.69	3.08	2.77	2.46
5AQ5	3.03	2.53	2.28	2.02
5AR4/GZ34	4.08	3.40	3.06	2.72
5AS8	2.85	2.38	2.14	1.90
5AT8	3.48	2.90	2.16	2.32
5AV8	2.61	2.18	1.96	1.74
5AZ4	3.18	2.65	2.39	2.12
5B8	3.54	2.95	2.66	2.36
5BC3A	2.46	2.05	1.85	1.64
5BE8	2.01	1.68	1.51	1.34
5BK7A	3.12	2.60	2.34	2.08
5BT8	1.98	1.65	1.49	1.32
5BW8	3.72	3.10	2.79	2.48
5BZ7/5BQ7A	3.78	3.15	2.84	2.52
5CG8	3.27	2.73	2.46	2.18
5CQ8	2.64	2.20	1.98	1.76
5CZ5	2.88	2.40	2.16	1.92
5DJ4	2.37	1.98	1.78	1.58
5EA8	4.62	3.85	3.47	3.08
5ES8/YCC189	3.54	2.95	2.66	2.36
5EU8	2.91	2.43	2.19	1.94
5EW6	3.27	2.73	2.46	2.18
5FG7	4.53	3.78	3.40	3.02
5FV8/5BR8/5CL8A	3.99	3.33	3.00	2.66
5GH8A	3.54	2.95	2.66	2.36
5GJ7/LCF801	1.95	1.63	1.47	1.30
5GM6	2.67	2.23	2.01	1.78
5GS7	2.07	1.73	1.56	1.38
5GX7	3.36	2.80	2.52	2.24
5HA7	3.39	2.83	2.55	2.26
5HB7	2.25	1.88	1.69	1.50
5HG8/LCF86	2.70	2.25	2.03	1.80
5HZ6	2.37	1.98	1.78	1.58
5J6	3.39	2.83	2.55	2.37
5JK6	2.94	2.45	2.21	2.26
5JL6	2.70	2.25	2.03	1.96
5JW8	2.70	2.25	2.03	1.96
5KE8	4.95	4.13	3.72	3.30
5KZ8	3.18	2.65	2.39	2.12
5LJ8	3.33	2.78	2.50	2.22
5MB8	2.82	2.35	2.12	1.88
5T8	3.21	2.68	2.41	2.14
5U4GB/5AS4A	2.31	1.93	1.74	1.54
5U8	3.81	3.18	2.86	2.54
5U9/LCF201	3.09	2.58	2.32	2.06
5V3A/5AU4	3.12	2.60	2.34	2.08
5V4GA	3.51	2.93	2.64	2.34
5V6GT	2.40	2.00	1.80	1.60
5X8	3.00	2.50	2.25	2.00
5Y3GT	2.64	2.20	1.98	1.76
5Y4GA	2.31	1.93	1.74	1.54
5Z3	3.27	2.73	2.46	2.18
5Z4/GZ30	2.64	2.20	1.98	1.76
6A7	4.80	4.00	3.60	3.20
6AB4	3.06	2.55	2.30	2.04
6AC7	4.71	3.93	3.54	3.14
6AC10	3.45	2.88	2.59	2.30
6AD10	7.35	6.13	5.52	4.90
6AF3	3.69	3.08	2.77	2.46
6AF4	4.41	3.68	3.31	2.94
6AF6G	5.31	4.43	3.99	3.54
6AF9	4.26	3.55	3.20	2.84
6AF11	4.53	3.78	3.40	3.02
6AG5	3.51	2.93	2.64	2.34
6AG7	6.30	5.25	4.73	4.20
6AG9	5.76	4.80	4.32	3.84

ENERAL ELECTRIC / RCA / RAYTHEON

SERVICE-DESIGNED

RECEIVING TUBES

Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
6AG11	$4.77	$3.98	$3.58	$3.18
6AH4GT	2.37	1.98	1.78	1.58
6AH6	5.88	4.90	4.41	3.92
6AH9	3.87	3.23	2.91	2.58
6AK5/EF95	4.02	3.35	3.02	2.68
6AK6	2.25	1.88	1.69	1.50
6AK8/EABC80	2.13	1.78	1.60	1.42
6AK10	4.68	3.90	3.51	3.12
6AL3/EY88	1.83	1.53	1.38	1.22
6AL5/EAA91	2.61	2.18	1.96	1.74
6AL7GT	5.31	4.43	3.99	3.54
6AL11	5.31	4.43	3.99	3.54
6AM4	8.13	6.78	6.10	5.42
6AM8A	4.41	3.68	3.31	2.94
6AN4, A	3.99	3.33	3.00	2.66
6AN8A	3.63	3.03	2.73	2.42
6AQ5A/6HG5	2.55	2.13	1.92	1.70
6AQ6	2.37	1.98	1.78	1.58
6AQ7GT	3.90	3.25	2.93	2.60
6AQ8/ECC85	1.95	1.63	1.47	1.30
6AR5	1.62	1.35	1.22	1.08
6AR8	5.67	4.73	4.26	3.78
6AR11	4.83	4.03	3.63	3.22
6AS5	3.27	2.73	2.46	2.18
6AS8	4.95	4.13	3.72	3.30
6AS11	5.85	4.88	4.39	3.90
6AT6/EBC90	1.53	1.28	1.15	1.02
6AT8A	4.29	3.58	3.22	2.86
6AU4GTA	3.93	3.28	2.95	2.62
6AU5GT	4.83	4.03	3.63	3.22
6AU8A	4.29	3.58	3.22	2.86
6AV5GA	4.41	3.68	3.31	2.94
6AV6	2.22	1.85	1.67	1.48
6AV11	3.48	2.90	2.61	2.32
6AW8A	3.39	2.83	2.55	2.26
6AX3	2.76	2.30	2.07	1.84
6AX4GTB	3.03	2.53	2.28	2.02
6AX5GT	3.81	3.18	2.86	2.54
6AY3B/6BS3A	3.03	2.53	2.28	2.02
6AY11	6.21	5.18	4.66	4.14
6AZ8	4.59	3.83	3.45	3.06
6B8	4.11	3.43	3.09	2.74
6B10	3.66	3.05	2.75	2.44
6BA3	1.86	1.55	1.40	1.24
6BA6/EF93	2.67	2.23	2.01	1.78
6BA7	4.98	4.15	3.74	3.32
6BA8A	4.23	3.53	3.18	2.82
6BA11	3.69	3.08	2.77	2.46
6BC4	4.20	3.50	3.15	2.80
6BC7	3.03	2.53	2.28	2.02
6BC8/6BZ8	4.41	3.68	3.31	2.94
6BD6	1.41	1.18	1.06	.94
6BD11	4.59	3.83	3.45	3.06
6BE3A/6BZ3	3.66	3.05	2.75	2.44
6BE6	2.94	2.45	2.21	1.96
6BF5	2.43	2.03	1.83	1.62
6BF6	2.07	1.73	1.56	1.38
6BF11	4.56	3.80	3.42	3.04
6BG6GA	6.87	5.73	5.16	4.58
6BH3A	1.68	1.40	1.26	1.12
6BH6	3.03	2.53	2.28	2.02
6BH8	3.66	3.05	2.75	2.44
6BH11	3.54	2.95	2.66	2.36
6BJ3	2.61	2.18	1.96	1.74
6BJ6	3.30	2.75	2.48	2.20
6BJ7	2.52	2.10	1.89	1.68
6BJ8	3.15	2.63	2.37	2.10
6BK4C/6EL4A	5.61	4.68	4.21	3.74
6BK5	2.25	1.88	1.69	1.50
6BK7B	4.14	3.45	3.11	2.76
6BL7GTA	4.95	4.13	3.72	3.30
6BL8/ECF80	2.04	1.70	1.53	1.36
6BM8/ECL82	1.86	1.55	1.40	1.24
6BN4A	3.36	2.80	2.52	2.24
6BN8	3.12	2.60	2.34	2.08
6BN11	4.92	4.10	3.69	3.28
6BQ5/EL84	2.94	2.45	2.21	1.96
6BQ5P	5.61	4.68	4.21	3.74
6BQ6GTB/6CU6	5.01	4.18	3.76	3.34
6BR3/6RK19	3.00	2.50	2.25	2.00
6BS8	5.31	4.43	3.99	3.54
6BU8	4.14	3.45	3.11	2.76
6BV8	3.27	2.73	2.46	2.18
6BV11	4.71	3.93	3.54	3.14
6BW4	2.19	1.83	1.65	1.46
6BW8	4.26	3.55	3.20	2.84
6BW11	4.74	3.95	3.56	3.16
6BX6/EF80	1.95	1.63	1.47	1.30
6BX7GT	4.83	4.03	3.63	3.22
6BY5GA	3.12	2.60	2.34	2.24
6BY6	2.94	2.45	2.21	1.96
6BY8	$2.19	$1.83	$1.65	$1.46
6BZ6	2.34	1.95	1.76	1.56
6C4	3.15	2.63	2.37	2.10
6C5	4.17	3.48	3.13	2.78
6C6	4.71	3.93	3.54	3.14
6C9	3.90	3.25	2.93	2.60
6C10	3.54	2.95	2.66	2.36
6CA4	3.21	2.68	2.41	2.14
6CA5	2.40	2.00	1.80	1.60
6CB5A	7.23	6.03	5.43	4.82
6CB6A/6CF6	2.46	2.05	1.85	1.64
6CD6GA	5.67	4.73	4.26	3.74
6CE5/6BC5	2.37	1.98	1.78	1.58
6CG3/6CE3/6CD3/6BW3	2.97	2.48	2.23	1.98
6CG8A	3.24	2.70	2.43	2.16
6CH8	3.72	3.10	2.79	2.48
6CJ3/6DW4B	2.82	2.35	2.12	1.88
6CK4	2.61	2.18	1.96	1.74
6CL3/6CK3	3.03	2.53	2.28	2.02
6CL6	4.14	3.45	3.11	2.76
6CL8A	3.69	3.08	2.77	2.46
6CM3	3.51	2.93	2.64	2.34
6CM6	2.82	2.35	2.12	1.88
6CM7	3.42	2.85	2.57	2.28
6CM8	3.12	2.60	2.34	2.08
6CN7	4.17	3.48	3.13	2.78
6CQ8	3.75	3.13	2.82	2.50
6CR6	1.98	1.65	1.49	1.32
6CS6	3.33	2.78	2.50	2.22
6CS7	2.73	2.28	2.05	1.82
6CU5	3.30	2.75	2.48	2.20
6CU8	3.36	2.80	2.52	2.24
6CW4	5.31	4.43	3.99	3.54
6CW5/EL86	1.77	1.48	1.33	1.18
6CX8	4.77	3.98	3.58	3.18
6CY5	4.65	3.88	3.49	3.10
6CY7	3.24	2.70	2.43	2.16
6CZ5	3.45	2.88	2.59	2.30
6D10	4.71	3.93	3.54	3.14
6DA4A/6DM4A	3.03	2.53	2.02	2.02
6DB5	3.21	2.68	2.41	2.14
6DC6	2.82	2.35	2.12	1.88
6DC8/EBF89	1.85	1.53	1.38	1.22
6DE4/6CQ4	3.42	2.85	2.57	2.28
6DE6	2.67	2.23	2.01	1.78
6DE7	3.27	2.73	2.46	2.18
6DHH13	4.47	3.73	3.36	2.98
6DK6	2.94	2.45	2.21	1.96
6DL3	3.87	3.23	2.91	2.58
6DL4/EC88	4.77	3.98	3.58	3.18
6DL5/EL95	2.13	1.78	1.60	1.42
6DN3	2.82	2.35	2.12	1.88
6DN6	4.53	3.78	3.40	3.02
6DN7	3.75	3.13	2.82	2.50
6DQ4	2.22	1.85	1.67	1.48
6DQ5	6.27	5.23	4.71	4.18
6DR7	3.69	3.08	2.77	2.46
6DS4	5.31	4.43	3.99	3.54
6DS5	2.37	1.98	1.78	1.58
6DT5	2.73	2.28	2.05	1.82
6DT6A	2.64	2.20	1.98	1.76
6DT8	3.03	2.53	2.28	2.02
6DU3/6DQ3A	3.99	3.33	3.00	2.66
6DV4	4.59	3.83	3.45	3.06
6DX8/ECL84	1.77	1.48	1.33	1.18
6DZ4/6AF4A	4.41	3.68	3.31	2.94
6E5	4.77	3.73	3.36	2.98
6EA8	2.97	2.48	2.23	1.98
6EC4A/EY500	3.09	2.58	2.32	2.06
6EH4A	6.78	5.65	5.08	4.52
6EH5	2.61	2.18	1.96	1.74
6EH7/EF183	2.88	2.40	2.16	1.92
6EH8	2.85	2.38	2.14	1.90
6EJ4A	8.10	6.75	6.08	5.04
6EJ7/EF184	2.70	2.25	2.03	1.80
6EM5	3.27	2.73	2.46	2.18
6EM7/6EA7	4.26	3.55	3.20	2.84
6EN4	6.93	5.78	5.20	4.62
6EQ7	2.37	1.98	1.78	1.58
6ER5	3.06	2.55	2.30	2.04
6ES5	2.01	1.68	1.51	1.34
6ES8/ECC189	3.54	2.95	2.66	2.36
6ET7	2.61	2.18	1.96	1.74
6EU7	3.21	2.68	2.41	2.14
6EU8	3.00	2.50	2.25	2.00
6EV5	3.12	2.60	2.34	2.08
6EV7	2.16	1.80	1.62	1.44
6EW6	2.70	2.25	2.03	1.80
6EW7	4.77	3.98	3.58	3.18
6EZ5	4.14	3.45	3.11	2.76
6EZ8	$2.94	$2.45	$2.21	$1.96
6F5	4.53	3.78	3.40	3.02
6F6	4.80	4.00	3.60	3.20
6F6GT	4.80	4.00	3.60	3.20
6FA7	1.77	1.48	1.33	1.18
6FD6	2.13	1.78	1.60	1.42
6FD7	4.11	3.43	3.09	2.74
6FE5	2.04	1.70	1.53	1.36
6FG5	3.21	2.68	2.41	2.14
6FG6/EM84	2.37	1.98	1.78	1.58
6FG7	4.56	3.80	3.42	3.04
6FH5	3.63	3.03	2.73	2.42
6FH8	3.39	2.83	2.55	2.26
6FJ7	3.03	2.53	2.28	2.02
6FM7	3.48	2.90	2.61	2.32
6FM8	3.30	2.75	2.48	2.20
6FQ7/6CG7	2.25	1.88	1.69	1.50
6FS5	4.17	3.48	3.13	2.78
6FV6	3.27	2.73	2.46	2.18
6FV8A/6BR8A	4.23	3.53	3.18	2.82
6FW5	4.26	3.55	3.20	2.84
6FY5/EC97	1.92	1.60	1.44	1.28
6FY7	2.85	2.38	2.14	1.90
6G11	6.30	5.25	4.73	4.20
6GB5/EL500	2.67	2.23	2.01	1.78
6GC5	4.11	3.43	3.09	2.74
6GE5	4.32	3.60	3.24	2.88
6GF5	3.12	2.60	2.34	2.08
6GF7A	3.99	3.33	3.00	2.66
6GH8A	2.37	1.98	1.78	1.58
6GJ5A	4.41	3.68	3.31	2.94
6GJ7/ECF801	2.04	1.70	1.53	1.36
6GK5/6FQ5A	3.51	2.93	2.64	2.34
6GK6	2.82	2.35	2.12	1.88
6GL7	4.32	3.60	3.24	2.88
6GM5	2.16	1.80	1.62	1.44
6GM6	3.15	2.63	2.37	2.10
6GM8/ECC86	2.61	2.18	1.96	1.74
6GN8/6EB8	4.80	4.00	3.60	3.20
6GQ7	2.43	2.03	1.83	1.62
6GS7	2.76	2.30	2.07	1.84
6GT5A	5.19	4.33	3.90	3.46
6GU5	3.54	2.95	2.66	2.36
6GU7	3.15	2.63	2.37	2.10
6GV5	3.33	2.78	2.50	2.22
6GV8/ECL85	3.30	2.75	2.48	2.20
6GW8/ECL86	1.95	1.63	1.47	1.30
6GX7	3.66	3.05	2.75	2.44
6GY5	3.75	3.13	2.82	2.50
6GY6/6GX6	2.61	2.18	1.96	1.74
6GY8	5.31	4.43	3.99	3.54
6H6	4.53	3.78	3.40	3.02
6HB5	3.75	3.13	2.82	2.50
6HB6/6HA6	4.17	3.48	3.13	2.78
6HB7	2.91	2.43	2.19	1.94
6HD7	2.34	1.95	1.76	1.56
6HF5	7.56	6.30	5.67	5.04
6HF8	4.32	3.60	3.24	2.88
6HG8/ECF86	2.40	2.00	1.80	1.60
6HJ8	2.73	2.28	2.05	1.82
6HK5	2.52	2.10	1.89	1.68
6HL8	2.22	1.85	1.67	1.48
6HM5/6HA5	2.88	2.40	2.16	1.92
6HM6	1.98	1.65	1.49	1.32
6HQ5	3.81	3.18	2.86	2.54
6HR5	2.10	1.75	1.58	1.40
6HR6	3.54	2.95	2.66	2.36
6HS5	5.88	4.90	4.41	3.92
6HS6	2.91	2.43	2.19	1.94
6HS8	3.60	3.00	2.70	2.40
6HU6/EM87	3.12	2.60	2.34	2.08
6HU8/ELL80	3.99	3.33	3.00	2.66
6HV5A	7.08	5.90	5.31	4.72
6HZ5/6JD5	6.36	5.30	4.77	4.24
6HZ6	2.37	1.98	1.78	1.58
6J5	3.78	3.15	2.84	2.52
6J5GT	3.54	2.95	2.66	2.36
6J6A	4.41	3.68	3.31	2.94
6J7	4.62	3.85	3.47	3.08
6J11	6.06	5.05	4.55	4.04
6JA5	3.93	3.28	2.95	2.62
6JB6A	4.83	4.03	3.63	3.22
6JC5/6JB5/6HE5	3.60	3.00	2.70	2.40
6JC6A	3.39	2.83	2.55	2.26
6JC8	2.70	2.25	2.03	1.80
6JD5	6.36	5.30	4.77	4.24
6JD6	3.48	2.90	2.61	2.32
6JE6C/6LQ6	6.69	5.58	5.02	4.46
6JF6	5.49	4.58	4.12	3.66
6JG5	2.37	1.98	1.78	1.58
6JG6A	5.34	4.45	4.01	3.56

GENERAL ELECTRIC / RCA / RAYTHEON

SERVICE-DESIGNED

RECEIVING TUBES

Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
6JH5	$5.91	$4.93	$4.44	$3.94
6JH6	2.70	2.25	2.03	1.80
6JH8	5.01	4.18	3.76	3.34
6JK6	2.94	2.45	2.21	1.96
6JK8	2.85	2.38	2.14	1.90
6JM6A	4.32	3.60	3.24	2.88
6JN6	4.05	3.38	3.04	2.70
6JN8	3.00	2.50	2.25	2.00
6JQ6	3.12	2.60	2.34	2.08
6JS6C	5.58	4.65	4.19	3.72
6JT6A	4.80	4.00	3.60	3.20
6JT8	3.60	3.00	2.70	2.40
6JU6	5.67	4.73	4.26	3.78
6JU8A	3.33	2.78	2.50	2.22
6JV8/ECH84	3.60	3.00	2.70	2.40
6JW8/ECF802	2.52	2.10	1.89	1.68
6JZ6	3.81	3.18	2.86	2.54
6JZ8	2.88	2.40	2.16	1.92
6K6GT	3.27	2.73	2.46	2.18
6K7	4.47	3.73	3.36	2.98
6K11/6Q11	3.63	3.03	2.73	2.42
6KA8	3.69	3.08	2.77	2.46
6KD6	6.75	5.63	5.07	4.50
6KE8	4.59	3.83	3.45	3.06
6KG6A/EL509	6.21	5.18	4.66	4.14
6KL8	1.77	1.48	1.33	1.18
6KM6	6.75	5.63	5.07	4.50
6KM8	2.28	1.90	1.71	1.52
6KN6	5.91	4.93	4.44	3.94
6KN8/6RHH8	4.98	4.15	3.74	3.32
6KR8A	3.72	3.10	2.79	2.48
6KS6/6BN6	3.93	3.28	2.95	2.62
6KT6	3.57	2.98	2.68	2.38
6KT8	4.11	3.43	3.09	2.74
6KU8	3.12	2.60	2.34	2.08
6KV6A	5.34	4.45	4.01	3.56
6KV8	4.29	3.58	3.22	2.86
6KY8A	6.93	5.78	5.20	4.62
6KZ8	3.09	2.58	2.32	2.06
6L6	7.59	6.33	5.70	5.06
6L6GC	4.59	3.83	3.45	3.06
6L7	5.67	4.73	4.26	3.78
6LB6	6.45	5.38	4.84	4.30
6LB8	3.33	2.78	2.50	2.22
6LC8	3.45	2.88	2.59	2.30
6LE8	4.53	3.78	3.40	3.02
6LF8	4.41	3.68	3.31	2.94
6LJ6A/6LH6A	6.15	5.13	4.62	4.10
6LM8A	3.69	3.08	2.77	2.46
6LN8/LCF80	1.95	1.63	1.47	1.30
6LQ8	4.05	3.38	3.04	2.70
6LR6	6.15	5.13	4.62	4.10
6LR8	4.71	3.93	3.54	3.14
6LT8	3.27	2.73	2.46	2.18
6LU6	2.04	1.70	1.53	1.36
6LU8	3.63	3.03	2.73	2.42
6LW6	9.24	7.70	6.93	6.16
6LX6/6LF6	6.93	5.78	5.20	4.62
6LX8/LCF802	2.10	1.75	1.58	1.40
6LY8	3.15	2.63	2.37	2.10
6M11	5.52	4.60	4.14	3.68
6MB8	2.82	2.35	2.12	1.88
6MD8	4.41	3.68	3.31	2.94
6ME6	6.21	5.18	4.66	4.14
6ME8	4.89	4.08	3.67	3.26
6MF8	3.93	3.28	2.95	2.62
6MG8	1.89	1.58	1.42	1.26
6MJ8	4.20	3.50	3.15	2.80
6MK8A	3.51	2.93	2.64	2.34
6MN8	4.38	3.65	3.29	2.92
6MQ8	2.76	2.30	2.07	1.84
6MU8	4.23	3.53	3.18	2.82
6MV8	4.02	3.35	3.02	2.68
6N7	4.14	3.45	3.11	2.76
6N7GT	4.50	3.75	3.38	3.00
6RHH8/6KN8	4.98	4.15	3.74	3.32
6RP15	2.82	2.35	2.12	1.88
6RP22	6.45	5.38	4.84	4.30
6S4A	3.30	2.75	2.48	2.20
6SA7	4.08	3.40	3.06	2.72
6SA7GT	2.64	2.20	1.98	1.76
6SC7	4.41	3.68	3.31	2.94
6SF5	3.66	3.05	2.75	2.44
6SG7	4.59	3.83	3.45	3.06
6SH7	4.53	3.78	3.40	3.02
6SJ7	4.38	3.65	3.29	2.92
6SK7	4.05	3.38	3.04	2.70
6SL7GT	4.59	3.83	3.45	3.06
6SN7GTB	3.03	2.53	2.28	2.02
6SQ7	4.02	3.35	3.02	2.68
6T4	3.33	2.78	2.50	2.22
6T8A	$3.84	$3.20	$2.88	$2.56
6T9	3.48	2.90	2.61	2.32
6T10	4.23	3.53	3.18	2.82
6U5	5.01	4.18	3.76	3.34
6U8A/6AX8/6KD8/5KD8	2.94	2.45	2.21	1.96
6U9/ECF201	1.74	1.45	1.31	1.16
6U10	3.06	2.55	2.30	2.04
6V4/EZ80	1.86	1.55	1.40	1.24
6V6	5.31	4.43	3.99	3.54
6V6GTA	3.66	3.05	2.75	2.44
6V9/ECH200	1.89	1.58	1.42	1.26
6W4GTA	2.67	2.23	2.01	1.78
6W6GT/6DG6GT	3.75	3.13	2.82	2.50
6X4/EZ90	2.91	2.43	2.19	1.94
6X5GT	2.94	2.45	2.21	1.96
6X8A	3.66	3.05	2.75	2.44
6X9/ECF200	3.24	2.70	2.43	2.16
6Y6GA/6Y6G	3.63	3.03	2.73	2.42
6Y6GT	2.70	2.25	2.03	1.80
6Y9	3.51	2.93	2.64	2.34
6Z10/6J10	4.59	3.83	3.45	3.06
7AU7	2.52	2.10	1.89	1.68
7C5	2.19	1.83	1.65	1.46
7C7	2.22	1.85	1.67	1.48
7EY6	3.18	2.65	2.39	2.12
7F7	4.95	4.13	3.72	3.30
7F8	4.95	4.13	3.72	3.30
7GS7	2.94	2.45	2.21	1.96
7GV7	2.79	2.33	2.10	1.86
7HG8/PCF86	1.95	1.63	1.47	1.30
7KY6/9KX6	4.11	3.43	3.09	2.74
7N7	4.68	3.90	3.51	3.12
8AC10	4.38	3.65	3.29	2.92
8AL9	7.56	6.30	5.67	5.04
8AR11	4.92	4.10	3.69	3.28
8AU8, A	2.46	2.05	1.85	1.64
8AW8A	4.38	3.65	3.29	2.92
8B8	3.87	3.23	2.91	2.58
8B10	3.60	3.00	2.70	2.40
8BA8A	2.22	1.85	1.67	1.48
8BA11	4.50	3.75	3.38	3.00
8BH8	2.01	1.68	1.51	1.34
8BM11	4.59	3.83	3.45	3.06
8BN8	2.40	2.00	1.80	1.60
8BN11	3.81	3.18	2.86	2.54
8BQ5	3.03	2.53	2.28	2.02
8BQ11	3.96	3.30	2.97	2.64
8BU11	4.59	3.83	3.45	3.06
8CB11	5.16	4.30	3.87	3.44
8CM7	1.92	1.60	1.44	1.28
8CN7	1.83	1.53	1.38	1.22
8CS7	2.91	2.43	2.19	1.94
8CW5/XL86	1.77	1.48	1.33	1.18
8CX8	3.63	3.03	2.73	2.42
8EM5	3.00	2.50	2.25	2.00
8ET7	2.67	2.23	2.01	1.78
8FQ7/8CG7	2.25	1.88	1.69	1.50
8GJ7/PCF801	2.04	1.70	1.53	1.36
8GN8/8EB8	3.54	2.95	2.66	2.36
8GU7	2.61	2.18	1.96	1.74
8JU8A	2.73	2.28	2.05	1.82
8JV8	3.51	2.93	2.64	2.34
8KA8	3.81	3.18	2.86	2.54
8KR8	4.02	3.35	3.02	2.68
8LC8	3.51	2.93	2.64	2.34
8LT8	3.03	2.53	2.28	2.02
9A8/8A8/PCF80	1.86	1.55	1.40	1.24
9AH9	3.78	3.15	2.84	2.52
9AK10	4.02	3.35	3.02	2.68
9AM10	5.37	4.48	4.03	3.58
9AQ8/PCC85	4.62	3.85	3.47	3.08
9AU7	2.16	1.80	1.62	1.44
9BJ11	6.42	5.35	4.82	4.28
9BR7	2.04	1.70	1.53	1.36
9GH8A	3.33	2.78	2.50	2.22
9GV8/XC185	2.43	2.03	1.83	1.62
9JW8/PCF802	2.52	2.10	1.89	1.68
9KC6	2.82	2.35	2.12	1.88
9KZ8	2.16	1.80	1.62	1.44
9MHH3	2.55	2.13	1.92	1.70
9MN8	3.69	3.08	2.77	2.46
9MP12	2.64	2.20	1.98	1.76
9RA6	4.62	3.85	3.47	3.08
9RAL1	3.60	3.00	2.70	2.40
9U8A	3.03	2.53	2.28	2.02
10AL11	2.94	2.45	2.21	1.96
10BQ5	2.10	1.75	1.58	1.40
10C8	5.07	4.23	3.81	3.38
10CW5/LL86	1.77	1.48	1.33	1.18
10DE7	3.60	3.00	2.70	2.40
10DR7	$2.67	$2.23	$2.01	$1.78
10DX8/LCL84	1.95	1.63	1.47	1.30
10EG7	3.12	2.60	2.34	2.08
10EM7	3.45	2.88	2.59	2.30
10EW7	3.87	3.23	2.91	2.58
10GF7A	4.14	3.45	3.11	2.76
10GK6	3.42	2.85	2.57	2.28
10GN8	3.84	3.20	2.88	2.56
10HF8	3.93	3.28	2.95	2.62
10JA5	4.14	3.45	3.11	2.76
10JT8	4.11	3.43	3.09	2.74
10JY8	3.00	2.50	2.25	2.00
10KR8	4.08	3.40	3.06	2.72
10KU8	3.45	2.88	2.59	2.30
10LB3	2.82	2.35	2.12	1.88
10LB8	3.33	2.78	2.50	2.22
10LD6/LL802	4.41	3.68	3.31	2.94
10LE8	4.32	3.60	3.24	2.88
10LW8	4.32	3.60	3.24	2.88
10LY8	2.52	2.10	1.89	1.68
10LZ8/10JA8	3.42	2.85	2.57	2.28
10T10	5.10	4.25	3.83	3.40
10Z10	4.59	3.83	3.45	3.06
11AF9	4.26	3.55	3.20	2.84
11AR11	4.92	4.10	3.69	3.28
11BM8	3.72	3.10	2.79	2.48
11BQ11	4.92	4.10	3.69	3.28
11BT11	6.03	5.03	4.53	4.02
11CA11	7.23	6.03	5.43	4.82
11CF11	9.63	8.02	7.22	6.42
11CH11	5.73	4.78	4.30	3.82
11CY7	5.91	4.93	4.44	3.54
11DS5	3.36	2.80	2.52	2.24
11FY7	3.03	2.53	2.28	2.02
11HM7	4.29	3.58	3.22	2.86
11JE8	3.12	2.60	2.34	2.08
11KV8	4.41	3.68	3.31	2.94
11LQ8	4.32	3.60	3.24	2.88
11LT8	3.15	2.63	2.37	2.10
11MS8	3.06	2.55	2.30	2.04
11R3	2.94	2.45	2.21	1.96
11Y9/LFL200	3.12	2.60	2.34	2.08
12AB5	2.82	2.35	2.12	1.88
12AC6	1.26	1.05	.95	.84
12AC10A	4.20	3.50	3.15	2.80
12AD6	2.76	2.30	2.07	1.84
12AE6A	2.25	1.88	1.69	1.50
12AE10	5.31	4.43	3.99	3.54
12AF3/12BR3/12RK19	3.93	3.28	2.95	2.62
12AL5	2.37	1.98	1.78	1.58
12AL8	3.72	3.10	2.79	2.48
12AL11	5.25	4.38	3.94	3.50
12AQ5	2.85	2.38	2.14	1.90
12AT6	2.25	1.88	1.69	1.50
12AT7/ECC81	2.55	2.13	1.92	1.70
12AU7A/ECC82	2.31	1.93	1.74	1.54
12AV5GA	4.47	3.73	3.36	2.98
12AV6/HBC91	1.86	1.55	1.40	1.24
12AV7	4.02	3.35	3.02	2.68
12AX3	2.46	2.05	1.85	1.64
12AX4GTB	2.70	2.25	2.03	1.80
12AX7A/ECC83/7025	2.13	1.78	1.60	1.42
12AY3A/BS3A	2.37	1.98	1.78	1.58
12AY7	3.87	3.23	2.91	2.58
12AZ7A	3.48	2.90	2.61	2.32
12B4A	3.54	2.95	2.66	2.36
12BA6	2.16	1.80	1.62	1.44
12BA7	3.54	2.95	2.66	2.36
12BD6	1.38	1.15	1.04	.92
12BE3	2.79	2.33	2.10	1.86
12BE6/HK90	2.43	2.03	1.83	1.62
12BF6	1.65	1.38	1.24	1.10
12BF11	4.74	3.95	3.56	3.16
12BH7A	3.15	2.63	2.37	2.10
12BK5	2.43	2.03	1.83	1.62
12BL6	2.70	2.25	2.03	1.80
12BN6	2.76	2.30	2.07	1.84
12BQ6GA/12CU6	3.45	2.88	2.59	2.30
12BQ6GTB/12CU6	3.45	2.88	2.59	2.30
12BR3/12RK19	2.34	1.95	1.76	1.56
12BR7	2.34	1.95	1.76	1.56
12BT3	2.55	2.13	1.92	1.70
12BV11	4.62	3.85	3.47	3.08
12BY7A/12BV7/12DQ7	2.70	2.25	2.03	1.80
12BZ6	2.64	2.20	1.98	1.76
12BZ7	2.67	2.23	2.01	1.78
12C5/12CU5	3.51	2.93	2.64	2.34

GENERAL ELECTRIC / RCA / RAYTHEON

SERVICE-DESIGNED RECEIVING TUBES

Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
12CA5	$3.21	$2.68	$2.41	$2.14
12CL3	2.88	2.40	2.16	1.92
12CN5	1.95	1.63	1.47	1.30
12CR6	1.92	1.60	1.44	1.28
12CT3	2.91	2.43	2.19	1.94
12CX6	1.77	1.48	1.33	1.18
12D4	2.43	2.03	1.83	1.62
12DB5	2.07	1.73	1.56	1.38
12DK6	1.38	1.15	1.04	.92
12DQ6B/12GW6	4.20	3.50	3.15	2.80
12DS7	3.84	3.20	2.88	2.56
12DT5	2.19	1.83	1.65	1.46
12DT8	2.94	2.45	2.21	1.96
12DW7	2.01	1.68	1.51	1.34
12DY8	4.77	3.98	3.58	3.18
12ED5	1.86	1.55	1.40	1.24
12EG6	2.22	1.85	1.67	1.48
12EK6/12DZ6/12EA6	2.55	2.13	1.92	1.70
12EQ7	1.65	1.38	1.24	1.10
12F8	2.34	1.95	1.76	1.56
12FK6	1.65	1.38	1.24	1.10
12FM6	1.56	1.30	1.17	1.04
12FQ7	2.73	2.28	2.05	1.82
12FQ8	3.51	2.93	2.64	2.34
12FV7	2.04	1.70	1.53	1.36
12FX5	2.67	2.23	2.01	1.78
12FX8A	2.46	2.05	1.85	1.64
12GB3	5.61	4.68	4.21	3.74
12GC6	3.75	3.13	2.82	2.50
12GE5	4.23	3.53	3.15	2.82
12GJ5A	2.94	2.45	2.21	1.96
12GT5	4.26	3.55	3.20	2.84
12H6	3.54	2.95	2.66	2.36
12HE7	5.43	4.53	4.08	3.62
12HG7/12GN7A	4.20	3.50	3.15	2.80
12HL7	3.69	3.08	2.77	2.46
12J5GT	3.12	2.60	2.34	2.08
12J8	2.82	2.35	2.12	1.88
12JB6A	5.10	4.25	3.83	3.40
12JN6	3.18	2.65	2.39	2.12
12JN8	2.37	1.98	1.78	1.58
12JQ6	3.54	2.95	2.66	2.36
12JT6A	4.05	3.38	3.04	2.70
12K5	2.22	1.85	1.67	1.48
12L6GT	2.79	2.33	2.10	1.86
12MD8	3.54	2.95	2.66	2.36
12R5	2.16	1.80	1.62	1.44
12SA7A	4.08	3.40	3.06	2.72
12SC7	3.12	2.60	2.34	2.08
12SG7	3.84	3.20	2.88	2.56
12SJ7	3.51	2.93	2.64	2.34
12SK7	4.32	3.60	3.24	2.88
12SL7GT	4.62	3.85	3.47	3.08
12SN7GTA	3.51	2.93	2.64	2.34
12SQ7	4.02	3.35	3.02	2.68
12T10	4.68	3.90	3.51	3.12
12V6GT	3.66	3.05	2.75	2.44
12W6GT	3.99	3.33	3.00	2.66
12X4	1.89	1.58	1.42	1.26
13CW4	5.13	4.28	3.85	3.42
13DE7	3.51	2.93	2.64	2.34
13DR7	4.17	3.48	3.13	2.78
13EM7/15EA7	5.01	4.18	3.76	3.34
13FD7	3.84	3.20	2.88	2.56
13GB5/XL500	2.82	2.35	2.12	1.88
13GF7A	3.93	3.28	2.95	2.62
13JZ8	4.68	3.90	3.51	3.12
13V10	5.52	4.60	4.14	3.68
13Z10/13J10	5.10	4.25	3.83	3.40
14BL11	6.21	5.18	4.66	4.14
14BR11	4.92	4.10	3.69	3.28
14GT8	3.21	2.68	2.41	2.14
14JG8	3.15	2.63	2.37	2.10
15AF11	4.14	3.45	3.11	2.76
15BD11A	4.50	3.75	3.38	3.00
15CW5/PL84	1.74	1.45	1.31	1.16
15DQ8/PCL84	2.43	2.03	1.83	1.62
15FM7/13FM7	3.27	2.73	2.46	2.18
15FY7	3.00	2.50	2.25	2.00
15KY8A	5.49	4.58	4.12	3.66
15LE8	4.59	3.83	3.45	3.06
15MF8	3.81	3.18	2.86	2.54
16A8/PCL82	2.46	2.05	1.85	1.64
16AK9	7.59	6.33	5.70	5.06
16AQ3/XY88	1.92	1.60	1.44	1.28
16BQ11	3.84	3.20	2.88	2.56
16BX11	4.50	3.75	3.38	3.00
16GK6	2.16	1.80	1.62	1.44
16GY5	3.96	3.30	2.97	2.64
16LU8A	5.94	4.95	4.46	3.96

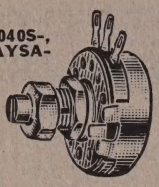
Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
17AB10/17X10	$4.50	$3.75	$3.38	$3.00
17AX3	2.13	1.78	1.60	1.42
17AX4GTA	2.91	2.43	2.19	1.94
17AY3A/17BS3A	3.03	2.53	2.28	2.02
17BB14	5.88	4.90	4.41	3.92
17BE3/17BZ3	3.03	2.53	2.28	2.02
17BF11	4.50	3.75	3.38	3.00
17BQ6GTB	3.12	2.60	2.34	2.08
17BR3/17RK19	2.46	2.05	1.85	1.64
17BW3	2.37	1.98	1.78	1.58
17C9	5.10	4.25	3.83	3.40
17CK3	2.61	2.18	1.96	1.74
17CT3	2.16	1.80	1.62	1.44
17CU5/17C5	2.52	2.10	1.89	1.68
17D4/17DM4A	3.30	2.75	2.48	2.20
17DE4	2.67	2.23	2.01	1.78
17DQ6B/17GW6	4.53	3.78	3.40	3.02
17EW8/HCC85	1.95	1.63	1.47	1.30
17GE5	3.54	2.95	2.66	2.36
17GJ5A	4.95	4.13	3.72	3.30
17GT5A	4.53	3.78	3.40	3.02
17GV5	3.42	2.85	2.57	2.28
17HB25	4.95	4.13	3.72	3.30
17JB6A	4.80	4.00	3.60	3.20
17JF6	5.52	4.60	4.14	3.68
17JM6	4.83	4.03	3.63	3.22
17JM6A	4.83	4.03	3.63	3.22
17JN6	4.32	3.60	3.24	2.88
17JQ6	3.45	2.88	2.59	2.30
17JT6A	4.59	3.83	3.45	3.06
17JZ8	2.70	2.25	2.03	1.80
17KV6A	5.82	4.85	4.37	3.88
17Z3/PY81	2.85	2.38	2.14	1.90
18A5	3.60	3.00	2.70	2.40
18AJ10	4.29	3.58	3.22	2.86
18FW6A	1.77	1.48	1.33	1.18
18FX6A	2.16	1.80	1.62	1.44
18FY6A	2.16	1.80	1.62	1.44
18GB5/LL500	3.66	3.05	2.75	2.44
18GD6A	2.13	1.78	1.60	1.42
18GV8/PCL85	3.30	2.75	2.48	2.20
18RAL1	3.54	2.95	2.66	2.36
19AU4GTA	3.54	2.95	2.66	2.36
19BG6GA	3.99	3.33	3.00	2.66
19CG3	2.97	2.48	2.23	1.98
19DE3	3.72	3.10	2.79	2.48
19DK3	3.93	3.28	2.95	2.62
19DQ3	4.26	3.55	3.20	2.84
19EA8	3.27	2.73	2.46	2.18
19EZ8	4.74	3.95	3.56	3.16
19GQ7	2.46	2.05	1.85	1.64
19HR6	1.62	1.35	1.22	1.08
19HS6	1.53	1.28	1.15	1.02
19HV8	4.05	3.38	3.04	2.70
19JN8/19CL8A	3.30	2.75	2.48	2.20
19KG8	2.01	1.68	1.51	1.34
19T8	4.98	4.15	3.74	3.32
20AQ3/LY88	2.34	1.95	1.76	1.56
20EZ7	2.43	2.03	1.83	1.52
20LF6	6.96	5.80	5.22	4.64
21GY5	3.78	3.15	2.84	2.52
21HB5A	3.63	3.03	2.73	2.42
21JS6A/23JS6A	8.61	7.18	6.46	5.74
21JV6	3.81	3.18	2.86	2.54
21JZ6	3.99	3.33	3.00	2.66
21KA6	3.66	3.50	2.75	2.44
21KQ6	7.65	6.38	5.74	5.10
21LG6A	6.18	5.15	4.64	4.12
21LR8	3.57	2.98	2.68	2.38
21LU8	3.72	3.10	2.79	2.48
22BH3A	2.25	1.88	1.69	1.50
22BW3	3.30	2.75	2.48	2.20
22DE4	3.42	2.85	2.57	2.28
22JF6	5.31	4.43	3.99	3.54
22JG6A	5.52	4.60	4.14	3.68
22JR6	5.16	4.30	3.87	3.44
22JU6	5.58	4.65	4.19	3.72
22KM6	6.15	5.13	4.62	4.10
22KV6A	5.22	4.35	3.92	3.48
23Z9	3.60	3.00	2.70	2.40
24BF11	4.50	3.75	3.38	3.00
24JZ8	3.51	2.93	2.64	2.34
24LQ6/24JE6C	6.39	5.33	4.80	4.26
25AV5GA	4.98	4.15	3.74	3.32
25AX4GT	2.13	1.78	1.60	1.42
25BB14	5.88	4.90	4.41	3.92
25BK5	2.22	1.85	1.67	1.48
25BQ6GA/25CU6	3.63	3.03	2.73	2.42
25BQ6GTB/CU6	3.63	3.03	2.73	2.42
25C5	3.03	2.53	2.28	2.02
25CA5	2.16	1.80	1.62	1.44

Tube Type	Net Each, Lots of 1-5	6-24	25-99	100-Up
25CD6GB	$5.46	$4.55	$4.10	$3.64
25CG3	2.76	2.30	2.07	1.84
25CT3	2.04	1.70	1.53	1.36
25DL3	4.26	3.55	3.20	2.84
25DN6	5.61	4.68	4.21	3.74
25E5/PL36	4.71	3.93	3.54	3.14
25EC6	6.06	5.05	4.55	4.04
25EH5	3.00	2.50	2.25	2.00
25F5A	2.70	2.25	2.03	1.80
25HX5	3.84	3.20	2.88	2.56
25JZ8	3.69	3.08	2.77	2.46
25L6GT/25W6GT	3.03	2.53	2.28	2.02
25W4GT	2.22	1.85	1.67	1.48
25Z6GT	3.30	2.75	2.48	2.20
26HU5	7.77	6.48	5.83	5.18
26LW6	8.25	6.88	6.19	5.50
26LX6	7.41	6.18	5.56	4.94
27GB5/PL500	2.64	2.20	1.98	1.76
27LF6	5.10	4.25	3.83	3.40
29GK6	2.16	1.80	1.62	1.44
29KQ6/PL521	7.05	5.88	5.29	4.70
29LE6	3.84	3.20	2.88	2.56
30AE3/PY88	2.34	1.95	1.76	1.56
30AG11	4.74	3.95	3.56	3.16
30JZ6	4.59	3.83	3.45	3.06
30KD6	5.85	4.88	4.39	3.90
31AL10	7.53	6.28	5.65	5.02
31JS6C	5.46	4.55	4.10	3.64
31LQ6	6.09	5.08	4.57	4.06
31LR8	6.51	5.43	4.89	4.34
31LZ6	6.75	5.63	5.07	4.50
32ET5A	2.16	1.80	1.62	1.44
32HQ7	7.14	5.95	5.36	4.76
33GT7	5.52	4.60	4.14	3.68
33GY7A	4.83	4.03	3.63	3.22
33JV6	3.45	2.88	2.59	2.30
34CE3/34CD3	3.21	2.68	2.41	2.14
34GD5A	2.13	1.78	1.60	1.42
34R3	2.43	2.03	1.83	1.62
35B5	2.07	1.73	1.56	1.38
35C5	2.61	2.18	1.96	1.74
35EH5	2.76	2.30	2.07	1.84
35GL6	1.74	1.45	1.31	1.16
35L6GT	4.02	3.35	3.02	2.68
35LR6	6.15	5.13	4.62	4.10
35W4	1.56	1.30	1.17	1.04
35Y4	2.97	2.48	2.23	1.98
35Z5GT	2.82	2.35	2.12	1.88
36AM3B	1.83	1.53	1.38	1.22
36KD6/49KD6	6.72	5.60	5.04	4.48
38HE7	5.52	4.60	4.14	3.68
38HK7	5.40	4.50	4.05	3.60
40KG6A/PL509	6.51	5.43	4.89	4.34
42	3.00	2.50	2.25	2.00
42EC4A/PY500	3.15	2.63	2.37	2.10
42KN6	5.49	4.58	4.12	3.66
43	4.32	3.60	3.24	2.88
45B5/UL84	1.68	1.40	1.26	1.12
50A5	3.51	2.93	2.64	2.34
50B5	2.43	2.03	1.83	1.62
50BM8/UU82	2.61	2.18	1.96	1.74
50C5	2.31	1.93	1.74	1.54
50DC4	2.01	1.68	1.51	1.34
50EH5	2.94	2.45	2.21	1.96
50FE5	2.67	2.23	2.01	1.78
50HK6	1.71	1.43	1.29	1.14
50JY6	4.20	3.50	3.15	2.80
50L6GT	3.90	3.25	2.93	2.60
50Y6GT	3.03	2.53	2.28	2.02
53HK7	6.87	5.73	5.16	4.58
60FX5	2.16	1.80	1.62	1.44
80	3.51	2.93	2.64	2.34
117Z3	3.21	2.68	2.41	2.14
5879	3.99	3.33	3.00	2.66
6267/EF86	1.68	1.40	1.26	1.12
6973	3.69	3.08	2.77	2.46
7027A	5.46	4.55	4.10	3.64
7189A	3.45	2.88	2.59	2.30
7199	4.11	3.43	3.09	2.74
7247	3.06	2.55	2.30	2.04
7355	3.81	3.18	2.86	2.54
7408	2.37	1.98	1.78	1.58
7543	2.13	1.78	1.60	1.42
7581A/KT66	5.64	4.70	4.23	3.76
7591A	1.98	1.65	1.49	1.32
7695	3.12	2.60	2.34	2.08
7868	4.11	3.43	3.09	2.74
8417	4.02	3.35	3.02	2.68
8425A/6AU6A	2.25	1.88	1.69	1.50
8426A/12AU6	2.76	2.30	2.07	1.84

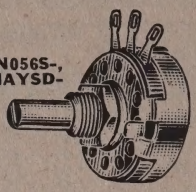
TYPE J 2¼-WATT HOT-MOLDED COMPOSITION POTENTIOMETERS

These hot-molded composition potentiometers are rated 2¼ watts at 70° C with a rotational life of over 100,000 cycles with less than 10% resistance change. Smooth adjustment with infinite resolution. Designed for continuous operation in ambient temperatures from −55° C to +120° C. Excellent for high frequency applications. Rugged, dust and splash resistant. Lockwasher and mounting nut supplied. Marked with Type and MIL numbers (Type numbers on on JA1N200P-). Case Size: ⅝" x 1 9/32" diameter. Linear Taper only.

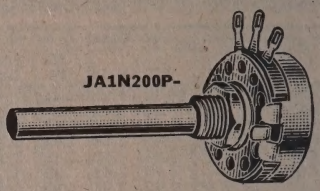
JA1L040S-, RV4LAYSA-



JA1N056S-, RV4NAYSD-



JA1N200P-



Type JA1L040S-, MIL-R-94 RV4LAYSA-: Style RV4. Slotted shaft ⅝" long x ¼" dia.; ½" lg. true-collet-action locking bushing with locking nut. Linear taper. Mounts in ⅜" hole on panels up to ⅛" thick.

Type JA1N056S-, MIL-R-94 RV4NAYSD-: Style RV4. Slotted shaft ⅞" long x ¼" dia.; ⅜" lg. plain bushing. Linear taper. Mounts in ⅜" hole on panels up to ¼" thick.

Type JA1N200P-: Plain shaft 2" long x ¼" dia.; ⅜" lg. plain bushing. Linear, CW log and CCW log tapers. For log tapers, derate power rating by 50%. Mounts in ⅜" hole on panels up to ¼" thick.

MIL-R-94 RV4LAYSA-

10% Resistance Tolerance

A-B Type No. JA1L 040S-	MIL-R-94 No. RV4-LAYSA-	Ohms	Price Code ★
500UC	500A	50	A
101UC	101A	100	A
151UC	151A	150	A
201UC	201A	200	A
251UC	251A	250	A
351UC	351A	350	A
501UC	501A	500	A
751UC	751A	750	A
102UC	102A	1.0K	A
152UC	152A	1.5K	A
202UC	202A	2.0K	A
252UC	252A	2.5K	A
352UC	352A	3.5K	A
502UC	502A	5.0K	A
752UC	752A	7.5K	A
103UC	103A	10K	A
153UC	153A	15K	A
203UC	203A	20K	A
253UC	253A	25K	A
353UC	353A	35K	A
503UC	503A	50K	A
753UC	753A	75K	A
104UC	104A	.10M	A
154UC	154A	.15M	A
204UC	204A	.20M	A
254UC	254A	.25M	A
354UC	354A	.35M	A
504UC	504A	.50M	A
754UC	754A	.75M	A
105UC	105A	1.0M	A
155UC	155A	1.5M	A
205UC	205A	2.0M	A
255UC	255A	2.5M	A
355UC	355A	3.5M	A
505UC	505A	5.0M	A

MIL-R-94 RV4NAYSD-

10% Resistance Tolerance

A-B Type No. JA1N 056S-	MIL-R-94 No. RV4-NAYSD-	Ohms	Price Code ★
500UA	500A	50	B
101UA	101A	100	B
151UA	151A	150	B
201UA	201A	200	B
251UA	251A	250	B
351UA	351A	350	B
501UA	501A	500	B
751UA	751A	750	B
102UA	102A	1.0K	B
152UA	152A	1.5K	B
202UA	202A	2.0K	B
252UA	252A	2.5K	B
352UA	352A	3.5K	B
502UA	502A	5.0K	B
752UA	752A	7.5K	B
103UA	103A	10K	B
153UA	153A	15K	B
203UA	203A	20K	B
253UA	253A	25K	B
353UA	353A	35K	B
503UA	503A	50K	B
753UA	753A	75K	B
104UA	104A	.10M	B
154UA	154A	.15M	B
204UA	204A	.20M	B
254UA	254A	.25M	B
354UA	354A	.35M	B
504UA	504A	.50M	B
754UA	754A	.75M	B
105UA	105A	1.0M	B
155UA	155A	1.5M	B
205UA	205A	2.0M	B
255UA	255A	2.5M	B
355UA	355A	3.5M	B
505UA	505A	5.0M	B

LINEAR TAPER

10% Resistance Tolerance

A-B Type No. JA1N200P-	Ohms	Price Code ★
500UA	50	B
101UA	100	B
151UA	150	B
201UA	200	B
251UA	250	B
351UA	350	B
501UA	500	B
751UA	750	B
102UA	1.0K	B
152UA	1.5K	B
202UA	2.0K	B
252UA	2.5K	B
352UA	3.5K	B
502UA	5.0K	B
752UA	7.5K	B
103UA	10K	B
153UA	15K	B
203UA	20K	B
253UA	25K	B
353UA	35K	B
503UA	50K	B
753UA	75K	B
104UA	.10M	B
154UA	.15M	B
204UA	.20M	B
254UA	.25M	B
354UA	.35M	B
504UA	.50M	B
754UA	.75M	B
105UA	1.0M	B
155UA	1.5M	B
205UA	2.0M	B
255UA	2.5M	B
355UA	3.5M	B
505UA	5.0M	B

★PRICING INFORMATION

Price Code	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250-499
A	$3.45	$2.82	$2.65	$2.46	$1.94	$1.50
B	2.80	2.30	2.21	2.10	1.71	1.32

MODIFIED LOG TAPER

10% Resistance Tolerance

A-B Type No. JA1N200P-			Price Code ★
CW Log	CCW Log	Ohms	
251AA	251BA	250	B
501AA	501BA	500	B
102AA	102BA	1.0K	B
252AA	252BA	2.5K	B
502AA	502BA	5.0K	B
103AA	103BA	10K	B
253AA	253BA	25K	B
503AA	503BA	50K	B
104AA	104BA	.10M	B
254AA	254BA	.25M	B
504AA	504BA	.50M	B

20% Resistance Tolerance

105AA	105BA	1.0M	B
255AA	255BA	2.5M	B
505AA	505BA	5.0M	B

JS-1 Switch

ADD-ON SPST SWITCH

Type JS-1 SPST Switch: MIL-R-94 approved. For use with any 2¼-watt potentiometer on this page.

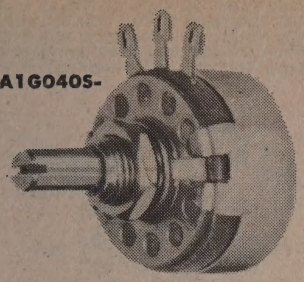
Net Each, Lots 1–9 . . **$1.53**; 10–24 . . **$1.30**
25–49 . . . . . **$1.24**; 50–99 . . . . . **$1.20**
100–249 . . . . . **$1.00**; 250–499 . . . . . **$0.77**
500 Up **$0.68**

Underwriters rated at 2 Amp., 125 V rms, 60 Hz. Also rated 10 Amp., 10 VDC non-inductive. Meets 3 Amp., 117 V MIL-R-94 specification. Switch life 5000 cycles at full rating.

TYPE J POTENTIOMETERS CONTINUED ON NEXT PAGE

TYPE J POTENTIOMETERS (CONTINUED)

JA1G040S-



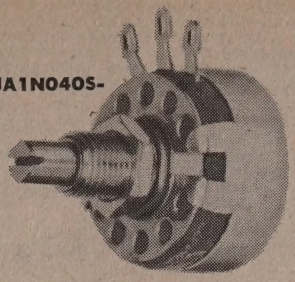
TYPE JA1G040S-

Type JA1G040S-: Slotted shaft 5/8" long x 1/4" dia.; 1/4" long plain bushing. Linear taper. Mounts in 3/8" hole on panels up to 1/8" thick.

10% TOLERANCE

A-B Type No. JA1G040S-	Ohms	Price Code*
500UA	50	A
101UA	100	A
251UA	250	A
501UA	500	A
102UA	1K	A
252UA	2.5K	A
502UA	5K	A
103UA	10K	A
253UA	25K	A
503UA	50K	A
104UA	100K	A
254UA	250K	A
504UA	500K	A
105UA	1M	A
255UA	2.5M	A
505UA	5M	A

JA1N040S-



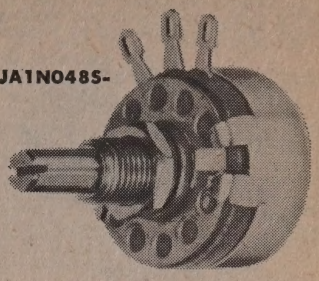
TYPE JA1N040S-

Type JA1N040S-: Slotted shaft 5/8" long x 1/4" dia.; 3/8" long plain bushing. Linear taper. Mounts in 3/8" hole on panels up to 1/4" thick.

10% TOLERANCE

A-B Type No. JA1N040S-	Ohms	Price Code*
500UA	50	A
101UA	100	A
251UA	250	A
501UA	500	A
102UA	1K	A
252UA	2.5K	A
502UA	5K	A
103UA	10K	A
253UA	25K	A
503UA	50K	A
104UA	100K	A
254UA	250K	A
504UA	500K	A
105UA	1M	A
255UA	2.5M	A
505UA	5M	A

JA1N048S-



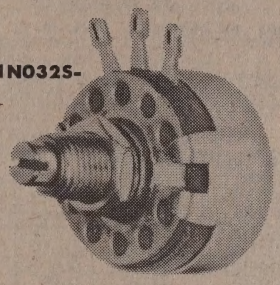
TYPE JA1N048S-

Type JA1N048S-: Slotted shaft 3/4" long x 1/4" dia.; 3/8" long plain bushing. Linear taper. Mounts in 3/8" hole on panels up to 1/4" thick.

10% TOLERANCE

A-B Type No. JA1N048S-	Ohms	Price Code*
500UA	50	A
101UA	100	A
251UA	250	A
501UA	500	A
102UA	1K	A
252UA	2.5K	A
502UA	5K	A
103UA	10K	A
253UA	25K	A
503UA	50K	A
104UA	100K	A
254UA	250K	A
504UA	500K	A
105UA	1M	A
255UA	2.5M	A
505UA	5M	A

JA1N032S-



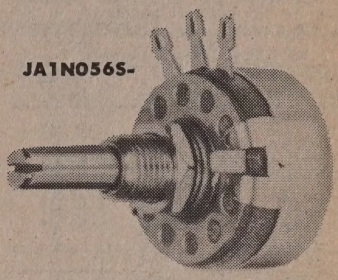
TYPE JA1N032S-

Type JA1N032S-, MIL-R-94 RV4-NAYSB-: Style RV4. Slotted shaft 1/2" long x 1/4" dia.; 3/8" long plain bushing. Linear taper. Mounts in 3/8" hole on panels up to 1/4" thick.

MIL-R-94 RV4NAYSB-
10% TOLERANCE

A-B Type No. JA1N-032S-	MIL-R-94 No. RV4-NAYSB-	Ohms	Price Code *
500UA	500A	50	A
101UA	101A	100	A
151UA	151A	150	A
201UA	201A	200	A
251UA	251A	250	A
351UA	351A	350	A
501UA	501A	500	A
751UA	751A	750	A
102UA	102A	1K	A
152UA	152A	1.5K	A
202UA	202A	2K	A
252UA	252A	2.5K	A
352UA	352A	3.5K	A
502UA	502A	5K	A
752UA	752A	7.5K	A
103UA	103A	10K	A
153UA	153A	15K	A
203UA	203A	20K	A
253UA	253A	25K	A
353UA	353A	35K	A
503UA	503A	50K	A
753UA	753A	75K	A
104UA	104A	100K	A
154UA	154A	150K	A
204UA	204A	200K	A
254UA	254A	250K	A
354UA	354A	350K	A
504UA	504A	500K	A
754UA	754A	750K	A
105UA	105A	1M	A
155UA	155A	1.5M	A
205UA	205A	2M	A
255UA	255A	2.5M	A
355UA	355A	3.5M	A
505UA	505A	5M	A

JA1N056S-



TYPE JA1N056S-

Type JA1N056S-, MIL-R-94 RV4-NAYSD-: Style RV4. Slotted shaft 7/8" long x 1/4" dia.; 3/8" long plain bushing. Modified log. taper. Mounts in 3/8" hole on panels up to 1/4" thick.

MIL-R-94 RV4NAYSD-
10% TOLERANCE

A-B Type No. JA1N-056S-	MIL-R-94 No. RV4-NAYSD-	Ohms	Price Code *
251AA	251C	250	A
351AA	351C	350	A
501AA	501C	500	A
751AA	751C	750	A
102AA	102C	1K	A
152AA	152C	1.5K	A
202AA	202C	2K	A
252AA	252C	2.5K	A
352AA	352C	3.5K	A
502AA	502C	5K	A
752AA	752C	7.5K	A
103AA	103C	10K	A
153AA	153C	15K	A
203AA	203C	20K	A
253AA	253C	25K	A
353AA	353C	35K	A
503AA	503C	50K	A
753AA	753C	75K	A
104AA	104C	100K	A
154AA	154C	150K	A
204AA	204C	200K	A
254AA	254C	200K	A
354AA	354C	350K	A
504AA	504C	500K	A
754AA	754C	750K	A
105AA	105C	1M	A
155AA	155C	1.5M	A
205AA	205C	2M	A
255AA	255C	2.5M	A
355AA	355C	3.5M	A
505AA	505C	5M	A

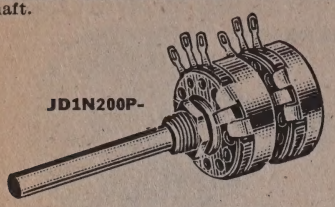
* PRICING INFORMATION

Price Code	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250-499
A	$2.80	$2.30	$2.21	$2.10	$1.71	$1.32

SEE NEXT PAGE FOR DUAL CONTROLS

DUAL CONTROLS

Product features are similar to Type J on preceding page, except with two variable resistance elements controlled by a single shaft.

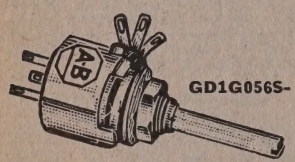


TYPE JD1N200P-

Type JD1N200P-: Dual section rated 2¼ watts with 0 watts in rear section, or 1⅓ watts in each section. Plain shaft 2″ long x ¼″ diameter, ⅜″ long plain bushing. Mounts in ⅜″ hole on panels up to ¼″ thick. Case Size: 1 17/64″ x 1 3/32″ diameter.

10% Resistance Tolerance

A-B Type No. JD1N200P-	Ohms	Price Code★
500UA	50	A
101UA	100	A
251UA	250	A
501UA	500	A
102UA	1.0K	A
252UA	2.5K	A
502UA	5.0K	A
103UA	10K	A
253UA	25K	A
503UA	50K	A
104UA	.10M	A
254UA	.25M	A
504UA	.50M	A
105UA	1.0	A
255UA	2.5M	A
505UA	5.0M	A



TYPE GD1G056S-

Type GD1G056S-: Smallest dual potentiometer available. Rated ½ watt with 0 watts in rear section or ⅓ watt in each section. MIL grade. Immersion-sealed; watertight bushing. Linear taper. Slotted shaft ⅞″ long x ⅛″ dia.; ¼″ lg. plain bushing. Mounts in ¼″ hole on panels up to ⅛″ thick. Case Size: 35/64″ x ½″ dia.

10% Resistance Tolerance

A-B Type No. GD1G056S-	Ohms	Price Code★
101UA	100	B
201UA	200	B
251UA	250	B
501UA	500	B
102UA	1.0K	B
202UA	2.0K	B
252UA	2.5K	B
502UA	5.0K	B
103UA	10K	B
203UA	20K	B
253UA	25K	B
503UA	50K	B
104UA	.10M	B
204UA	.20M	B
254UA	.25M	B
504UA	.50M	B
105UA	1.0M	B
205UA	2.0M	B
255UA	2.5M	B
505UA	5.0M	B

½-WATT COMPOSITION POTENTIOMETERS

Miniature, hot-molded composition variable resistors rated ½ watt at 70° C with a rotational life of over 50,000 cycles with less than 10% resistance change. Smooth adjustment with virtually infinite resolution. Designed for continuous operation in ambient temperatures from −55° C to +120° C. Excellent for high frequency applications. Rugged, immersion-sealed with watertight bushings. Linear taper. Lockwasher and mounting nut supplied. Case Size: 1 3/32″ x ½″ dia.

TYPE GA2G056S-, MIL-R-94 RV6NAYSD-

Types GA2G056S-, MIL-R-94 RV6-NAYSD-: Style RV6. Slotted shaft ⅞″ long x ⅛″ diameter, ¼″ long plain bushing. Mounts in ¼″ hole on panels up to ⅛″ thick. Marked with Type and MIL numbers and resistance values.

10% Resistance Tolerance

A-B Type No. GA2G 056S-	MIL-R-94 No. RV6 NAYSD-	Ohms	Price Code ★
101UA	101A	100	C
251UA	251A	250	C
501UA	501A	500	C
102UA	102A	1.0K	C
252UA	252A	2.5K	C
502UA	502A	5.0K	C
103UA	103A	10K	C
253UA	253A	25K	C
503UA	503A	50K	C
104UA	104A	.10M	C
254UA	254A	.25M	C
504UA	504A	.50M	C

20% Resistance Tolerance

105MA	105B	1.0M	D
205MA	205B	2.0M	D
255MA	255B	2.5M	D
505MA	505B	5.0M	D

TYPE WA2G056S-

Type WA2G056S-: Commercial version of the Type GA2G potentiometer described above. Marked with Type number and resistance value.

10% Resistance Tolerance

A-B Type No. WA2G056S-	Ohms	Price Code★
101UA	100	G
201UA	200	G
251UA	250	G
501UA	500	G
102UA	1.0K	G
202UA	2.0K	G
252UA	2.5K	G
502UA	5.0K	G
103UA	10K	G
203UA	20K	G
253UA	25K	G
503UA	50K	G
104UA	.10M	G
204UA	.20M	G
254UA	.25M	G
504UA	.50M	G

20% Resistance Tolerance

105MA	1.0M	H
205MA	2.0M	H
255MA	2.5M	H
505MA	5.0M	H

TYPE GA2L040S-, MIL-R-94 RV6LAYSA-

Types GA2L040S-, MIL-R-94 RV6-LAYSA-: Style RV6. Slotted shaft ⅝″ long x ⅛″ diameter, ½″ long true-collet-action locking bushing with locking nut. Mounts in ¼″ hole on panels up to ⅜″ thick. Marked with Type and MIL numbers and resistance values.

10% Resistance Tolerance

A-B Type No. GA2L 040S-	MIL-R-94 No. RV6 LAYSA-	Ohms	Price Code ★
101UC	101A	100	E
251UC	251A	250	E
501UC	501A	500	E
102UC	102A	1.0K	E
252UC	252A	2.5K	E
502UC	502A	5.0K	E
103UC	103A	10K	E
253UC	253A	25K	E
503UC	503A	50K	E
104UC	104A	.10M	E
254UC	254A	.25M	E
504UC	504A	.50M	E

20% Resistance Tolerance

105MC	105B	1.0M	F
255MC	255B	2.5M	F
505MC	505B	5.0M	F

TYPE WA2L040S-

Type WA2L040S-: Commercial version of the Type GA2L potentiometer described above. Marked with Type number and resistance value.

10% Resistance Tolerance

A-B Type No. WA2L040S-	Ohms	Price Code★
101UC	100	I
201UC	200	I
251UC	250	I
501UC	500	I
102UC	1.0K	I
202UC	2.0K	I
252UC	2.5K	I
502UC	5.0K	I
103UC	10K	I
203UC	20K	I
253UC	25K	I
503UC	50K	I
104UC	.10M	I
204UC	.20M	I
254UC	.25M	I
504UC	.50M	I

20% Resistance Tolerance

105MC	1.0M	J
205MC	2.0M	J
255MC	2.5M	J
505MC	5.0M	J

★PRICING INFORMATION

Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
A	$ 5.65	$5.14	$5.02	$4.91	$3.67	$2.83
B	10.09	7.42	6.67	5.57	4.61	4.30
C	4.50	3.75	3.15	2.25	1.95	1.65
D	4.00	3.50	3.00	2.20	1.90	1.63
E	4.80	3.90	3.50	2.35	2.05	1.71

Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
F	$4.20	$3.80	$3.30	$2.25	$2.00	$1.70
G	3.75	3.20	2.70	1.80	1.22	1.12
H	3.60	3.00	2.50	1.74	1.12	1.03
I	4.20	3.60	3.00	2.20	1.33	1.20
J	3.90	3.30	2.80	2.00	1.23	1.15

TYPES WR AND WRS HOT-MOLDED COMPOSITION VARIABLE RESISTORS—POTENTIOMETERS

Type WR for applications where space behind a panel is limited. Overall depth of unit behind panel is less than .500 inch (12,70 mm). Dia. of unit, .500". **Type WRS** offers a quality 0.5 watt device coupled with a 1.0 ampere line switch actuated at beginning of clockwise rotation. Depth behind panel including switch terminals, 1.046". Switch reduces effective electrical rotation to 275° ±5°. Units are rated 0.5 watt max. at +70° C for "U" linear taper provided voltage rating is not exceeded. Rotational life, 10% maximum change in total resistance after a 50,000 cycle life test without load. Shaft diameter, .125"; shaft length, .875" with plain bushing. Bushings have 32-NEF-2A thread, are .250" in dia. and .250" long measured from mounting surface. **Resistance tolerance, 10%.**

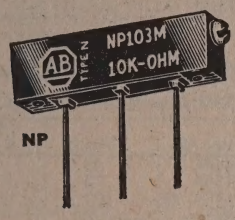
WR WRS

Price Code★	Resis. Value, Ohms	A-B Number Basic Type*	Resis. Value, Ohms	A-B Number Basic Type*	Resis. Value, Ohms	A-B Number Basic Type*
A	100	WRA1G056S101U	5K	WRA1G056S502U	250K	WRA1G056S254U
A	200	WRA1G056S201U	10K	WRA1G056S103U	500K	WRA1G056S504U
A	250	WRA1G056S251U	20K	WRA1G056S203U	1 meg	WRA1G056S105U
A	500	WRA1G056S501U	25K	WRA1G056S253U	2 meg	WRA1G056S205U
A	1K	WRA1G056S102U	50K	WRA1G056S503U	2.5 meg	WRA1G056S255U
A	2K	WRA1G056S202U	100K	WRA1G056S104U	5 meg	WRA1G056S505U
A	2.5K	WRA1G056S252U	200K	WRA1G056S204U		

*Listed is Series WR Basic Type. To order Series WRS Switch Type, change third character in A-B Number to **S**, e.g., WR**S**1G056S101U and use Price Code **B**.

TYPE N HOT-MOLDED COMPOSITION TRIMMERS

Type N: Hot-molded composition rectilinear trimmer for PC board mounting. Continuous adjustment, 25 turns. Rated ⅓ watt at 50° C. Rotational life, less than 5% resistance change after 500 cycles (25,000 revolutions of the actuating screw). Temperature range, −55° C to +100° C. Size: 1¼" lg. x ¼" w. x 2¾₄" h. Immersion-sealed. Three durable pin leads 0.028" dia. x 1⅜₂" lg. Metal actuator slotted for screwdriver adjustment. Marked with Type number and resistance value.



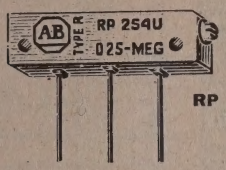
NP

10% and 20% Resistance Tolerance

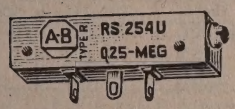
10% A-B Type No. Price Code J*	20% A-B Type No. Price Code C*	Ohms	10% A-B Type No. Price Code J*	20% A-B Type No. Price Code C*	Ohms
NP101U	NP101M	100	NP253U	NP253M	25K
NP201U	NP201M	200	NP503U	NP503M	50K
NP251U	NP251M	250	NP104U	NP104M	100K
NP501U	NP501M	500	NP204U	NP204M	200K
NP102U	NP102M	1K	NP254U	NP254M	250K
NP202U	NP202M	2K	NP504U	NP504M	500K
NP252U	NP252M	2.5K	NP105U	NP105M	1M
NP502U	NP502M	5K	NP205U	NP205M	2M
NP103U	NP103M	10K	NP505U	NP505M	5M
NP203U	NP203M	20K			

TYPE R 25-TURN TRIMMERS

Type R: Hot-molded composition rectilinear trimmer for .100" PC board mounting. 25 turns for continuous adjustment. Rated ¼ watt at 70° C. Temperature range, −55° C to −125° C. Immersion-sealed. Type RS is MIL Style RJ11AS. Rotational life, less than 5% change after 500 cycles (25,000 revolutions of the adjustment screw). Size: 1¼" lg. x ¼" w. x 2¾₄" h. Type RP has three durable pin leads 0.028" dia. x 1⅜₂" lg. Type RS has three solder lugs ⅜₂" w. x ⅝₂" lg. Metal actuator slotted for screwdriver adjustment. Type and MIL numbers marked on applicable Type RS units with ±10% resistance tolerances. Type number and resistance value marked on balance of Types RS and Type RP units.



RP



RS

10% Resistance Tolerance

A-B Type No. RP- or RS-	MIL-R-22097 No. RJ11AS-	Ohms	Price Code★
101U	101	100	D
201U	201	200	D
251U	.....	250	D
501U	501	500	D
102U	102	1.0K	D
202U	202	2.0K	D
252U	.....	2.5K	D
502U	502	5.0K	D
103U	103	10K	D
203U	203	20K	D
253U	253	25K	D
503U	503	50K	D
104U	104	.10M	D
204U	.....	.20M	D
254U	254	.25M	D
504U	504	.50M	D
105U	105	1.0M	D
205U	.....	2.0M	D
255U	.....	2.5M	D

20% Resistance Tolerance

A-B Type No. RP- or RS-	Ohms	Price Code★
101M	100	E
201M	200	E
251M	250	E
501M	500	E
102M	1.0K	E
202M	2.0K	E
252M	2.5K	E
502M	5.0K	E
103M	10K	E
203M	20K	E
253M	25K	E
503M	50K	E
104M	.10M	E
204M	.20M	E
254M	.25M	E
504M	.50M	E
105M	1.0M	E
205M	2.0M	E
255M	2.5M	E

TYPE Y SINGLE-TURN TRIMMERS

YC

YR

Type Y: Single-turn, hot-molded composition trimmer designed for use on .100" PC board. Rated ¼ watt at 70° C. Temperature range, −55° C to +100° C. Linear taper. Size: 2¾₄" h. x ½" dia. (0.540" dia. with notched actuator). Three durable pin leads 0.028" dia. x 3⅝₄" lg. Slot for screwdriver adjustment on Type YR; notched actuator for finger adjustment on Type YC. Dust-tight and splash-proof. Metal enclosure. Marked with Type number and resistance value.

10% Resistance Tolerance

A-B Type No. YC- or YR-	Ohms	Price Code★ YC	Price Code★ YR
101U	100	F	G
201U	200	F	G
251U	250	F	G
501U	500	F	G
102U	1.0K	F	G
202U	2.0K	F	G
252U	2.5K	F	G
502U	5.0K	F	G
103U	10K	F	G
203U	20K	F	G
253U	25K	F	G
503U	50K	F	G
104U	.10M	F	G
204U	.20M	F	G
254U	.25M	F	G
504U	.50M	F	G
105U	1.0M	F	G
205U	2.0M	F	G
255U	2.5M	F	G
505U	5.0M	F	G

20% Resistance Tolerance

A-B Type No. YC- or YR-	Ohms	Price Code★ YC	Price Code★ YR
101M	100	H	I
201M	200	H	I
251M	250	H	I
501M	500	H	I
102M	1.0K	H	I
202M	2.0K	H	I
252M	2.5K	H	I
502M	5.0K	H	I
103M	10K	H	I
203M	20K	H	I
253M	25K	H	I
503M	50K	H	I
104M	.10M	H	I
204M	.20M	H	I
254M	.25M	H	I
504M	.50M	H	I
105M	1.0M	H	I
205M	2.0M	H	I
255M	2.5M	H	I
505M	5.0M	H	I

★PRICING INFORMATION

Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
A	$ 5.28	$4.08	$3.28	$2.53	$1.76	$1.32
B	10.48	7.85	6.20	4.89	3.75	2.80
C	3.30	2.75	2.25	1.60	1.50	1.40
D	4.20	3.95	3.75	3.55	3.30	3.10
E	4.00	3.75	3.55	3.35	3.10	2.90

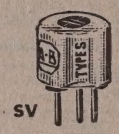
Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
F	$3.35	$2.35	$1.85	$1.75	$1.65	$1.55
G	3.10	2.10	1.60	1.50	1.40	1.30
H	3.15	2.15	1.65	1.55	1.45	1.35
I	2.90	1.90	1.40	1.30	1.20	1.10
J	3.50	2.95	2.45	1.80	1.70	1.60

TYPE F SINGLE-TURN TRIMMERS

Type F: Hot-molded composition trimmer for .100″ PC board mounting. Single turn. Rated ¼ watt at 70° C. Temp. range, −55° C to +120° C. Linear taper. Rotational life, less than 10% resistance change after 5,000 cycles. Size: ½″ dia. x 1 7/32″ h. Metal enclosure. Entire unit is immersion-sealed. Three durable pin leads 0.028″ dia. x 35/64″ lg. Slotted for screwdriver adjustment. Pin spacing .100″ x .200″. Marked with Type number and resistance value.

A-B Type No.	Ohms	Price Code★
10% Resistance Tolerance		
FR101U	100	A
FR201U	200	A
FR251U	250	A
FR501U	500	A
FR102U	1.0K	A
FR202U	2.0K	A
FR252U	2.5K	A
FR502U	5.0K	A
FR103U	10K	A
FR203U	20K	A
FR253U	25K	A
FR503U	50K	A
FR104U	.10M	A
FR204U	.20M	A
FR254U	.25M	A
FR504U	.50M	A
FR105U	1.0M	A
FR205U	2.0M	A
FR255U	2.5M	A
FR505U	5.0M	A
20% Resistance Tolerance		
FR101M	100	B
FR201M	200	B
FR251M	250	B
FR501M	500	B
FR102M	1.0K	B
FR202M	2.0K	B
FR252M	2.5K	B
FR502M	5.0K	B
FR103M	10K	B
FR203M	20K	B
FR253M	25K	B
FR503M	50K	B
FR104M	.10M	B
FR204M	.20M	B
FR254M	.25M	B
FR504M	.50M	B
FR105M	1.0M	B
FR205M	2.0M	B
FR255M	2.5M	B
FR505M	5.0M	B

TYPES SH AND SV CERMET TRIMMERS



Type S: Single-turn cermet trimmer for PC board mounting. Rated ½ watt at 85° C. Temperature range, −65° C to +150° C. Metal enclosure. Size: Type SV for vertical mounting, ⅜″ dia. x ⅜″ h.; Type SH for horizontal mounting, ⅜″ h. x ⅜″ w. x 1 7/32″ lg. Three durable 0.025″ dia. pin leads. Slot for screwdriver adjustment. Marked with Type number and resistance value. Pin spacing .100″ x .100″.

TYPE SH HORIZONTAL MOUNT

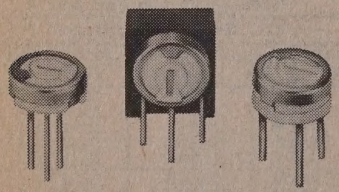
A-B Type No.	Ohms	Price Code★
10% Resistance Tolerance		
SH5001	50	C
SH7501	75	C
SH1011	100	C
SH2011	200	C
SH2511	250	C
SH5011	500	C
SH7511	750	C
SH1021	1.0K	C
SH2021	2.0K	C
SH2521	2.5K	C
SH5021	5.0K	C
SH7521	7.5K	C
SH1031	10K	C
SH2031	20K	C
SH2531	25K	C
SH5031	50K	C
SH7531	75K	C
SH1041	.10M	C
SH2041	.20M	C
SH2541	.25M	C
SH5041	.50M	C
SH7541	.75M	C
SH1051	1.0M	C

TYPE SV VERTICAL MOUNT

A-B Type No.	Ohms	Price Code★
10% Resistance Tolerance		
SV5001	50	D
SV7501	75	D
SV1011	100	D
SV2011	200	D
SV2511	250	D
SV5011	500	D
SV7511	750	D
SV1021	1.0K	D
SV2021	2.0K	D
SV2521	2.5K	D
SV5021	5.0K	D
SV7521	7.5K	D
SV1031	10K	D
SV2031	20K	D
SV2531	25K	D
SV5031	50K	D
SV7531	75K	D
SV1041	.10M	D
SV2041	.20M	D
SV2541	.25M	D
SV5041	.50M	D
SV7541	.75M	D
SV1051	1.0M	D

★PRICING INFORMATION

Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
A	$3.20	$2.20	$1.70	$1.60	$1.50	$1.40
B	3.00	2.00	1.50	1.40	1.30	1.20
C	3.75	2.75	2.00	1.75	1.65	1.55
D	3.25	2.25	1.60	1.50	1.40	1.30



A-B cermet trimmers have extremely long load and wear life. Even in severe environmental conditions they maintain their setting to give dependable performance. Leads are permanently fastened, anchored and bonded. All are MIL grade and immersion-sealed.

Type A: Miniature, single-turn cermet trimmer for PC board mounting. Rated ½ watt at 85° C. Operating Temperature: −55° C to +150° C. Resistance Tolerance: ±10% standard, others available. Taper: linear. Insulation Resistance: 1000 megohms minimum. Torque: 0.2 to 2.0 inch ounces. Rotation: 280° ± 5°.

TYPE A SINGLE-TURN TRIMMERS

Resistance Value (Ohms)	Vert. Mount .100″ Offset	Vert. Mount .070″ Offset	Hor. Mount .100″ Offset
10	A2B100	A2A100	A4B100
20	A2B200	A2A200	A4B200
50	A2B500	A2A500	A4B500
100	A2B101	A2A101	A4B101
200	A2B201	A2A201	A4B201
500	A2B501	A2A501	A4B501
1K	A2B102	A2A102	A4B102
2K	A2B202	A2A202	A4B202
5K	A2B502	A2A502	A4B502
10K	A2B103	A2A103	A4B103
20K	A2B203	A2A203	A4B203
50K	A2B503	A2A503	A4B503
100K	A2B104	A2A104	A4B104
200K	A2B204	A2A204	A4B204
500K	A2B504	A2A504	A4B504
1 meg	A2B105	A2A105	A4B105
2 meg	A2B205	A2A205	A4B205

OUR STOCKS ARE COMPLETE AND UP TO DATE.

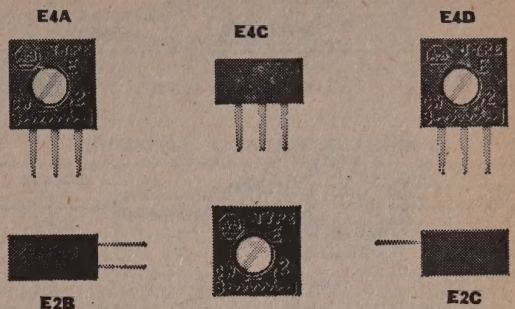
A-B Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499	2500-4999	5000-9999
A2A	$1.60	$1.54	$1.48	$1.44	$1.36	$1.28	$1.20	$1.12	$1.08	$1.04
A2B	1.98	1.88	1.78	1.70	1.64	1.58	1.48	1.38	1.28	1.24
A4B	2.40	2.30	2.22	2.16	2.04	1.92	1.80	1.68	1.62	1.56

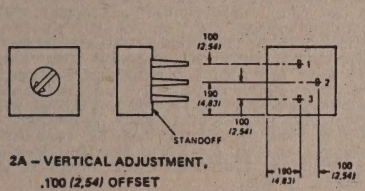
ALLEN-BRADLEY Cermet Trimmers

TYPE E SINGLE-TURN CERMET TRIMMERS

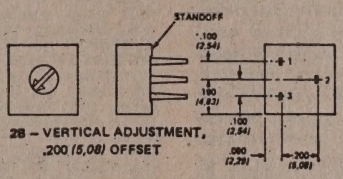
Single-turn cermet trimmers for PC board mounting. Linear taper. Rated ½ Watt at 70° C. Temperature range, −55° C to +125° C. Plastic case is immersion sealed. Terminals are .037″ x .010″ at standoff, slightly tapered and on .100″ grid spacing. Available in both vertical adjustment and horizontal adjustment types, and with in-line or offset terminals. Tolerance, ±10%.

Resistance (Ohms)	A-B Type Numbers						Price Code *
	Vertical Adj.			Horizontal Adj.			
	.100″ Offset	.200″ Offset	.150″ In-Line	.100″ Offset	.150″ In-Line	.100″ In-Line	
10	E2A100	E2B100	E2C100	E4A100	E4C100	E4D100	A
20	E2A200	E2B200	E2C200	E4A200	E4C200	E4D200	A
50	E2A500	E2B500	E2C500	E4A500	E4C500	E4D500	A
100	E2A101	E2B101	E2C101	E4A101	E4C101	E4D101	A
200	E2A201	E2B201	E2C201	E4A201	E4C201	E4D201	A
500	E2A501	E2B501	E2C501	E4A501	E4C501	E4D501	A
1K	E2A102	E2B102	E2C102	E4A102	E4C102	E4D102	A
2K	E2A202	E2B202	E2C202	E4A202	E4C202	E4D202	A
5K	E2A502	E2B502	E2C502	E4A502	E4C502	E4D502	A
10K	E2A103	E2B103	E2C103	E4A103	E4C103	E4D103	A
20K	E2A203	E2B203	E2C203	E2A203	E4C203	E4D203	A
50K	E2A503	E2B503	E2C503	E4A503	E4C503	E4D503	A
100K	E2A104	E2B104	E2C104	E4A104	E4C104	E4D104	A
200K	E2A204	E2B204	E2C204	E4A204	E4C204	E4D204	A
500K	E2A504	E2B504	E2C504	E4A504	E4C504	E4D504	A
1M	E2A105	E2B105	E2C105	E4A105	E4C105	E4D105	A
2M	E2A205	E2B205	E2C205	E4A205	E4C205	E4D205	A

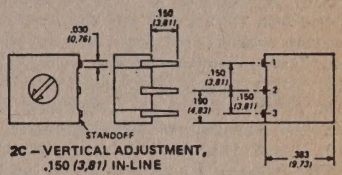




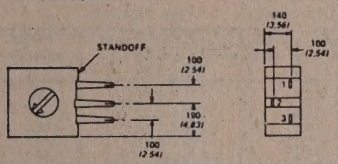
2A – VERTICAL ADJUSTMENT, .100 (2,54) OFFSET



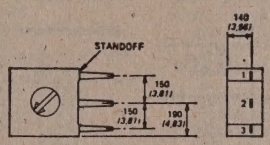
2B – VERTICAL ADJUSTMENT, .200 (5,08) OFFSET



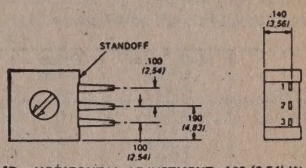
2C – VERTICAL ADJUSTMENT, .150 (3,81) IN-LINE



4A – HORIZONTAL ADJUSTMENT, .100 (2,54) OFFSET



4C – HORIZONTAL ADJUSTMENT, .150 (3,81) IN-LINE



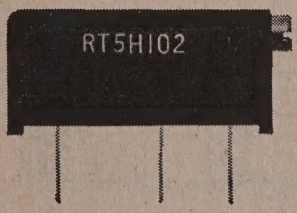
4D – HORIZONTAL ADJUSTMENT, .100 (2,54) IN-LINE

TYPE RT MULTI-TURN CERMET TRIMMERS

Cermet trimming potentiometers with a 20-turn range. Linear taper. Rated at ¾ Watt at 70° C. Temperature range, −65° C to +125° C. Plastic case is immersion sealed. Terminals are .035″ x .010″ at standoff, slightly tapered and on .100″ grid spacing for PC board mounting. **Size:** Type RT5L, .750″ l. x .190″ w. x .250″ h.; Type RT5H .750″ l. x .190″ w. x .340″ h. **Tolerance:** ±10%.

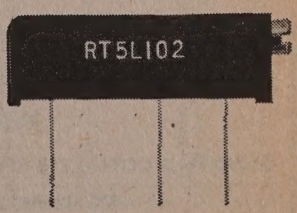
TYPE RT POTENTIOMETERS

Ohms	A-B Part Nos.		Price Code *
	RT5L-	RT5H-	
10	100	100	B
20	200	200	B
50	500	500	B
100	101	101	B
200	201	201	B
500	501	501	B
1K	102	102	B
2K	202	202	B
5K	502	502	B
10K	103	103	B
20K	203	203	B
50K	503	503	B
100K	104	104	B
200K	204	204	B
500K	504	504	B
1M	105	105	B
2M	205	205	B



RT5H-

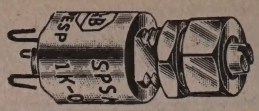
RT5L-



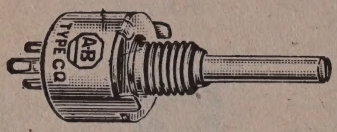
★ PRICING INFORMATION

Price Code	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250-499
A	$0.76	$0.70	$0.65	$0.63	$0.60	$0.56
B	1.40	1.30	1.21	1.19	1.15	1.08

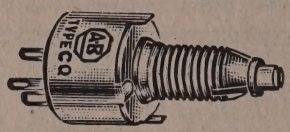
Type SPSG



Type SPSM



Type CQ2G



Type CQ2L

CERMET POTENTIOMETERS

Type SPSG—Single-turn potentiometers rated 1 watt at 70° C, derated to 0 at 150° C. Total resistance change, less than 2% after shock, vibration or moisture tests; less than 3% after temperature cycling; less than 5% total after 1,000 hours at rated load. Max. continuous working voltage, 300 V. Insulation resistance, 100 megs min. Rotation, 280° ±5° mechanical and electrical; torque, 0.5–6 in.-oz. Linear taper, 10% resistance tolerance only; ¼″ lg. plain bushing with ⅝″ lg. shaft ⅛″ dia. Marked with Type No. and nom. resistance. Supplied with hardware. **Type SPSM**—Same as above, but ⅜″ lg. locking bushing with 7/16″ lg. shaft. Both types mount in ¼″ hole. Both units have double flatted bushings. Case size, 7/16″ x ⅜″ dia.

Ohms	A-B Type SPSG 040S-	Price Code ★	A-B Type SPSM 028S-	Price Code ★
50	500U	A	500U	B
100	101U	A	101U	B
250	251U	A	251U	B
500	501U	A	501U	B
1.0K	102U	A	102U	B
2.5K	252U	A	252U	B
5.0K	502U	A	502U	B
10K	103U	A	103U	B
25K	253U	A	253U	B
50K	503U	A	503U	B
.1M	104U	A	104U	B
.25M	254U	A	245U	B
.50M	504U	A	504U	B
1.0M	105U	A	105U	B

Type CQ2G—Designed for severe environmental conditions in military and industrial equipment. Rated 0.5 watt at 125° C, derated to 0 at 175° C. Temperature range, −65° C to +175° C with temp. coefficient less than ±250 ppm/°C. Rotation, 295° ±5°. Dielectric withstanding voltage, 750 V rms at sea level. Max. continuous working voltage, 350 V rms. Total resistance change, less than 1% after low temperature test, less than 2% after shock, vibration and moisture tests, less than 3% after 1,000 hours at rated load, less than 5% after 50,000 cycle rotational test; Linear taper, 10% resistance tolerance only; ¼″ lg. plain bushing with ⅞″ lg. slotted shaft ⅛″ dia. Supplied with hardware. **Type CQ2L**—Same as above, but ½″ lg. locking bushing with ⅝″ lg. slotted shaft. Additional hardware: M-4721 mounting nut, **5c**; M-4748 lockwasher, **5c**; M-4761 locknut, **10c.** Both types mount in ¼″ hole. Case size, 1 1/32″ max. x ½″ dia.

Ohms	A-B Type CQ2G 056S-	Price Code ★	A-B Type CQ2L 040S-	Price Code ★
100	101U	C	101U	D
250	251U	C	251U	D
500	501U	C	501U	D
1.0K	102U	C	102U	D
2.5K	252U	C	252U	D
5.0K	502U	C	502U	D
10K	103U	C	103U	D
25K	253U	C	253U	D
50K	503U	C	503U	D
.10M	104U	C	104U	D
.25M	254U	C	254U	D
.50M	504U	C	504U	D
1.0M	105U	C	105U	D
2.5M	255U	C	255U	D
5.0M	505U	C	505U	D

★PRICING INFORMATION

Price Code	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
A	$ 7.60	$6.40	$5.60	$4.60	$3.40	$2.40
B	7.90	6.64	5.82	4.80	3.58	2.55
C	4.95	4.00	3.40	2.75	2.35	1.95
D	5.20	4.10	3.60	3.10	2.54	2.18

FOR INDUSTRIAL ELECTRONIC EQUIPMENT AND PARTS,

WE CAN SUPPLY ALL YOUR REQUIREMENTS,

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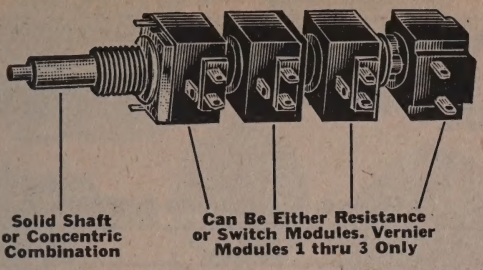
ALLEN-BRADLEY MOD POT®

MOD POT® SERIES 70 POTENTIOMETERS, SWITCHES, VERNIER DRIVE CONTROLS



Now you can obtain rapid delivery on A-B MOD POT potentiometers, switches and vernier drive controls. We have our own facilities to build almost any type of the small, ⅝" square controls which you might require. The units are available in single, dual, triple or four section controls. Just specify your needs. The controls can be put together in almost any order. We can quickly supply you with special prototype controls, production quantities or just an initial quote from our A-B pricing specialist.

Power Rating	Single Section	Multi-Section
Carbon	1 Watt	½ Watt/Section
Cermet	2 Watts	1 Watt/Section

To Order a Custom MOD POT Control, Submit the Following Information:

- Number and type of sections required (resistance modules listed in **Chart No. 1**, switch modules in **Chart No. 2**, vernier drive sections in **Chart No. 3**).
- Bushing types (selections listed in **Chart No. 4**).
- Shaft combinations (selection of types in **Chart No. 5**).
- Locating lug options (selection of types in **Chart No. 6**).

CHART NO. 1, RESISTANCE MODULES

Nominal Resistance Values, Ohms			
50*	1K	25K	750K
75*	2K	50K	1.0 megs
100	2.5K	75K	2.5 megs
200	5K	100K	5.0 megs
250	7.5K	200K	10.0 megs*
500	10K	250K	
750	20K	500K	

*Carbon composition only.

To Order Resistance Modules, Specify The Following For Each Module:

- Nominal resistance value in ohms, from Chart No. 1.
- Cermet or carbon composition.
- Tolerance: Carbon composition, 10% or 20%; Cermet, 5% or 10%.
- Solder lug or square terminals.
- Type of taper: Linear taper. Other tapers available in values of 250 ohms thru 10.0 megohms, carbon composition only, as follows:

Clockwise and counterclockwise modified logarithmic taper..... ±10% or ±20% tolerance
Clockwise exact logarithmic taper.. ±10% or ±20% tolerance
Modified linear taper..... ±10% or ±20% tolerance
Attenuators, L-pad or bridged T-pad..... ±15% or ±20% tolerance

CHART NO. 2, SWITCHES

Current Rating: 2 amps rms for 125 V, 60 Hz, resistive load.

Switch Type	Contact Arrangement
Rotary	Two sets of contacts per switch*— One set normally open, one set normally closed. Two sets normally open.
Push-Pull or Momentary	Four sets of contacts per switch— Two sets normally open, two sets normally closed.

*Switches are described in the detent position.

To Order Switches, Specify The Following For Each:

- Type of switch.
- Contact arrangement.
- Location of detent required if rotary switch is ordered—either clockwise or counterclockwise end of rotation.

CHART NO. 3, VERNIER DRIVES

Drive	Type of Shaft and Shaft Combination*
3⅓ or 16-Turn Vernier	Fine adjust shaft only. Fine and coarse adjust shaft.

*To Order Vernier Drive Control, Specify Type Of Shaft Or Shaft Combination Required. See Chart No. 5.

CHART NO. 4, MOUNTING BUSHINGS

Bushing Type	Diameter	Length ¼"	Length ⅜"	Length ½"
Plain	¼"	PA	PC	.....
Locking	¼"	.....	LC	LH
Plain	⅜"	PG	PK	.....
Locking	⅜"	.....	BK	BN

To Order Mounting Bushings, Specify Type, Diameter and Length by Choosing Two Letters Listed Under Length Columns, e.g., PA = Plain Mounting Bushing, ¼" dia. x ¼" lg.

CHART NO. 5, SHAFT COMBINATIONS AND LENGTHS

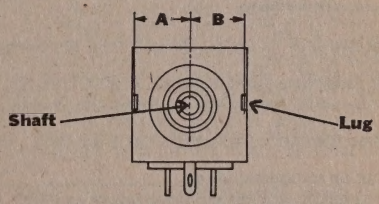
Shaft Operating Combinations	Lengths*
⅛" Dia. Solid	⅜", ½", ⅝", ¾", ⅞"
¼" Dia. Solid	⅜", ½", ⅝", ¾", ⅞", 2"
¼" Dia. Outer Concentric ⅛" Dia. Inner Concentric	½", ⅝", ¾" 1", 1⅛", 1¼"
⅛" Dia. Outer Concentric .078" Dia. Inner Concentric	½", ⅝", ¾" 1", 1⅛", 1¼"

*Lengths are measured from the bushing mounting surface.

To Order Shaft Combination and Length, Specify the Following Information:

- Shaft combination desired.
- For dual shaft combination, specify which sections are to be operated by each shaft.
- Shaft lengths.
- Standard shaft endings include plain round, screwdriver slot, or flatted except for .078" dia. solid and .125" dia. hollow shafts which have plain endings.

CHART NO. 6, LOCATING LUGS



Dimension A or B, or both, specify distance from shaft center to lug center.

Locating Lug Option No. (or Letter)	Dimen. A	Dimen. B
1	.305"	No Lug
2	.305"	.305"
3	.375"	No Lug
4	No Lug	No Lug
5	.375"	.375"
6	.437"	No Lug
7	.437"	.437"
8	.531"	No Lug
9	.531"	.531"
A	No Lug	.305"
B	No Lug	.375"
C	No Lug	.437"
D	No Lug	.531"

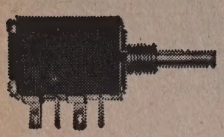
To Order Locating Lugs, Specify Lug Option No. (Or Letter).

All controls include standard A-B mounting hardware and markings. Extra hardware is available on request. Special markings can be provided on each control, if desired. For additional information, request Allen-Bradley Publication 5217 and Mod Pot Order Form 898.

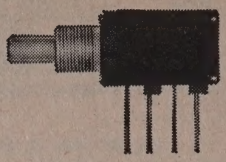
Because of the wide range of standard combinations available, pricing is quoted on an individual specification basis.

ALLEN-BRADLEY MOD POT®

MOD POT® SERIES 72 AND 73 POTENTIOMETERS, SWITCHES, VERNIER DRIVE CONTROLS



SERIES 72



SERIES 73

Now you can obtain rapid delivery on A-B MOD POT potentiometers, switches and vernier drive controls. We have our own facilities to build almost any type of the small ⅝" square controls which you might require. Just specify your needs. We can quickly supply you with special prototype controls, production quantities, or just an initial quote from our A-B pricing specialist. Series 72 is a lower-priced version of the Series 70 with plastic mounting bushings and plastic shafts; it is available with hot-molded carbon element only and a single shaft. Series 73 is an economy version of Series 70; mounting bushings are molded into a plastic face plate and it is available only as a single or dual section control.

Power Rating	Single Section	Multi-Section
Carbon	1 Watt*	½ Watt/Section
Cermet	2 Watts	1 Watt/Section

*Series 72 rated ½ Watt per section and carbon only.

To Order a Custom MOD POT Control, Submit the Following Information:

- Number and type of sections required (resistance modules listed in **Chart No. 1,** switch modules in **Chart No. 2,** vernier drive sections in **Chart No. 3**).
- Bushing types (selections listed in **Chart No. 4**).
- Shaft combinations (selection of types in **Chart No. 5**).
- Locating lug options (selection of types in **Chart No. 6**).

CHART NO. 1, RESISTANCE MODULES

	Nominal Resistance Values, Ohms		
50*	1K	25K	750K
75*	2K	50K	1.0 megs
100	2.5K	75K	2.5 megs*
200	5K	100K	5.0 megs*
250	7.5K	200K	10.0 megs*
500	10K	250K	
750	20K	500K	

*Carbon composition only.

To Order Resistance Modules, Specify The Following For Each Module:

- Nominal resistance value in ohms, from Chart No. 1.
- Cermet or carbon composition. Series 72 available in carbon only.
- Tolerance: Carbon composition, 10% or 20%; Cermet, 5% or 10%.
- Solder lug or square terminals.
- Type of taper: Linear taper. Other tapers available in values of 250 ohms thru 10.0 megohms, carbon composition only, as follows:

Clockwise and counterclockwise modified logarithmic taper..... ±10% or ±20% tolerance
Clockwise exact logarithmic taper.. ±10% or ±20% tolerance
Modified linear taper..... ±10% or ±20% tolerance
Attenuators, L-pad or T-pad..... ±15% or ±20% tolerance

CHART NO. 2, SWITCHES

Current Rating: 2 amps rms for 125 V, 60 Hz, non-inductive load.

Switch Type	Contact Arrangement*
Rotary	Two sets of contacts per switch One set normally open, one set normally closed. Two sets normally open.
Push-Pull† or Momentary†	Four sets of contacts per switch— Two sets normally open, two sets normally closed.

*Switches are described in the detent position. †Not available on Series 72.

To Order Switches, Specify The Following For Each:

- Type of switch.
- Contact arrangement.
- Location of detent required if rotary switch is ordered—either clockwise or counterclockwise end of rotation.

CHART NO. 3, VERNIER DRIVES.

Drive	Type of Shaft and Shaft Combination*
16-Turn	Fine adjust shaft only.
Vernier†	Fine and coarse adjust shaft.

*To Order Vernier Drive Control, Specify Type Of Shaft Or Shaft Combination Required. See Chart No. 5. †Not available on Series 72.

CHART NO. 4, MOUNTING BUSHINGS.

Bushing Type	Diameter	Lengths
Plain	¼"	¼", ⅜"†
Locking†	¼"	⅜", ½"
Plain	⅜"	¼"†, ⅜"
Locking†	⅜"	⅜", ½"

*Bushings are plastic on Series 72. †Not applicable on Series 72.

CHART NO. 5, SHAFT COMBINATIONS AND LENGTHS

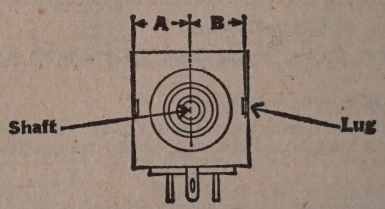
Shaft Operating Combinations	Lengths*
⅛" Dia. Solid	⅜"†, ½", ⅝", ¾", ⅞"†
¼" Dia. Solid	⅜"†, ½"†, ⅝"†, ¾", 1⅛"
¼" Dia. Outer Concentric†	½", ⅝", ¾"
⅛" Dia. Inner Concentric†	1", 1⅛", 1¼"
⅛" Dia. Outer Concentric†	½", ⅝", ¾"
.078" Dia. Inner Concentric†	1", 1⅛", 1¼"

*Lengths are measured from the bushing mounting surface. †Not available on Series 72.

To Order Shaft Combination and Length, Specify the Following Information:

- Shaft combination desired.
- For dual shaft combination, specify which sections are to to be operated by each shaft.
- Shaft Lengths.
- Standard shaft endings include plain round, screwdriver slot, or flatted except .078" dia. solid and .125" dia. hollow shafts which have plain endings.

CHART NO. 6, LOCATING LUGS



Dimension A or B, or both, specify distance from shaft center to lug center.

Locating Lug Option No. (or Letter)	Dimen. A	Dimen. B
1	.305"	No Lug
4	No Lug	No Lug
A	No Lug	.305"

To Order Locating Lugs, Specify Lug Option No. (Or Letter).

All controls include standard A-B mounting hardware and markings. Extra hardware is available on request. Special markings can be provided on each control, if desired. For additional information, request Allen-Bradley Publication 5217 and Mod Pot Order Form 898.

Because of the wide range of standard combinations available, pricing is quoted on an individual specification basis.

BUNKER RAMO AMPHENOL Micropots, Microdials

TEN-TURN PRECISION MICROPOTS

Model 205: Bushing mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance (Zero-Based), ±0.1%. Resistance Tolerance, ±10% below 50 ohms; ±3%, 50 ohms and above. Size, 1¾″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 1.15, 2.9, 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 50K or 100K ohms.

Model 2101B: Bushing-servo mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +125° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±5%, 25 and 50 ohms; ±3%, 100–100K ohms; ±5%, 120K ohms. Size, ⅞″ dia. x 1.448″ lg., bushing; ⅞″ dia. x 1.573″ lg., servo; ⅛″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 40K, 50K, 100K or 120K ohms.

Model 2151B: Bushing mount. Power Rating, 3 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±3%. Size, ⅞″ dia. x 1.455″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 100, 500, 1K, 5K, 10K, 20K, 30K, 50K or 100K ohms.

Model 216B—Same as above, except servo mount bushing.

Model 2201B: Bushing mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5% below 100 ohms, ±0.25%, 100–100K; ±0.5%, 200K. Resistance Tolerance, ±5%, 25 and 50 ohms; ±3%, 100–100K; ±5%, 200K. Size, 1 13/16″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 50K, 100K or 200K ohms.

Model 4101B: Bushing mount. Power Rating, 2 watts max. at 40° C. Temperature Range, −55° C to +125° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±5%. Size, ⅞″ dia. x 1.182″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K or 100K ohms.

Model 4201B—Same as above, except size—⅞″ dia. x ¾″ long.

THREE-TURN PRECISION MICROPOT

Model 205-3T: 3-turn precision Micropot. Bushing mount. Power Rating, 3 watts at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5%, zero-based. Resistance Tolerance, ±10%, 10 ohms; ±3%, 50–50K ohms. Size, 1¾″ dia. x 1 31/64″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 10, 50, 100, 500, 1K, 5K, 10K, 20K, 30K or 50K ohms.

OUR STOCK IS COMPLETE AND UP TO DATE.

WRITE FOR ADDITIONAL INFORMATION ON

ANY NEW OR UNLISTED ITEMS

MICROPOT PRICES

Prices are for all resistance ranges.

Amphenol Model	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250 Up
205	$19.42	$18.42	$17.48	$16.48	$15.54	Prices on Request
205-3T	15.43	14.64	13.91	13.12	12.33	
2101B	27.30	25.93	24.57	23.20	21.84	
2151B	10.50	9.97	9.45	8.92	8.40	
2201B	10.50	9.97	9.45	8.92	8.40	
4101B	5.95	5.65	5.35	5.05	4.75	
4201B	3.99	3.85	3.16	3.65	3.29	

CONCENTRIC SCALE MICRODIALS®

Type 1350: Ten-turn concentric scale increment dial has 100 divisions; turns-counting dial numbered 0–10. Extra-large outer vernier dial and foolproof turns dial for readout accuracy of 1000:1. Smooth epicyclic gear movement. Zero backlash. Fingertip brake. Clear anodized aluminum finish. Size, 1 1/16″ dia. x 1″ deep. For ¼″ dia. shafts.

Type 1370: Same as Type 1350, except size only ⅞″ dia. x .898″ deep. For ¼″ dia. shafts.

Type DFA: Ten-turn dial has 1000:1 indexing accuracy; couples directly to potentiometer shaft, hence no backlash. Single numeral in window above the knob indicates completed turns of shaft. Available in satin chrome finish **DFA-N** or with white numbers on black finish **DFA-NB.** Size, 1.06″ w. x 1.25″ h. (1.63″ h. with lock lever).

DIGITAL READOUT MICRODIALS

Type 1300: Digital units for fast, accurate readings; indicates precise shaft position up to 1000 turns. Available in 3-digit 10-turn, 4-digit 100-turn, and 5-digit 1000-turn models with counts to 6000 per minute. Optional fingertip brakes. Knurled aluminum knobs; Cycolac* counter wheels. Rugged, dust-sealed case. Continuous rotation. Numbers 3/16″ high. *Reg. TM Borg-Warner Corp.

Amphenol Number		No. Digits	No. Turns	Counts	Size, In. Dia. x Depth
Std.	With Brake				
1310	1309	3	10	000–999	1 1/16 x 1 1/32
1304	1314	4	100	0000–9999	2 1/16 x 1 1/32
1305	1315	5	1000	00000–99999	2 1/16 x 1 1/32

Type 1330: Ten-turn 3-digit units with on-off switchable brake and magnified digits for widest versatility. Internally illuminated. Lens type window gives 1½X magnification of digits. Snap-on cap for easy lamp replacement. Sealed against dust and moisture. Machined aluminum knob with fluted rim. Numbers 5/16″ high. Size, 1¾″ dia. x 1 31/32″ deep.

No Light No.	White Light No.	Red Light No.	Std. Color
1331	1331LW	1331LR	Dark Gray
1332	1332LW	1332LR	Light Gray
1333	1333LW	1333LR	Red
1334	1334LW	1334LR	Black
1335	1335LW	1335LR	White

Type 1380: Ten-turn dial has 1000:1 indexing accuracy; mounts to ¼″ potentiometer shaft with a single set screw. Control knob mounts directly to shaft to eliminate backlash inaccuracy; on-off brake switch. Available in black finish **1381** or in black with gray hammertone finish **1385.** Size, 1 7/64″ w. x 1.075″ d. x 1 5/64″ h.

Type 3100: Extremely precise, digital Microdial. Measures 1 1/16″ x 1 11/32″ and protrudes only 11/32″ from panel. Digits (illumination optional) magnified by convex lens in recessed window. Three-digit 10-turn dial rotates continuously forward and backward with fingertip brake to lock settings. Indexing accuracy, 1000:1. For panels 1/16″ to 3/16″ thick. Natural brush aluminum finish. Illuminated types supplied with 28-volt bulb; optional 6-volt bulb available, specify.

Amphenol Number	Shaft Dia.	Light	Amphenol Number	Shaft Dia.	Light
3121	⅛″	None	3141	¼″	None
3121-2	⅛″	White	3141-2	¼″	White
3121-3	⅛″	Red	3141-3	¼″	Red

Type DFD: Ten-turn 3-digit readout with a vernier wheel providing 4 graduations intermediate between adjacent digits on the least significant digit counter wheel permits interpolating to 250 parts per million. Magnified digits and vernier scale for easy viewing. Size, less than 1″ wide and less than 2″ high.

MICRODIAL PRICES

Amphenol Model	Net Each, Lots of				
	1-9	10-24	25-49	50-99	100-249
1304	$21.00	$19.95	$18.90	$17.85	$16.80
1305	22.57	21.42	20.31	19.16	18.06
1309	16.38	15.54	14.75	13.91	13.12
1310	15.22	14.43	13.70	12.91	12.18
1314	22.57	21.42	20.31	19.16	18.06
1315	25.20	23.94	22.68	21.42	20.16
1331-1335	23.00	22.00	20.80	19.50	18.60
1331LW–1335LW	23.00	22.00	20.80	19.50	18.60
1331LR–1335LR	23.00	22.00	20.80	19.50	18.60
1350	10.21	8.97	8.13	7.62	7.26
1370	12.02	10.61	9.60	9.00	8.57
1381, 1385	15.73	13.86	12.60	11.81	11.25
3121	16.12	14.45	12.96	12.15	11.57
3121-2, -3	21.19	18.96	17.07	16.00	15.24
3141	16.12	14.45	12.96	12.15	11.57
3141-2, -3	21.19	18.96	17.07	16.00	15.24
DFA-N, DFA-NB	4.95	4.70	4.45	4.18	3.98
DFD	13.75	12.95	12.25	11.50	10.95

BOURNS® PART NUMBERING SYSTEM

Resistance tolerance given is standard; closer tolerances available. Standard resistance range given; special resistances available. Panel mount available with lead, lug or wire types as noted.

200, 3010	L	1	102	M
Basic Model	**Terminal Style**	**Modifying Number**	**Resistance Code**	**Panel Mount**
Contains 3 or 4 digits	**J, S**—Solder lugs **L**—Insulated stranded leads **H**—PC pins **P, T, Y**—Flat mounting PC pins **W, W66, X**—Edge mounting PC pins	**1**—Standard resistance **2**—100K standard resistance	First 2 digits indicate significant numbers; 3rd digit indicates number of zeros	Available as noted

COMMERCIAL SINGLE-TURN POTENTIOMETERS

TRIMIT® WIRE-WOUND MODEL 3305

Model 3305P

Model 3345W

Sealed to prevent contamination from fluxing, soldering and cleaning. Stops provided at each end of travel. Mechanical Rotation: 280° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±5%. Size: 0.31″ dia. x 0.19″ h. (**P**); 0.250″ d. x 0.312″ w. x 0.375″ h. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3305	P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K	$1.93	$1.85	$1.77	$1.72	$1.62	$1.51
		10K	2.20	2.11	2.02	1.96	1.85	1.73
		25K	2.75	2.64	2.53	2.45	2.31	2.16
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K	2.48	2.38	2.28	2.20	2.08	1.95
		10K	2.75	2.64	2.53	2.45	2.31	2.16
		25K	3.30	3.17	3.04	2.94	2.77	2.60

WIRE-WOUND MODEL 3345

Model 3305W

Sealed for printed circuit applications; meets MIL humidity test. Stops provided at each end of adjustment. Mechanical Rotation: 280° nom. Power Rating: 1.0 watt at 70° C. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.31″ dia. x 0.19″ h. (**P**); 0.250″ d. x 0.312″ w. x 0.375″ h.

3345	P, W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$2.30	$2.09	$1.88	$1.71	$1.60	$1.45
		20K, 50K	3.30	3.01	2.71	2.44	2.30	2.08

HIGH PERFORMANCE CERMET MODEL 3329

Model 3345P

Sealed to withstand any wave soldering and immersion cleaning process; meets MIL humidity test. Mechanical Rotation: 240° nom. Power Rating: 0.5 watt at 85° C. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.25″ dia. x 0.18″ h. (**H, P**); 0.29″ w. x 0.245″ h. x 0.375″ lg. (**W**).

3329	H, P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$1.75	$1.66	$1.57	$1.50	$1.45	$1.40
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	2.50	2.38	2.25	2.15	2.07	2.00

CERMET MODEL 3389

Model 3329H

Low cost potentiometer sealed for industrial process cleaning; meets MIL humidity test. Mechanical Rotation: 280° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±20%. Mounting: H, S and W, edge mounting PC pins; P, R and T, flat mounting PC pins. Size: 0.394″ w. x 0.24″ h. x 0.36″ lg. (**P, R, S, T, W**); 0.394″ w. 0.36″ h. x 0.24″ d. (**H**).

3389	H	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$0.91	$0.84	$0.79	$0.76	$0.71	$0.66
	P, R, S, T, W	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	.76	.70	.65	.63	.60	.56

CERMET MODEL 3386

Model 3386R

Wide choice of terminal styles cover almost any PC board layout requirement. Meets MIL humidity test; sealed to withstand wave soldering processes. Mechanical Rotation: 280° nom. Power Rating: 0.5 watt at 85° C. Operating Temperature: 125° C max. Tolerance: ±10%. Mounting: F, K, M, P and R are top adjust PC pins; B, C, H, S and W are side adjust PC pins. **H, P** (TO-5), **C, W** (0.100″ inline), **B, M, R, S** (0.150″ inline), **F** (0.200″ grid) and **K** (triangular). Size: ⅜″ square x 0.19″ d.

Bourns Model	Specify Terminal Top	Specify Terminal Side	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3386	F	B	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$0.76	$0.70	$0.65	$0.63	$0.60	$0.56
	K	C							
	M	H							
	P	S							
	R	W							

Model 3389T

CERMET MODEL 3352

Model 3389W

Choice of 6 terminal styles covers almost any PC board layout requirement. Meets MIL humidity test; withstands industrial board-cleaning processes with less than 1% shift in total resistance. **Mechanical rotation:** 230° nom. **Power Rating:** 0.75 W at 40° C. **Operating Temperature:** 125° C. max. **Tolerance:** ±20% standard, closer tolerances available. **Mounting:** T, E, and P are top adjust PC pins; W, H, and V are side adjust PC pins. Has thumb wheel with crossed slots.

Bourns Model	Specify Terminal Top	Specify Terminal Side	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3352	F	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs, 5 megs.	$0.61	$0.57	$0.54	$0.53	$0.52	$0.48
	E	H							
	P	V							

COMMERCIAL MULTI-TURN POTENTIOMETERS

Models 3009P, 3007P

WIRE-WOUND E-Z-TRIM® MODEL 3005

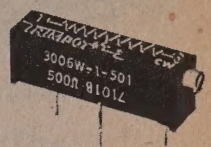
Humidity meets MIL-STD-202, Method 103. Self-locking adjustment screw; 20-turn screwdriver adjustment. Power Rating: 1.0 watt at 40° C. Abs. Min. Res.: 0.5% or 1.0 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.17″ w. x 0.31″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3005P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$2.00	$1.85	$1.75	$1.72	$1.65	$1.55

CERMET MODEL 3006

Low cost industrial model only 0.250″ high above the printed circuit board. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±10%. Mechanical Adjustment: 15 turns nom. Size: 0.75″ x 0.190″ x 0.250″.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3006	P W Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.40	$1.30	$1.21	$1.19	$1.15	$1.08

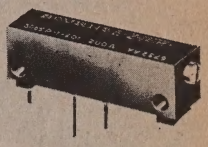


Model 3006W, 3009P

WIRE-WOUND E-Z-TRIM® MODEL 3007

Humidity meets MIL-STD-202, Method 103. Self-locking adjustment screw; 20-turn screwdriver adjustment; welded terminations. Power Rating: 1.0 watt at 40° C. Abs. Min. Res.: 0.5% or 1.0 ohm, whichever is greater. Operating Temperature: 125° C. Tolerance: ±10%. Size: 0.17″ w. x 0.31″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3007P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$2.00	$1.85	$1.75	$1.72	$1.65	$1.55

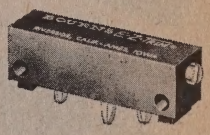


Models 3065P, 3067P

CERMET E-Z-TRIM® MODEL 3009

Wiper assembly idles at both ends; 20 turns nominal adjustment. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 25° C. Abs. Min. Res.: 2.0% or 1 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.19″ w. x 0.35″ h. x 0.75″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3009	P Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.94	$1.84	$1.75	$1.71	$1.65	$1.55



Models 3067S, 3068S

HUMIDITY-PROOF WIRE-WOUND E-Z-TRIM® MODEL 3065

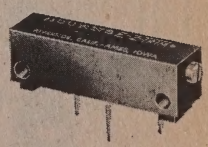
Meets steady-state humidity spec. Adjustment turns, 15 nom. Power Rating: 0.5 watt at 25° C. Operating Temperature: 85° C max. Tolerance: ±10%. Size: 0.29″ w. x 0.36″ h. x 1.0″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3065	P S	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$2.13	$1.97	$1.77	$1.68	$1.58	$1.50

WIRE-WOUND E-Z-TRIM® MODEL 3067

Wiper assembly idles at both ends of travel; 15-turn screwdriver adjustment. Power Rating: 0.5 watt at 25° C. Operating Temperature: 85° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.36″ h. x 1.0″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3067	P S	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$2.13	$1.97	$1.77	$1.68	$1.58	$1.50

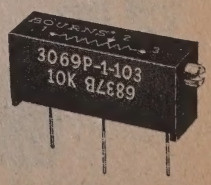


Model 3068P

CARBON E-Z-TRIM® MODEL 3068

Stable infinite resolution carbon element. Self-locking adjustment screw; 15-turn screwdriver adjustment. Power Rating: 0.2 watt at 25° C. End Setting: 0–5% voltage ratio. Operating Temperature: 85° C max. Tolerance: ±20%. Size: 0.28″ w. x 0.36″ h. x 1.00″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3068	P S	20K, 50K, 100K, 200K, 500K, 1 meg	$2.13	$1.97	$1.77	$1.68	$1.58	$1.50

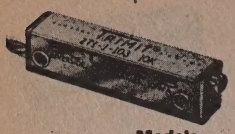


Model 3069P

CERMET E-Z-TRIM® MODEL 3069

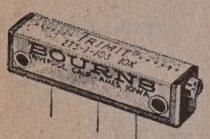
MIL spec immersion seal; tinned pins for compatibility with automated and hand soldering methods; 20 turns nominal adjustment. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 25° C. Abs. Min. Res.: 2% or 1 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.35″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3069P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.94	$1.84	$1.75	$1.71	$1.65	$1.55

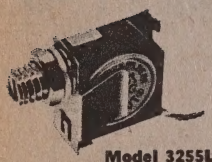


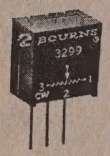
Models 271L, 272L

Models 273S, 274S



Models 275P, 276P


Model 3255L Panel Mount



Model 3299X

Model 3300W

Model 3300S

Model 3322P

Model 3339P

COMMERCIAL MULTI-TURN POTENTIOMETERS (CONT'D)

WIRE-WOUND TRIMIT® MODELS 271, 273, 275

Ideal for industrial controls and lab type applications. Self-locking adjustment shaft; wiper assembly idles both ends; 25-turn screwdriver adjustment. Power Rating: 0.5 watt at 70° C. Abs. Min. Res.: 2.0%. Operating Temperature: 105° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
271	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.51	$3.25	$2.93	$2.77	$2.60	$2.46
273	S	20K	4.75	4.40	3.96	3.76	3.52	3.34
275	P	50K	5.94	5.50	4.95	4.70	4.40	4.18
Panel mount		Available 271 or 273 model. Add to price	1.10	1.02	.92	.87	.82	.77

CARBON TRIMIT® MODELS 272, 274, 276

Infinite resolution Resiston carbon element. Self-locking shaft; 25-turn adjustment. Power Rating: 0.2 watt at 25° C. End Setting: 0–5.0% voltage ratio. Operating Temperature: 105° C max. Tolerance: ±20%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

272 274 276	L S P	5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs, 5 megs	$4.16	$3.85	$3.47	$3.29	$3.08	$2.93
Panel mount		Available 272 or 274 model. Add to price	1.10	1.02	.92	.87	.82	.77

WIRE-WOUND MODEL 3255

High temperature all-plastic case; 25-turn screwdriver adjustment; meets MIL steady-state humidity specs. Power Rating: 1.0 watt at 50° C. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.50″ sq. x 0.19″ thk. (**L**); 0.22″ thk. (**P** or **W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3255	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.51	$3.25	$2.93	$2.77	$2.60	$2.46
	P	20K, 25K	4.75	4.40	3.96	3.76	3.52	3.34
	W	50K	5.26	4.87	4.38	4.16	3.89	3.70
Panel mount		Available L or W terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

CERMET MODEL 3299

Sealed to withstand wave-soldering and cleaning processes; humidity meets MIL-STD-202. Mechanical Adjustment: 25 turns nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.37″ w. x 0.39″ h. x 0.25″ lg.

3299	P W X	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg	$1.66	$1.54	$1.44	$1.41	$1.37	$1.28

INDUSTRIAL SINGLE-TURN POTENTIOMETERS

HUMIDITY-PROOF HIGH TEMPERATURE WIRE-WOUND MODEL 3300

High temperature; humidity-proof to MIL specs. Single turn adjustment, 300° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.31″ dia. x 0.18″ h. (**P**); 0.31″ dia. x 0.46″ h. (**S**); 0.25″ w. x 0.37″ h. x 0.31″ lg. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3300	P or W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 6.53	$ 6.05	$5.45	$5.17	$4.84	$4.60
		25K	8.32	7.70	9.93	6.58	6.16	5.85
	S	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	9.80	9.08	8.17	7.76	7.26	6.90
		25K	11.58	10.73	9.66	9.16	8.58	8.15

CERMET MODEL 3322 (RJ50)

Meets or exceeds MIL-R-22097, Style RJ50. Single turn adjustment, 240° nom. Power Rating: 0.5 watt at 85° C. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.25″ dia. x 0.22″ h.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3322P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$6.05	$5.74	$5.39	$5.13	$4.79	$4.54

INDUSTRIAL FOUR-TURN POTENTIOMETER

CERMET MODEL 3339

Sealed to withstand wave soldering and immersion cleaning process; humidity meets MIL-STD-202. Four turn adjustment. Power Rating: 0.5 watt at 85° C. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.30″ dia. x 0.25″ thk. (**H, P**); 0.320″ w. x 0.315″ d. x 0.375″ h. (**W**).

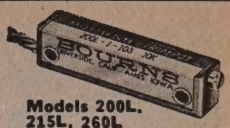
3339	H P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$2.50	$2.32	$2.09	$1.98	$1.86	$1.76
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	3.50	3.25	2.93	2.78	2.61	2.47

INDUSTRIAL MULTI-TURN POTENTIOMETERS

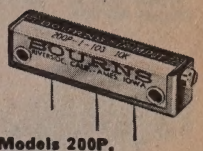
WIRE-WOUND MODEL 200

Exceeds steady-state humidity of MIL-STD-202. Power Rating: 0.5 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 105° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
200	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$4.86	$4.50	$4.05	$3.84	$3.60	$3.42
	P	20K, 25K	6.48	6.00	5.40	5.12	4.80	4.56
	S	50K	7.56	7.00	6.30	5.98	5.60	5.32
Panel mount		Available L or S terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77



Models 200L, 215L, 260L



Models 200P, 215P, 260P

RESISTON® CARBON MODEL 215

Excellent shock, vibration and acceleration stability. Stable wiper assembly idles at both ends; self-locking adjustment, 22 turns nom. Power Rating: 0.25 watt at 50° C. Operating Temperature: 135° C max. Tolerance: ±20%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

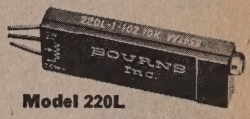
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
215	L	5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs, 5 megs	$5.35	$4.95	$4.46	$4.22	$3.96	$3.76
	P							
	S							
Panel mount		Available L or S terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77

Models 200, 215, 260 Panel Mount

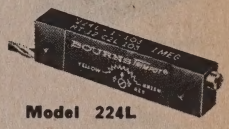
HIGH TEMPERATURE WIRE-WOUND MODEL 220 (RT10)

Meets or exceeds all requirements of MIL-R-27208, Style RT10. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 15 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.18″ w. x 0.32″ h. x 1.00″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
220	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 9.50	$8.80	$7.92	$7.51	$7.04	$6.69
	P							
	W	20K, 25K, 30K	11.29	10.45	9.41	8.92	8.36	7.94
Panel Mount		Available L or W terminals. Add to price	1.10	1.02	.92	.87	.82	.77



Model 220L

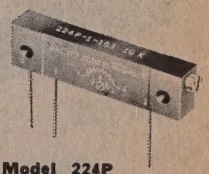


Model 224L

HIGH TEMPERATURE WIRE-WOUND MODEL 224 (RT12)

Meets or exceeds all requirements of MIL-R-27208. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
224	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.72	$7.15	$6.44	$6.11	$5.72	$5.43
	P	20K, 25K	9.50	8.80	7.92	7.51	7.04	6.69
	S	50K	10.10	9.35	8.42	7.99	7.48	7.11
Panel mount		Available L or S terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77


Model 224P

Model 224S

HIGH TEMPERATURE WIRE-WOUND MODEL 260

Exceeds steady-state humidity requirements to MIL-STD-202. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

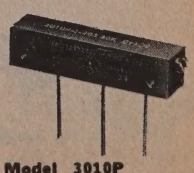
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
260	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$6.53	$6.05	$5.45	$5.17	$4.84	$4.60
	P	20K, 25K	8.32	7.70	6.93	6.58	6.16	5.85
	S	50K	8.91	8.25	7.43	7.05	6.60	6.27
Panel mount		Available L or S terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77

Model 3010L

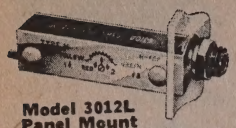
HIGH TEMPERATURE WIRE-WOUND MODEL 3010

Meets MIL-R-27208. Sealed against humidity, liquids and potting compounds. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3010	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.72	$7.15	$6.44	$6.11	$5.72	$5.43
	P	20K, 25K	9.50	8.80	7.92	7.51	7.04	6.69
		50K	10.10	9.35	8.42	7.99	7.48	7.11
Panel mount		Available L terminal. Add to basic price	1.10	1.02	.92	.87	.82	.77


Model 3010P

INDUSTRIAL MULTI-TURN POTENTIOMETERS (CONT'D)

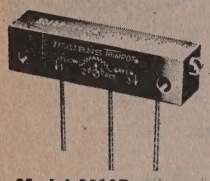


Model 3012L
Panel Mount

HIGH TEMPERATURE CERMET MODEL 3012

Meets or exceeds requirements of MIL-R-22097. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3012	L, P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs	$6.53	$6.05	$5.45	$5.17	$4.84	$4.60
Panel mount		Available L terminal. Add to price	1.10	1.02	.92	.87	.82	.77



Model 3012P

HIGH TEMPERATURE CERMET MODEL 3052

Meets MIL humidity spec. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

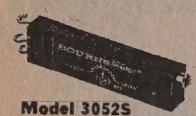
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3052	L, P, S, Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$6.53	$6.05	$5.45	$5.17	$4.84	$4.60
Panel mount		Available L or S terminals. Add to price	1.10	1.02	.92	.87	.82	.77

Model 3052L, 3057L,
3059L

HIGH TEMPERATURE HUMIDITY-PROOF WIRE-WOUND MODEL 3057 (RT12)

Humidity proof to MIL spec; meets MIL spec tests for styles RT12 and RTR12 level Mor P. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3057	J, L, P, Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$6.22	$5.51	$4.73	$4.25	$4.06	$3.88
		20K	6.85	6.05	5.24	4.69	4.48	4.26
		50K	7.47	6.60	5.71	5.11	4.87	4.65
		100K	9.45	8.36	7.23	6.79	6.48	6.09
Panel mount		Available J or L terminals. Add to price	1.10	1.02	.92	.87	.82	.77

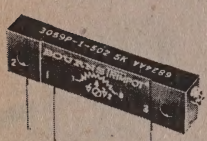


Model 3052S

HIGH TEMPERATURE HUMIDITY-PROOF CERMET MODEL 3059 (RJ12)

MIL spec immersion seal gives trouble free operation after PC board processes. Solderable pins for compatibility with automated and hand soldering methods. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3059	J, L, P, Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs	$3.30	$3.14	$2.97	$2.83	$2.67	$2.52
Panel mount		Available J or L terminals. Add to price	1.10	1.02	.92	.87	.82	.77



Models 3052P,
3057P, 3059P

HUMIDITY-PROOF CERMET MODEL 3082

Meets MIL humidity spec. Power Rating: 0.3 watt at 85° C. Mechanical Adjustment: 10 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.10″ w. x 0.15″ h. x 0.50″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3082P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs	$7.70	$7.13	$6.42	$6.09	$5.71	$5.42

Model 3082P

WIRE-WOUND DUAL-IN-LINE MODEL 3095

Sealed against humidity to MIL spec. Standard DIP size (TO-116) compatible with automatic insertion equipment. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 18 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.19″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3095P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$3.75	$3.35	$3.00	$2.80	$2.60	$2.45
	50K	5.00	4.46	4.00	3.73	3.46	3.26

Models 3095P,
3099P

CERMET DUAL-IN-LINE MODEL 3099

Sealed to meet MIL-R-22097 immersion requirements. Standard DIP size (TO-116) compatible with DIP automatic insertion equipment. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 20 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.19″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3099P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$3.75	$3.35	$3.00	$2.80	$2.60	$2.45

Model
3262P

HUMIDITY-PROOF HIGH TEMPERATURE CERMET MODEL 3262 (RJ26)

Meets or exceeds all requirements of MIL-R-22097, Style RJ26. Power Rating: 0.25 watt at 85° C. Mechanical Adjustment: 12 turns nom. Operating Temperature: 175° C. Tolerance: ±10%. Size: 0.25″ sq. x 0.17″ h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3262	P, W, X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg	$7.53	$6.83	$6.13	$5.83	$5.46	$5.19

INDUSTRIAL MULTI-TURN POTENTIOMETERS (CONT'D)

¼" SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3260 (RT26)

Meets or exceeds all requirements of MIL-R-27208, Style RT26. Power Rating: 0.2 watt at 70° C. Mechanical Adjustment: 11 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.25" sq. x 0.17" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3260	H	10, 20, 50, 100, 200, 500, 1K	$ 8.25	$ 7.65	$ 6.88	$6.52	$6.12	$5.81
	W	2K, 5K	9.08	8.40	7.57	7.18	6.72	6.39
		10K, 20K	11.55	10.69	9.63	9.14	8.56	8.13
		25K	12.10	11.21	10.09	9.57	8.97	8.51

Model 3260H

Model 3260W

½" SQ. HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3250 (RT22)

Humidity-proof; sealed in high-temperature plastic case. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.50" sq. x 0.19" h. (**L**); 0.22" h. (**P, W, W66**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3250	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.38	$ 6.84	$6.15	$5.84	$5.47	$5.19
		20K, 25K	8.32	7.70	6.93	6.58	6.16	5.85
		50K	11.00	10.20	9.17	8.70	8.15	7.74
	P W W66	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	7.95	7.36	6.62	6.28	5.89	5.59
		20K, 25K	8.77	8.12	7.30	6.93	6.49	6.17
		50K	11.58	10.73	9.66	9.16	8.58	8.15
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

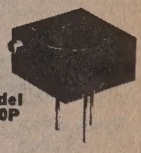
Model 3250L

½" SQ. HIGH PERFORMANCE HUMIDITY-PROOF CERMET MODEL 3252 (RJ22)

Meets or exceeds requirements of MIL-R-22097, Style RJ22. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 23 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.50" sq. x 0.22" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3252	L P W X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$5.90	$5.62	$5.31	$5.01	$4.73	$4.25
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

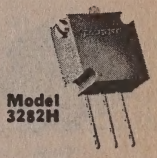
Model 3252P


Model 3280P

⅜" SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3280

Meets or exceeds requirements of MIL-R-27208. All plastic case provides sealing against liquids and potting compounds plus reliable moisture resistance. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.375" sq. x 0.203" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3280	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 8.32	$7.70	$6.93	$6.58	$6.16	$5.85
	P W W66	20K, 25K	10.10	9.35	8.42	7.99	7.48	7.11
		50K	10.69	9.90	8.91	8.46	7.92	7.52
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55


Model 3282H

⅜" SQUARE HUMIDITY-PROOF CERMET MODEL 3282

Meets applicable requirements of MIL-R-22097. Power Rating: 0.5 watt at 85° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.375" sq. x 0.20" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3282	H L P W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg	$7.15	$6.80	$6.44	$6.29	$6.07	$5.70

Model 3290L

⅜" SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3290 (RT24)

Meets or exceeds MIL-R-27208. All plastic case provides sealing against liquids and potting; positive end stops; reliable moisture resistance. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.375" sq. x 0.15" h.

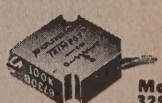
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3290	H L P W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 8.06	$ 7.47	$6.72	$6.38	$5.97	$5.68
		20K, 25K	9.63	8.91	8.03	7.61	7.13	6.78
		50K	11.11	10.29	9.26	8.79	8.23	7.82
Panel mount		Available **H, L, W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

Model 3290P

⅜" SQUARE THIN LINE CERMET MODEL 3292 (RJ24 AND RJR)

Meets or exceeds all requirements of MIL-R-22097, Style RJ24. Power Rating: 0.5 watt at 85° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.375" sq. x 0.150" h.

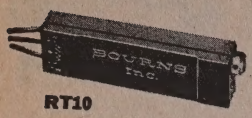
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3292	L P W X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg	$6.83	$6.49	$6.14	$6.01	$5.80	$5.44
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55


Model 3292L

Model 3292P

MIL-SPEC ADJUSTMENT POTENTIOMETERS

WIRE-WOUND MIL-R-27208 POTENTIOMETERS



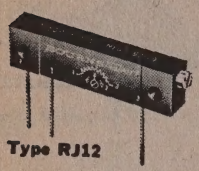
RT10

RJR12

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RT10C2L, RT10C2P	100, 200, 500, 1K, 2K, 5K, 10K	$9.50	$8.80	$7.92	$7.51	$7.04	$6.69
RT12C2L, RT12C2P, RT12C2Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	6.12	5.65	5.19	4.77	4.44	4.17
	20K	7.94	7.33	6.73	6.19	5.76	5.42
RT22C2L	50, 100, 200, 500, 1K, 2K, 5K, 10K	5.80	5.51	5.22	4.93	4.64	4.35
	20K	6.33	6.01	5.70	5.38	5.06	4.75
RT22C2P, RT22C2W, RT22C2X	50, 100, 200, 500, 1K, 2K, 5K, 10K	5.19	4.93	4.67	4.41	4.15	3.89
	20K	5.72	5.43	5.15	4.86	4.58	4.29
RT24C2L, RT24C2P, RT24C2W, RT24C2X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	8.06	7.46	6.72	6.38	5.97	5.67
RT26C2W, RT26C2X	10, 20, 50, 100, 200, 500, 1K	8.25	7.64	6.88	6.53	6.11	5.81
	2K, 5K	9.08	8.41	7.57	7.18	6.73	6.39

WIRE-WOUND MIL-R-39015 ESTABLISHED RELIABILITY POTENTIOMETERS

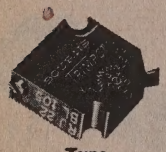
Failure rate level M and P.


Type RJ12

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RTR12DL, RTR12DP, RTR12DY	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$20.77	$19.23	$17.31	$16.43	$15.39	$14.62
	20K	22.47	20.81	18.73	17.77	16.65	15.82
RTR22DL RTR22DP RTR22DW RTR22DX	500, 1K, 2K, 5K, 10K	12.34	11.39	10.21	9.87	9.32	8.82
	20K	14.08	13.00	11.65	11.26	10.63	10.06
RTR24DP, RTR24DW, RTR24DX	500, 1K, 2K, 5K, 10K	9.09	8.42	7.58	7.19	6.74	6.40

CERMET MIL-R-22097 POTENTIOMETERS

Types RT12, RTR12


Type RJ22

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RJ12CL, RJ12CP, RJ12CY	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	$5.94	$5.22	$4.95	$4.84	$4.66	$4.38
RJ22CL*, RJ22CP*, RJ22CW*, RJ22CX*	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	6.25	5.94	5.63	5.30	5.00	4.50
RJ24CL, RJ24CP, RJ24CW, RJ24CX	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	6.50	6.18	5.85	5.72	5.52	5.18
RJ26CP†, RJ26CW†, RJ26CX†	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	7.00	6.50	5.84	5.55	5.20	4.94
RJ50CP	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	6.05	5.74	5.39	5.12	4.79	4.54

*Also available at same price in Characteristic **F** (RJ22FP) in same resistance range. †Also available at same price in Characteristic **F** (RF26FP) in same resistance range.

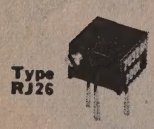
CERMET MIL-R-39035 ESTABLISHED RELIABILITY POTENTIOMETERS

Types RJ24, RJR24, RTR24

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RJR12CL*, RJR12CY*	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	$ 8.66	$ 8.02	$ 7.22	$6.85	$6.42	$6.10
RJR24CP*, RJR24CW*, RJR24CX*	200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg	11.56	10.76	10.25	9.85	8.58	.....

*Also available at same price in Characteristic **F** (RJR12FL, RJR24FP) in same resistance range.

STAINLESS STEEL BLADE POTENTIOMETER SCREWDRIVER


Type RJ26

For use on all Bourns potentiometer models. Complete with clip.
Bourns No. H-90—Net Each, Lots of 1-24 ..... **$0.35**; 25-99 ..... **$0.30**

KNOBPOT® READOUT POTENTIOMETER ACCESSORIES

Accessory colors meet Federal Standard 595.

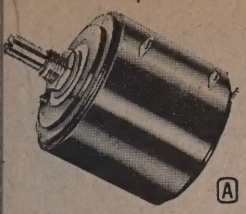
Type RJ50

Bourns No. For Knobpot® Model 3600	Bourns No. For Knobpot® Model 3640	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
H-93	H-99	Snap-on color rings*	$0.35	$0.30	$0.25	$0.20
H-95	.....	Stainless steel skirt	1.50	1.25	1.00	.75
.....	H-98		3.77	3.43	3.10	2.92
H-103	H-97	Plastic slip-over friction brake	1.25	1.07	.97	.90
.....	H-105	Flat face recess mounting bracket	2.19	1.99	1.80	1.70
H-107	.....		2.73	2.48	2.25	2.15
.....	H-106	Beveled face recess mounting bracket	2.61	2.38	2.15	2.05
H-108	.....		2.49	2.26	2.05	1.95
H-361		Removal tool for Model 3610	No Charge when Ordered with Model 3610			

*Specify color: **-1**, red; **-2**, yellow; **-3**, blue; **-4**, green; **-5**, white.

BUSHING MOUNT PRECISION POTENTIOMETERS

Lockwasher and mounting nut supplied. Standard resistance range given; special resistances available. Resistance Code: First 2 digits indicate significant Nos.; 3rd digit number of zeros, e.g., 101 = 100 ohms.


Ⓐ

10-TURN 1-13/16" DIAMETER WIRE-WOUND MODEL 3400 (FIG. A)

Power Rating: 5 watts at 40° C. Independent Linearity: ±0.15%. Operating Temperature: 105° C max. Resistance Tolerance: ±3%. Size: 1 13/16" dia. x 1¾" lg.

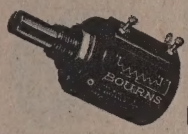
Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
3400S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K	$13.51	$11.48	$10.81	$10.13	$ 9.46	$ 8.78
	500K	27.41	23.30	21.93	20.56	19.19	17.82

Ⓑ

10-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3500 (FIG. B)

Power Rating: 2.0 watts at 70° C. Independent Linearity: ±0.20%. Operating Temperature: 125° C max. Resistance Tolerance: ±3%. Size: ⅞" dia. x 1" lg.

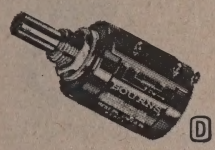
Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
3500S-1 or 3500S-2	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 125K	$13.60	$11.56	$10.88	$10.20	$ 9.52	$ 8.84
	150K, 200K, 250K	27.50	23.38	22.00	20.63	19.25	17.88
	500K	41.39	35.18	33.11	31.04	28.97	26.90


Ⓒ

10-TURN ⅞" DIAMETER CONDUCTIVE PLASTIC MODEL 3501 (FIG. C)

Power Rating: 2 watts at 70° C. Independent Linearity: ±0.5%. Operating Temperature: 105° C max. Resistance Tolerance: ±10%. Size: ⅞" dia. x 1" lg.

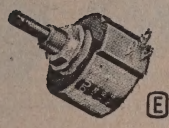
Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
3501S-1	1K, 2K, 5K, 10K, 20K, 50K, 100K, 125K, 150K, 200K, 250K, 500K	$20.26	$17.22	$16.21	$15.20	$14.18	$13.17
	1 meg, 2 megs, 4 megs	51.15	43.48	40.92	38.36	35.81	33.25


Ⓓ

10-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3509 (FIG. D)

Power Rating: 2 watts at 25° C. Independent Linearity: ±0.25%. Operating Temperature: 105° C max. Resistance Tolerance: ±5%. Size: ⅞" dia. x 1⅛" lg. Nonmetallic shaft and bushing (suffix -1); for stainless steel shaft and aluminum bushing, order 3509S-8.

3509S-1	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$8.70	$7.40	$6.96	$6.53	$6.09	$5.66
3509S-8	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	9.63	8.19	7.70	7.22	6.74	6.26


Ⓔ

5-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3520 (FIG. E)

Power Rating: 1.5 watts at 70° C. Independent Linearity: ±0.3%. Operating Temperature: 125° C max. Resistance Tolerance: ±3%. Size: ⅞" dia. x 1 1/16" lg.

3520S-1	25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K	$20.37	$17.31	$16.30	$15.28	$14.26	$13.24
	100K	34.26	29.12	27.41	25.70	23.98	22.27
	250K	48.17	40.94	38.54	36.13	33.72	31.31

Ⓕ

10-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3540 (FIG. F)

Power Rating: 2.0 watts at 70° C. Independent Linearity: ±0.25%. Operating Temperature: 125° C max. Resistance Tolerance: ±5%. Size: ⅞" dia. x ¾" lg.

3540S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$6.25	$6.25	$5.65	$5.35	$5.05	$4.75

10-TURN HYBRITON™ ⅞" DIAMETER MODEL 3541 CONDUCTIVE PLASTIC-ON-WIREWOUND (FIG. G)

Power Ratings: 2 watts at 70° C; optional second section, 1.5 watts at 70° C. Resistance Tolerance: ±10% Independent Linearity: ±0.25%. Operating Temperature Range: −55° C to +125° C. Temperature Coefficient: ±100 ppm/°C. Rotational Life: 5,000,000 shaft revolutions.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
3541-S	1K, 2K, 5K, 10K, 20K, 50K, 100K	$8.40	$7.59	$7.19	$6.79	$6.38

Ⓖ

3-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3543 (FIG. G)

Power Rating: 1 watt at 70° C. Resistance Tolerance: ±5%. Independent Linearity: ±0.25%. Operating Temperature Range: −55° C to +125° C.

3543S-1	20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K	$7.40	$7.15	$6.20	$5.85	$5.50

5-TURN ⅞" DIAMETER WIRE-WOUND MODEL 3545 (FIG. G)

Power Rating: 1.5 watts at 70° C. Resistance Tolerance: ±5%. Independent Linearity: ±0.25%. Operating Temperature Range: −55° C to +125° C.

3545S-1	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K	$7.40	$7.15	$6.20	$5.85	$5.50

Ⓗ

10-TURN ½" DIAMETER WIRE-WOUND MODEL 3707 (FIG. H)

Power Rating: 1.0 watt at 40° C. Independent Linearity: ±1.0%. Operating Temperature: 105° C max. Resistance Tolerance: ±5%. Size: ½" dia. x 1" lg.

3707S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$23.32	$19.82	$18.66	$17.49	$16.32	$15.16

KNOBPOT® WIRE-WOUND READOUT POTENTIOMETERS

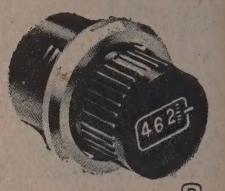
Knob, readout dial and potentiometer in one package requires less front panel space than most dials alone. Self-locking feature provides excellent stability during vibration and shock; 100% contact pressure control insures high mechanical life. Sealed to pass MIL-STD-202, Method 103, humidity. Shock: 50G. Vibration: 10G. Electrical Rotation: 3600° nom. Mechanical Life: 200,000 dial revolutions (Model 3610, 50,000 dial revolutions). Lockwasher and mounting nut included.

A

10-TURN ¾" DIA. CLOCK FACE READOUT KNOBPOT® MODEL 3600 (FIG. A)

Dial Accuracy: ±0.5% VR. Dial Repeatability: ±0.1% VR. Power Rating: 1.5 watts at 25° C. Operating Temperature: −65° C to +85° C max. Resistance Tolerance: ±5%. Size: ¾" dia. x 1" lg. FMS; 1 17/32" lg. overall.

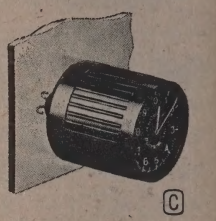
Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3600S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$21.79	$21.27	$19.30	$18.16	$17.17


B

10-TURN ⅞" DIA. DIGITAL READOUT KNOBPOT® MODEL 3610 (FIG. B)

Dial Accuracy: ±0.5% VR. Dial Repeatability: ±0.1% VR. Power Rating: 1.5 watts at 25° C. Operating Temperature: −25° C to +85° C max. Resistance Tolerance: ±5%. Size: ⅞" dia. x ¾" lg. FMS; 1 1/16" lg. overall.

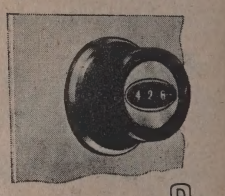
Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3610S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K	$22.26	$21.73	$19.72	$18.55	$17.54


C

10-TURN 1¼" DIA. CLOCK FACE READOUT KNOBPOT® MODEL 3640 (FIG. C)

Dial Accuracy: ±0.1% VR. Dial Repeatability: ±0.05% VR. Power Rating: 2.5 watts at 25° C. Operating Temperature: −65° C to +85° C max. Resistance Tolerance: ±3%. Size: 1¼" dia. x 1½" lg. FMS; 2 1/32" lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3640S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K, 100K, 125K, 200K, 250K	$28.75	$26.62	$23.96	$22.74	$21.30


D

10-TURN 1¼" DIA. DIGITAL READOUT KNOBPOT® MODEL 3650 (FIG. D)

Dial Accuracy: ±0.1% VR. Dial Repeatability: ±0.05% VR. Power Rating: 2.5 watts at 25° C. Operating Temperature: −25° C to +85° C max. Resistance Tolerance: ±3%. Size: 1¼" dia. x 2 9/32" lg. FMS; 2 15/32" lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3650S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K, 100K, 200K, 250K	$32.78	$30.35	$27.32	$25.92	$24.28

10-TURN ⅞" DIA. KNOBPOT® DIGITAL DIAL MODEL H-357

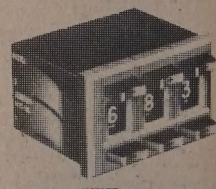
Digital dial features large, easy-to-read numbers for minimum operator error. Combines long life, accuracy and low cost in an attractive design. Functional combination integrates with multi-turn precision potentiometers and other rotating devices. Typical applications include instrumentation, process control, data processing and communications. Recessed lens offers protection from breakage; applying brake will not cause change of dial setting. Readout Accuracy: 0.1%. Readout Range: 000 to 999. Readability: 1 part in 2,000 (10 turns). Temperature Range: −15° C to +85° C. Meets MIL-STD-202, Method 103 humidity. Shaft, 0.625"–0.842" FMS; bushing, 0.342" max. FMS. Size: ⅞" dia. x 1.45" d.

E

Bourns Model	Description	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
H-357-1	Bezel—1.24" dia. x 0.15" d.	$7.25	$6.95	$6.50	$6.30	$5.95
H-357-2	Brake—1.41" dia. x 0.28" d.	7.25	6.95	6.50	6.30	5.95

KNOBPOT® INTEGRAL PUSHBUTTON POTENTIOMETER MODEL 3680

The Model 3680 integrates a precision incremental decade potentiometer with an easy-to-read digital display and a speedy pushbutton control action. Push the top PLUS button to increase resistance; push the bottom MINUS button to decrease resistance. Unit snaps easily into a 0.83" x 1.42" panel cutout. Resistance Tolerance: ±1%. Resolution: 0.1%. Accuracy of Dial Reading to Output: ±0.5% of full scale. Power Rating: 2 W at 25° C, derated to zero watts at 85° C. Operating Temperature Range: −25° C to +85° C. Terminals: Dual purpose solder lugs also fit AMP Series 110 receptacles. Size: 1.45" w. x 0.93" h. x 1.36" d. behind panel. Weight: 0.78 oz.


3680S-1

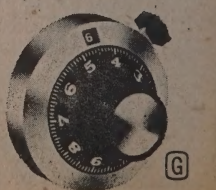
Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3680S-1	5K, 10K, 100K, 1 meg	$23.00	$21.30	$19.17	$18.19	$17.04

TURNS-COUNTING DIALS

H-490 Series (Fig. F)—1" dia.; for use with precision potentiometers or other rotating devices up to 30 turns. Readability of 1 part in 1000 for ten turns.

H-510 Series (Fig. G)—1⅜" dia.; for use with precision potentiometers or other rotating devices up to 10 turns. Readability equal to larger 1 13/16" dia. dials; excellent number definition in two-thirds the panel space

F


G

Bourns Model	Finish	Shaft Dia.	Bushing Size	Brake	Net Each, Lots of					
					1-4	5-9	10-24	25-99	100-249	250-499
H-491-1*	Clear	3/32"	¼"-32NEF-2A	No	$10.65	$9.05	$8.52	$7.99	$7.46	$6.92
H-492-1*	Clear	3/32"	¼"-32NEF-2A	Yes	10.65	9.05	8.52	7.99	7.46	6.92
H-493-1*	Black	3/32"	¼"-32NEF-2A	No	11.50	9.78	9.20	8.63	8.05	7.48
H-494-1*	Black	3/32"	¼"-32NEF-2A	Yes	11.50	9.78	9.20	8.63	8.05	7.48
H-491-3	Clear	¼"	⅜"-32NEF-2A	No	10.65	9.05	8.52	7.99	7.46	6.92
H-492-3	Clear	¼"	⅜"-32NEF-2A	Yes	10.65	9.05	8.52	7.99	7.46	6.92
H-493-3	Black	¼"	⅜"-32NEF-2A	No	11.50	9.78	9.20	8.63	8.05	7.48
H-494-3	Black	¼"	⅜"-32NEF-2A	Yes	11.50	9.78	9.20	8.63	8.05	7.48
H-510-1	Clear	⅛"	.....	Yes	10.00	8.50	8.00	7.50	7.00	6.50
H-510-2	Clear	¼"	.....	Yes	10.00	8.50	8.00	7.50	7.00	6.50

*Available with ⅛" shaft dia.; to order, substitute -2 for suffix -1 (H-491-2).

See another Bourns page for KNOBPOT® accessories.

CERMET CONTROLS

Cermet infinite resolution element offers stable performance in all environments. Resistance Tolerance: ±10%. Taper: Linear (A). Contact Resistance Variation: ±3% max. of total resistance. TC: ±150 ppm/° C. High Performance Models meet or exceed the applicable requirements of MIL-R-94 and MIL-R-23285. Single turn except otherwise noted. **High Performance Model 3852:** Housing ¾″ dia. x ¼″ lg. Resistance Range: 50 ohms to 5 megs. Power Rating: 2 watts at 70° C. Operating Temperature: −65° C to +150° C. **Multi-Turn Model 3856:** Features 3¾ turns which provide 1350° of electrical continuity travel. Housing: ¾″ dia. x ¼″ lg. Resistance Range: 50 ohms to 5 megs. Power Rating: 2 watts at 70° C. Operating Temperature Range: −65° C to +150° C. **Commercial Model 3859:** Same as Model 3852 except Operating Temperature Range: −65° C to +125° C and has plastic bushing. **High Performance Model 3862:** Housing ½″ dia. x 0.453″ lg. Resistance Range: 100 ohms to 5 megs. Power Rating: 1 watt at 125° C. Operating Temperature Range: −65° C to +175° C. All models supplied with hardware; types with locking bushings supplied with lock nut.

Available Options: (With Minimum Order Requirements.) Plain and flatted shaft ends; lug or PC terminals; other nominal resistance values; 10% audio CW taper (C) and CCW taper (F) with ±10% resistance tolerance; and ±5% resistance tolerance (H) are also available on special order.

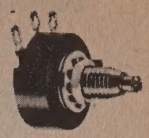
PART NUMBERING SYSTEM AND ORDERING

3852	A	16	2	101	A

Bourns Model	Bushing Style	Bushing Lgth.	Bushing Shaft Dia.	Standard Shaft Lgth. (FMS)	Code*
3852	A	⅜″	¼″	½″†	16
				⅞″	28
3852	B	½″	¼″	⅝″†	20
3852	C	¼″	⅛″	⅜″†	12
				⅞″	28
3852	E	⅜″	⅛″	½″†	16
3856	A	⅜″	¼″	⅞″†	28
3856	H	⅜″	⅛″	⅞″†	28
3859	A	⅜″	¼″	½″†	16
				⅞″	28
3859	B	¼″	¼″	⅜″†	12
3862	C	¼″	⅛″	⅜″†	12
				⅞″	28
3862	E	½″	⅛″	⅝″†	20

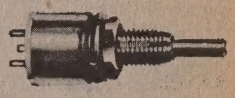
Terminal and Shaft End	Resistance Code: Value Ohms	Code	Value Ohms	Code	Taper and Resistance Tolerance
2, lugs, slotted	50‡	500	25K	253	Linear taper, ±10% resistance tolerance
	100	101	50K	503	
	250	251	100K	104	
6, printed circuit, slotted	500	501	250K	254	
	1K	102	500K	504	
	2.5K	252	1,000K	105	
	5K	502	2,500K	255	
	10K	103	5,000K	505	

*Shaft length numbering code is based on the number of 1/32″ increments in the length from the mounting surface (FMS), thus a ⅞″ shaft length is ordered as **28.** Shaft lengths other than those listed above are available with Minimum Order Requirements.
†Minimum length slotted shaft available for each model bushing combination shown. ‡50 ohm value not available in Model 3862.


Model 3852E

Model 3859B

Model 3862C


Model 3862E

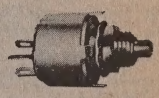
DESCRIPTION AND PRICING

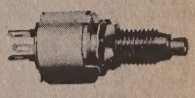
Bourns Model	Bushing Style	Bushing Lgth.	Shaft Dia.	Standard Shaft Lgth. (FMS)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3852A	⅜-32 UNEF	⅜″	¼″	½″ or ⅞″	$2.65	$2.36	$2.31	$2.20	$1.72	$1.36
3852B	⅜-32 UNEF locking	½″	¼″	⅝″	2.94	2.62	2.56	2.44	1.91	1.51
3852C	¼-32 UNEF	¼″	⅛″	⅜″ or ⅞″	2.81	2.50	2.44	2.33	1.83	1.44
3852E	¼-32 UNEF locking	⅜″	⅛″	½″	3.07	2.73	2.67	2.55	2.00	1.57
3856A	⅜-32 UNEF	½″	¼″	⅞″	6.00	5.35	5.09	4.61	3.90	3.06
3859A	⅜-32 UNEF threaded plastic	⅜″	¼″	½″ or ⅞″	2.15	1.91	1.87	1.78	1.40	1.10
3859B	Plastic snap-in	¼″	¼″	⅜″	2.15	1.91	1.87	1.78	1.40	1.10
3862C	¼-32 UNEF-2A	¼″	⅛″	⅜″ or ⅞″	4.50	3.95	3.65	2.80	2.20	1.85
3862E	¼-32 UNEF-2A locking	½″	⅛″	⅝″	4.76	4.17	3.86	2.96	2.33	1.96

CONDUCTIVE PLASTIC CONTROLS

The conductive plastic resistance element offers improved stability, low noise, and stable performance in all environments. The one-piece, molded-in terminations eliminate bonded connections and stress problems. **Housing:** ¾″ diameter. **Resistance Range:** 1K to 100K in linear tapers, 2K to 50K in audio tapers. **Power Rating:** ½ W at 70° C.

Bourns Model	Bushing Style	Bushing Lgth.	Shaft Dia.	Standard Shaft Length Lgth.	Standard Shaft (FMS) Code*	Terminal & Shaft End	Resistance Code: Value Ohms	Code	Taper and Resistance Tolerance
3851	A	⅜″	¼″	½″†	16	2, lugs, slotted	1K	102	B—Linear ±20%
				⅞″	28		2.5K	252	
				2″	64		5K	502	
	B	½″	¼″	⅝″†	20	6, PC, slotted	10K	103	
	C	¼″	⅛″	⅜″†	12		25K	253	
				⅞″	28		50K	503	
	E	¼″	⅛″	½″†	16		100K	104	
3858	A	⅜″	¼″	½″†	16				
				⅞″	28				
				2″	64				
	B	¼″	¼″	⅜″†	12				


Model RV6N


Model RV6L

*Shaft length numbering code is based on the number of 1/32″ increments in the length from the mounting surface (FMS), thus a ⅞″ shaft length is ordered as 28. †Minimum length slotted shaft available for each model bushing combination shown.

DESCRIPTION AND PRICING

Bourns Model	Bushing Style	Shaft Dia.	Standard Shaft Length FMS	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3851A	⅜-32 UNEF	¼″	½″ or ⅞″ or 2″	$2.15	$1.93	$1.88	$1.82	$1.38	$1.10
3851B	⅜-32 UNEF locking	¼″	⅝″	2.34	2.10	2.05	1.98	1.50	1.20
3851C	¼-32 UNEF	⅛″	⅜″ or ⅞″	2.22	1.99	1.94	1.88	1.42	1.14
3851E	¼-32 UNEF locking	⅛″	½″	2.46	2.21	2.15	2.09	1.58	1.26
3858A	⅜-32 UNEF	¼″	½″ or ⅞″ or 2″	1.97	1.80	1.74	1.71	1.31	1.01
3858B	Plastic Snap-in	¼″	⅜″	1.97	1.80	1.74	1.71	1.31	1.01

MODEL RV6 HOT MOLDED CARBON CONTROLS

Listed on DESC QPL for MIL-R-94, RV6 style. Resistance Tolerance: ±10% to 500K; ±20% 1 meg and above. Taper: Linear. Housing: 0.500″ dia. x 0.453″ lg. Resistance Range: 100 ohms thru 5 megs. Power Rating: ½ watt at 70° C. Operating Temperature Range: −55° C to +120° C. **Model RV6N:** ¼-32 UNEF-2A non-locking bushing, ⅜″ or ⅞″ lg. shaft with screwdriver slot; solder lug terminals. **Model RV6L:** ¼-32 UNEF-2A locking bushing, ⅝″ lg. shaft with screwdriver slot; solder lug terminals.

Bourns Model	Resistances (Use order code)	Bushing and Shaft	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
RV6NAYSL ( ) A	100 ohms to 500K	¼″ Plain	$4.51	$4.01	$2.41	$2.07	$1.77
RV6NAYSL ( ) B	1 meg to 5 meg	⅜″ Slotted	4.51	4.01	2.41	2.07	1.77
RV6NAYSD ( ) A	100 ohms to 500K	¼″ Plain	4.51	4.01	2.41	2.07	1.77
RV6NAYSD ( ) B	1 meg to 5 meg	⅞″ Slotted	4.51	4.01	2.41	2.07	1.77
RV6LAYSA ( ) A	100 ohms to 500K	½″ Locking	4.56	4.07	2.56	2.20	1.88
RV6LAYSA ( ) B	1 meg to 5 meg	⅝″ Slotted	4.56	4.07	2.56	2.20	1.88

STANDARD RESISTANCE VALUE ORDER CODE

50	(500)
100	(101)
250	(251)
500	(501)
1K	(102)
2.5K	(252)
5K	(502)
10K	(103)
25K	(253)
50K	(503)
100K	(104)
250K	(254)
500K	(504)
1 meg	(105)
2.5 meg	(255)
5 meg	(505)

LISTING CONTINUED ON FOLLOWING PAGE

CONTROLS (CONTINUED)

MODEL RVC6 CERMET CONTROLS

Listed on DESC QPL for MIL-R-23285. **Resistance Tolerance:** ±10% standard. **Taper:** linear and audio clockwise. **Resistance Range:** 1000 ohms thru 2.5 megs. **Power Rating:** ½ W @ 125° C. **Model RVC6N/S:** ¼-32 UNEF-2A plain bushing requires H-40-2 panel O-ring, ⅜" or ⅞" long shaft with slot, flatted shaft available with shaft lengths over ½". **Model RVC6L/T:** ¼-32 UNEF-2A locking bushing requires H-40-2 panel O-ring, ⅝" long shaft with slot. Models have solder lug-terminals or PC pins.

Model 3353P

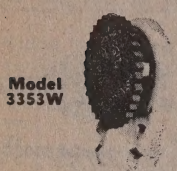
Bourns Number	Resistance (Part No.) Value	Bushing & Shaft	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RVC6NYD( )B	(102) 1K	¼" Plain ⅞" Slotted	$5.15	$4.15	$3.90	$3.50	$3.05	$2.10
	(252) 2.5K		5.15	4.15	3.90	3.50	3.05	2.10
	(502) 5K		5.15	4.15	3.90	3.50	3.05	2.10
	(103) 10K		5.15	4.15	3.90	3.50	3.05	2.10
RVC6NYL( )B	(253) 25K	¼" Plain ⅜" Slotted	5.15	4.15	3.90	3.50	3.05	2.10
	(503) 50K		5.15	4.25	3.90	3.50	3.05	2.10
	(104) 100K		5.15	4.15	3.90	3.50	3.05	2.10
	(254) 250K		5.15	4.14	3.90	3.50	3.05	2.10
RVC6LYA( )B	(504) 500K	¼" Locking ⅝" Slotted	5.30	4.28	4.01	3.60	3.14	2.16
	(105) 1 meg		5.30	4.28	4.01	3.60	3.14	2.16
	(205) 2 meg		5.30	4.28	4.01	3.60	3.14	2.16
	(255) 2.5 meg		5.30	4.28	4.01	3.60	3.14	2.16

SINGLE-TURN VARIABLE RESISTORS

Resistance change after solvent bath in Freon* TFE or Trichloroethane is less than 1%.

See beginning of Bourns listing for Part Numbering System.

*Registered DuPont trademark.



Model 3353W

19/32" DIAMETER COMPOSITION MODEL 3353

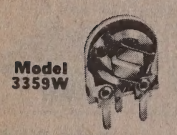
Feature wide resistance range; screwdriver and thumbwheel adjustment; compatible with standard circuit board cleaning processes. Power Rating: ⅓ watt at 60° C ambient. Resistance Tolerance: ±20% thru 1 meg; ±30% 2.5 megs and up. Operating Temperature: 0° C to +100° C. Humidity: Less than ±12.5% change in total resistance after 24 hours at 95% relative humidity, 40° C. Size: 19/32" dia. x 5/16" thk. (**P**); 9/32" thk. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-49	50-99	100-249	250-499
3353	P	500, 1K, 2.5K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs	$0.51	$0.47	$0.37	$0.31
	W					

Model 3359P

⅜" DIAMETER CERMET MODEL 3359

Features infinite resolution, cermet element; easily adjusted with any tool; low TC. Power Rating: ½ watt at 70° C ambient; ¾ watt at 40° C ambient. Resistance Tolerance: ±20%. Operating Temperature: −65° C to +125° C. Humidity: Less than 1% change in total resistance after 500 hours at 95% relative humidity, 40° C. Size: 0.375" dia. x 0.288" thk. (**P**); 0.236" thk. (**W**).



Model 3359W

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3359	P	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$1.05	$0.94	$0.83	$0.77	$0.72	$0.66
	W	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	1.08	.97	.86	.79	.74	.68

MODEL 80 ⅝" SQUARE BUILDING BLOCK POTENTIOMETERS CERMET OR PLASTIC

Advanced modular construction with factory assembled reliability and quality assurance. A panel-mount, ⅝" square potentiometer available in 1, 2, 3 or 4 sections and single or dual shafts. Unique torque control eliminates torque build-up in multiple-section units. Resistance Tolerance: plastic, ±20%, ±10% available in linear taper; cermet, ±10%, ±5% available in linear taper. Dielectric Strength: 1000V rms at sea level. Insulation Resistance: 1000 megs. Operating Temperature Range: plastic, −65° C to +125° C; cermet, −65° C to +150° C. Temperature Coefficient: plastic, ±1000 ppm/°C; cermet, ±150 ppm/°C. Shaft Torque: any number of sections, .3 to 2 oz. in. Terminals: Model 81, printed circuit pins 0.032" dia x 0.5" long; Model 82, solder lugs.

81 A 2 A — B 28 — A 23 / A 15

(A) (B) (C) (D) (E) (F) (G) (H) (I) (J)

(A) = Model and Terminal Style
81* = Printed-circuit pins
82* = Solder lugs

(B) = Bushing Style and Size
A* = Plain, ⅜" d. x ⅜" l., available with ½", ⅝" and ⅞" shaft lengths.
B* = Locking, ⅜" d. x ½" l. available with ⅝" shaft length
C* = Plain, ¼" d. x ¼" l. available with ⅜", ⅝", ⅞" shaft lengths
D* = Locking, ¼" d. x ½" l. available with ⅝" shaft length

(C) = No. of Sections

(D) = Anti-rotation lug options
A* = Single at .305" r., 90° CW
B = Double at .305" r., 90° and 270° CW
C = Single at .305" r., 270° CW
D = None
E = Single at .531" r., 90° CW
F = Single at .305" r., 180° CW
G = Single at .305" r., 0° CW
H = Single at .437" r., 90° CW

(E) = Shaft Type and End Style
B* = Single, slotted w/A or B bushing
E* = Single, slotted w/A or E bushing
G = Dual concentric, slotted w/A Bushing
K = Dual concentric, slotted w/C bushing

(F) = Shaft Length in 1/32" Increments From Mounting Surface
12* = ⅜" l. x ⅛" d.
16* = ½" l. x ¼" d.
20* = ⅝" l. x ⅛" and ¼" d.
28* = ⅞" l. x ⅛" and ¼" d.

(G) = Type of Element, Taper and Tolerance for 1st Section
A* = Cermet, Linear, ±10%
B* = Plastic, linear, ±20%
C = Cermet, CW audio, ±10%
D = Plastic, CW audio, ±20%
E = Plastic, linear, ±10%
F = Cermet, CCW audio, ±10%
G = Plastic, CCW audio, ±20%
H = Cermet, linear, ±5%

(H) = Resistance Code/Value for 1st Section

03*† = 50Ω	17* = 25K
05*† = 100Ω	18* = 50K
07* = 250Ω	20* = 100K
08* = 500Ω	22* = 250K
10* = 1K	23* = 500K
12* = 2.5K	25* = 1 meg
13* = 5K	26* = 2.5 meg
15* = 10K	27* = 5 meg

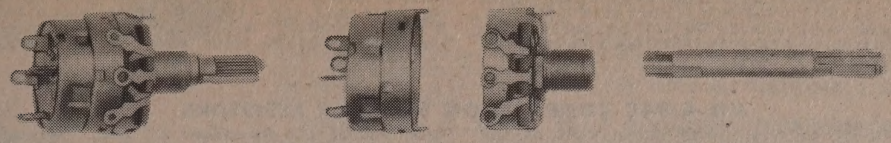
(I) Type of Element, Taper and Tolerance for 2nd Section
Same Code Applies

(J) Resistance Code/Value for 2nd Section
Same Code Applies

*Standard items normally in stock. Others, and many not listed, are available on special order.
†Available in cermet only.

CTS Industrial Variable Resistors

SERIES 45 SNAP-TOGETHER 15/16" DIA. ½ WATT COMPOSITION VARIABLE RESISTORS



Provides wide variety of combinations of ½-watt controls for industrial applications. System includes most commonly used resistance values plus four basic components combining to quickly form many hundreds of controls. Included are 16 resistance values and tapers, 8 popular shafts, 2 rotary power switches and a control dust cover. Choice of two resistance tapers, CTS A-logarithmic or D-linear. Rated ½-watt. Tolerance, ±20%. Controls equipped with ⅜"-32 UNEF-2A x ⅜" long bushing for ¼" diameter shafts, and one mounting nut. All sections may be used with or without attachable CTS rotary power switches.

HOW TO ORDER

To derive specification number from selection chart—

1. Begin with 45 to identify Series 45 controls.
2. Indicate part number of desired value and taper from "A" columns.
3. Indicate S for SPST switch, or D for DPST switch. Omit if no switch is desired (Column B).
4. Indicate part number of shaft having desired length and end trim from "C" column.

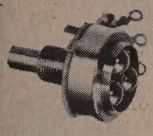
Example: Assume control is wanted with these specifications: 500K log taper, SPST switch, and a ⅞" slotted shaft. Specification number derived from the selection chart would be **45A504S04.**

Ohms	Type	A Single Control or Panel Section		B	C		
						Shaft Detail	
		Log Taper	Linear Taper	Switch	Shaft	Lgth. FMS	End Trim
500		—	D501		01	½"	SD Slot
1000		—	D102	D	02	⅝"	SD Slot
2000		—	D202	(DPST)	03	¾"	SD Slot
5000		—	D502	—	04	⅞"	SD Slot
10K		A103	D103	S	05	1"	SD Slot
20K	45	—	D203	(SPST)	06	⅞"	Flat
25K		—	D253	—	16	2"	Round
50K		A503	D503	OMIT	17	3"	Round
100K		A104	D104	FOR			
250K		—	D254	NO			
500K		A504	—	SWITCH			
1 MEG		—	D105				
2 MEG		—	D205				

SERIES 45 CONTROLS

Control Type	Switch	Net Each, Lots of 1-9	10-24	25-49	50 Up
Single	Without	$2.85	$2.19	$2.02	$1.89
Single	With	3.88	3.59	3.30	3.08

HOW TO ORDER: The following CTS variable resistors are available in the resistance values shown for each series. To order, add a 3-digit suffix to the basic CTS type number to indicate the resistance value desired. The first two digits of the suffix indicate the significant numbers; the third digit indicates the number of zeros in the resistance value. Ex.: **VA45R101A** is the CTS series VA45 with a resistance value of 100 ohms and a ±10% resistance tolerance; **VA45R504A** is the same potentiometer with a resistance of 500K and ±10% tolerance.



VA-45

SERIES VA-45 ½-WATT 15/16" DIA. VERNIER ADJUST CARBON VARIABLE RESISTORS

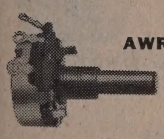
Controls are bright nickel plated. Resolution, near infinite. Independent linearity, ±10%. **Power Rating:** 100–10K ohms, ½ watt; 10.1K–100K ohms, ⅓ watt; above 100K ohms, ¼ watt at 55° C derated to no load at 85° C. **Voltage Rating:** Bushing to terminals high pot test, one minute, 1000 VAC; operating maximum, 750 VDC; across end terminals, 500 VDC. **Tolerance:** ±10%. **Rotation Angle:** Contact arm, 300°; shaft, 3700°, 10¼ turns (1° for each 12.5°). **Size:** Shaft dia., .250", length, 1"; bushing dia., ⅜"-32 UNEF-2A, length, ¼".

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
VA45R	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg	$3.60	$3.15	$2.80	$2.53	$2.29	$2.10	$1.68

AW

SERIES AW 5-WATT, 15/16" DIAMETER WIREWOUND VARIABLE RESISTORS

Wide resistance range, fully enclosed construction. Available in Type AW with non-locking type bushing, and Type AWRL with locking bushing. Resistance range, 10 ohms through 10K ohms. **Tolerance:** ±10%. **Power Rating:** 5 watts at 25° C; 4 watts at 55° C; derated to no load at 105° C. **Voltage Rating:** Bushing to terminals, high pot test, one minute, 1000 VAC. **Max. Operating Voltage:** 500 VDC. **Shaft Dia.:** .250". **Shaft Length:** Type AW, 3" FMS; Type AWRL, ½" FMS. **Trim:** Type AW, full round; Type AWRL, screwdriver slot. **Taper:** Linear. **Angle of Rotation:** 300°, ±5° total; effective rotation, 280°, approx. **Mounting:** Bushing, ⅜"-32 NEF-2A thread. Bushing length, Type AW, non-lock, ⅜"; Type AWRL, locking, ⅜". Type AW supplied with lockwasher and mounting nut. Type AWRL with lockwasher, mounting nut and locknut.



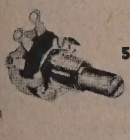
AWRL

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
AW	10, 25, 50, 100, 250, 500, 1000, 2000, 5K, 10K	$1.45	$1.35	$1.24	$1.13	$0.94	$0.88	$0.79
AWRL	10, 25, 50, 100, 250, 500, 1000, 2000, 5K, 10K	1.79	1.66	1.46	1.33	1.11	.96	.86

550LT

SERIES 205 2-WATT, ⅝" DIAMETER CERMIDE® VARIABLE RESISTOR

Miniature size resistor with dust shield construction. Resistance range, 50 ohms through 1 meg. **Tolerance:** ±10%. **Independent Linearity:** ±5%. **Power Rating:** 2 watts at 70° C derated to zero at 125° C, linear taper. **Voltage Rating:** Bushing to terminals, high pot test, one minute, 750 VAC; at 3.4" mercury, 350 VAC; maximum operating voltage, 500 VDC; across end terminals, 350 VDC, maximum, not to exceed wattage rating. **Taper:** Linear. **Mounting:** Bushing, ¼"-32 UNEF-2A, ¼" long. Shaft dia., .125". Shaft length, ⅝" FMS. **Shaft Trim:** SD Slot. **Angle of Rotation:** 300° ±5° total.



550R

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
205R	50, 100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg	$3.00	$2.50	$2.05	$1.70	$1.40	$1.15

SERIES 550 2-WATT, ¾" DIAMETER CERMET VARIABLE RESISTORS

Panel-mount controls offer high stability and reliability with low noise and long life. Excellent high frequency characteristics, and overload capacity. Closed construction. Molded base with molded-in terminal inserts. Terminals electrically bonded to termination pad. Infinite resolution, **Power Rating:** 2 watts at 70° C, derated to zero at 175° C. **Max. Operating Voltage:** 500 VDC. **Tolerance:** ±10% (1 meg, ±20%). **Taper:** Linear. **Rotation Angle:** 280° (±5°). **Size:** ¾" dia. x ½" deep, plus shaft (.250" dia. shaft); locating lug .344" from center. **Mounting:** Bushing (⅜-32).

550S

CTS Type	Shaft Lgth. FMS	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
550LT*	⅝"	50, 100, 250, 500, 1000, 2500, 5K, 10K, 25K, 50K, 100K, 250K, 500K or 1 meg	$3.21	$2.69	$2.22	$1.95	$1.71	$1.48	$1.33
550R	⅞"		3.14	2.62	2.15	1.88	1.64	1.41	1.26
550S	2"		3.15	2.63	2.16	1.89	1.65	1.42	1.27

*Has ½" long locking bushing; others, ⅜" long nonlocking bushing.

CTS Military Variable Resistors

HOW TO ORDER: The following CTS military variable resistors are available in the resistance values shown for each MIL style. To order, add a 3-digit suffix to the basic military style number to indicate the resistance value desired. The first two digits of the suffix indicate the significant figures; the third digit indicates the number of zeros. Ex.: **RV4NAYSD101A** is a MIL style RV4 variable resistor with ⅜" long bushing, ⅞" slotted shaft, 100 ohm resistance value, and ±10% resistance tolerance; **RV4LAYSA753A** is a MIL style RV4 with ½" long locking bushing, ⅝" slotted shaft, 75K resistance value, and a ±10% resistance tolerance.

MIL-R-94C COMPOSITION VARIABLE RESISTORS

Approved to MIL-R-94C and available in common shaft lengths and values. **Rotational Life:** 10% max., 25,000 cycles. **Load Life:** 10% max., 1000 hours, rated load, 70° C. **Moisture Resistance:** 6% average, 10% max., Method 106 MIL-STD-202. **Low Temperature, Storage and Operation:** 2% max. **Thermal Cycling:** 6% max. **Shock and Vibration:** 2% max. **Temperature Range:** −63° C to +150° C.

STYLE RV4 3-WATT, 1 1/16" DIAM.

Style RV4N: Linear resistance taper; ⅞" slotted shaft; ⅜" lg. bushing. **Style RV4L:** Linear resistance taper; ⅝" slotted shaft; ½" lg. locking bushing.

Style RV4

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RV4LAYSA RV4NAYSD	100, 150, 250, 350, 500, 750, 1K, 1.5K, 2.5K, 3.5K, 5K, 7.5K, 10K, 15K, 25K, 35K, 50K, 75K, 100K, 150K, 250K, 350K, 500K, 1meg	$2.81 2.40	$2.37 1.97	$2.37 1.97	$2.09 1.91	$1.93 1.79	$1.44 1.32	$1.39 1.27

STYLE RV5 ¾-WATT, ¾" DIAM.

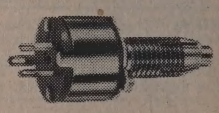
Style RV5N: Linear resistance taper; ⅞" slotted shaft with ¼" lg. bushing. **Style RV5L:** Linear resistance taper; ½" slotted shaft with ⅜" lg. locking bushing.

Style RV5

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RV5LAYSB RV5NAYSD	250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K	$3.25 3.25	$3.00 3.00	$2.90 2.82	$2.05 1.97	$1.82 1.73	$1.47 1.38	$1.42 1.33

STYLE RV6 ¾-WATT, ½" DIAM.

Style RV6N: Linear resistance taper; ⅞" slotted shaft; ¼" lg. bushing. **Style RV6L:** Linear resistance taper; ⅝" slotted shaft; ½" lg. locking bushing.



Style RV6

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RV6LAYSA RV6NAYSD	100, 250, 500, 1K, 2.5K, 5K, 10K, 15K, 25K, 50K, 100K, 150K, 250K, 500K, 1 meg, 1 meg*, 2 meg*, 2.5 meg*	$4.10 4.10	$3.70 3.65	$3.70 3.65	$2.33 2.19	$2.02 1.90	$1.71 1.61	$1.63 1.55

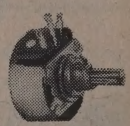
*±20% resistance tolerance. Part number should end in **B**.

MIL-R-19B WIREWOUND VARIABLE RESISTORS

Approved to MIL-R-19B and available in common shaft lengths and values. **Rotational Life:** 5% max., 25,000 cycles. **Load Life:** 3% max., 1000 hours rated load, 40° C. **Moisture Resistance:** 10% max., Method 106, MIL-STD-202. **Low Temperature, Storage and Operation:** 4% max. **Thermal Cycling:** 4% max. **Shock and Vibration:** 2% max. **Temperature Range:** −63° C to +105° C.

STYLE RA20 2-WATT, 1 17/64" DIAM.

Style RA20N: Linear resistance taper; ⅞" slotted shaft with ⅜" long bushing. **Style RA20L:** Linear resistance taper; ⅝" slotted shaft with ½" lg. locking bushing.



Style RA20

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RA20LASB RA20NASD	3, 6, 8, 10, 15, 20, 25, 35, 50, 75, 100, 150, 200, 250, 350, 500, 750, 1K, 2.5K, 5K, 7.5K, 10K, 15K	$2.88 2.88	$2.32 2.27	$2.32 2.27	$1.92 1.82	$1.59 1.50	$1.21 1.14	$1.18 1.11

STYLE RA30 4-WATT, 1 17/32" DIAM.

Style RA30N: Linear resistance taper; ⅞" slotted shaft with ⅜" lg. bushing. **Style RA20L:** Linear resistance taper; ⅝" slotted shaft with ½" lg. locking bushing.

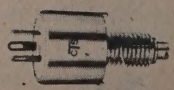
Style RA30

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RA30LASB RA30NASD	3, 6, 8, 10, 15, 20, 25, 35, 50, 75, 100, 150, 200, 250, 350, 500, 750, 1K, 2.5K, 5K, 7.5K, 10K, 15K, 25K	$3.27 3.27	$2.70 2.65	$2.70 2.65	$2.31 2.21	$1.96 1.88	$1.65 1.57	$1.58 1.51

MIL-R-23285 STYLE RVC6 ½" DIA. CERMET VARIABLE RESISTORS

Approved to MIL-R-23285, Style RVC6. Cermet element, infinite resolution. Excellent overload capability and high frequency characteristics. Rotational life, 50,000 cycles. **Power Rating:** ¾ watt at 85° C, derated to zero at 175° C. **Max. Operating Voltage:** 350 VDC. **Tolerance:** ±10%. **Rotation Angle:** 295°, ±3°. **Bushing:** ¼-32 thread.

Style RVC6N: Linear resistance taper; ⅞" slotted shaft including ¼" lg. bushing. **Style RVC6L:** Linear resistance taper; ⅝" slotted shaft including ½" lg. locking bushing.



Style RVC6LYA

Style RVC6NYD

MIL Style	Resistance Values, Ohms (Specify)	Net Each, Lots of						
		1-9	10-24	25-49	50-99	100-249	250-499	500-999
RVC6LYA RVC6NYD	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg	$5.47 5.44	$4.72 4.69	$4.07 4.04	$3.69 3.66	$3.50 3.47	$3.37 3.34	$3.18 3.15

CTS Trimmer Potentiometers

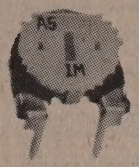
SINGLE-TURN INDUSTRIAL/COMMERCIAL TRIMMER POTENTIOMETERS

HOW TO ORDER: CTS trimmer potentiometers are available in the resistance values shown for each series. To order, add 3-digit suffix to basic CTS type number to indicate resistance value desired. The first two digits of the suffix indicate significant numbers; third digit indicates number of zeros. Ex.: **U201R101B** is a Series U201 trimmer with a resistance value of 100 ohms and ±20% tolerance; **U201R504B** is the same trimmer, but with 500K ohms

SERIES 201 ¼-WATT, 19/32″ DIAMETER COMPOSITION TRIMMER

Miniature, low cost carbon trimmers. Snap-in, self-support mounting. Type U201 mounts with knob parallel to PC board; type X201 with knob perpendicular to PC board. Blue nylon knob, slotted for either front or rear screwdriver adjustment, with rim to guide screwdriver. **Power Rating:** ¼ watt at 40° C, derated to zero at 85° C (values below 5K); ¼ watt at 55° C, derated to zero at 100° C (values of 5 K and above). **Voltage Rating:** 350 VDC max. across end terminals. **Tolerance:** ±20%. **Taper:** Linear. **Angle of Rotation:** 260° ±5° total and effective rotation. **Rotational Torque:** ¾ to 6 inch ounces. **Stop Strength:** 3 inch pounds. **Terminals:** PC type.

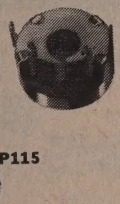
CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
U201R X201R	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg	$0.45 .45	$0.45 .45	$0.40 .40	$0.38 .38	$0.33 .33	$0.30 .30	$0.25 .25



SERIES 260 MINIATURE 10MM COMPOSITION TRIMMER POTENTIOMETERS

Low cost, low profile miniature size trimmer potentiometer designed for either horizontal or vertical mounting. Type U260 is designed for horizontal mounting with adjustment knob parallel to printed circuit board. Type X260 designed for vertical mounting with adjustment knob perpendicular to printed circuit board. Wide resistance range from 500 ohms through 1 megohm. Adjustment knob is off-white nylon; has serrated edge, slotted for top or bottom screwdriver adjustment. Top screwdriver slot is .120″ x .036″; bottom screwdriver slot, .062″ x .032″. **Tolerance:** ±20%. **Power Rating:** .2 watts at 55° C derated to no load at 100° C. **Voltage Rating:** Across end terminals, 350 VDC. **Taper:** linear. **Angle of Rotation:** 285° ±5° total-rotation; 285° effective rotation. **Rotational Torque:** .3 inch ounces to 3 inch ounces. **Stop Strength:** 8 inch ounces. **Size:** .370″ dia. x .154″.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
U260S X260S	500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg	$0.45 .45	$0.45 .45	$0.40 .40	$0.38 .38	$0.33 .33	$0.30 .30	$0.25 .25



SERIES 115 2-WATT, ¾″ DIAMETER WIREWOUND TRIMMER

Fully enclosed, 2 watt trimmers; insulated rotor construction. Long rotational life. Cross slot in nylon rotor for screwdriver adjustment or optional push-on knob attachment. **Power Rating:** 2 watts at 55° C, derated to zero at 105° C. **Voltage Rating:** 500 VDC max. operating. **Tolerance:** ±10%. **Taper:** Linear. **Angle of Rotation:** 270° ±5°. **Rotational Torque:** ½ to 10 inch ounces. **Stop Strength:** 4 inch pounds. **Terminals:** PC type. **Mounting:** Type 115, PC; Type P115, twist tab; Type 117, rivet ear.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
115R P115R 117R	5, 10, 25, 50, 100, 250, 500, 1K, 2.5K, 5K, 10K	$1.31 1.31 1.31	$1.31 1.31 1.31	$1.05 1.05 1.05	$0.79 .79 .79	$0.63 .63 .63	$0.47 .47 .47	$0.42 .42 .42

SERIES 345 ¾ WATT, ¼″ DIA. CERMET TRIMMER

Enclosed construction, only ¼″ dia., with nickel-silver alloy housing. Low temperature coefficient, cermet element, positive stop. **Power Rating:** ¾ watt at 25° C, derated to zero at 150° C; ½ watt at 85° C. **Voltage Rating:** 300 VDC max. across end terminals. **Tolerance:** ±20%. **Operating Temperature Range:** −55° C to +150° C. **Rotation:** 270°, ±5°. **Running Torque:** 2 in.-oz. **Stops:** Positive; 6 in.-oz. max. stop strength. **Size:** .250″ round x .180″ h. **Terminals:** PC pins.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
345PC	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K	$1.67	$1.58	$1.47	$1.40	$1.37	$1.32	$1.23

SERIES 360 ½-WATT, SIDE AND TOP ADJUST CERMET TRIMMERS

Top and side adjust .100″, .150″ and TO-5 pin spacings. Low temperature coefficient cermet element, flux sealed. Excellent .03% settability. Withstands chlorinated solvents. **Power Rating:** 1 watt at 25° C, ½ watt at 85° C, derated linearly to zero at 125° C. **Voltage Rating:** 300 VDC max. across end terminals. **Tolerance:** ±20%. **Operating Temperature Range:** −55° C to +125° C. **Rotation:** 285° (±5°). **Rotational Torque:** 0.1 to 5.0 in.-oz. **Stops:** Positive; 15 in.-oz. minimum stop strength. **Size:** Types 360S or 360T, side or top adjust, .360″ x .434″ x .298″ (.150″ pin centers); Types 362S or 362T, side or top adjust, .355″ x .312″ x .300″ (.100″ pin centers); Types 362X (side), 362Y and 362U (top) adjust, .355″ x .312″ x .300″ (TO-5 pin arrangement). **Terminals:** PC pins.

CTS Type	Adjustment	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
360S	Side	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K or 1 meg	$1.52	$1.42	$1.35	$0.70	$0.62	$0.58	$0.55
360T	Top		1.52	1.42	1.35	.70	.62	.58	.55
362S	Side		1.52	1.42	1.35	.72	.64	.60	.57
362T	Top		1.52	1.42	1.35	.72	.64	.60	.57
362U†	Top		1.52	1.42	1.35	.78	.70	.66	.63
362X*	Side		1.52	1.42	1.35	.73	.65	.61	.58
362Y*	Top		1.52	1.42	1.35	.78	.70	.66	.63

*TO-5 terminal spacing. †200 mil delta grid terminal spacing.

SERIES 375 1-WATT, ⅜″ DIAMETER SIDE AND TOP ADJUST CERMET TRIMMERS

Knob doubles as dust cover. **Temp. Coeff.:** +100 ppm/° C. **Power Rating:** 1 watt at 70° C, derated to no load at 125° C. **Voltage Rating:** 250 VDC max. across end terminals. **Operating Temp. Range:** −55° C to +125° C. **Tolerance:** ±20%. **Rotation:** electrical, 205° +10°. **Running Torque:** 6.0 oz. in. **Insulation Resis.:** 1000 megs, dry. **Stops:** positive, 12 in. oz. min. **Settability:** .03%. **Pin Centers:** Types 375X and 375 Y, TO-5 side and top adjust respectively; Type 375E, .100″ centers-x .400″ offset.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
375X, Y, E	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg	$0.55	$0.52	$0.49	$0.48	$0.47	$0.44	$0.41

CTS Trimmer Potentiometers

MULTI-TURN INDUSTRIAL TRIMMER POTENTIOMETERS

SERIES 186 ¾-WATT, ¾" RECTILINEAR CERMET TRIMMERS

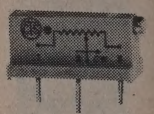
186

Cermet element, sealed for board washing. Low ±100 ppm/° C temperature coefficient. Clutch stops. **Power Rating:** ¾ watt at 25° C, ½ watt at 85° C, derated to zero at 150° C. **Voltage Rating:** 300 VDC max. across end terminals. **Operating Temperature Range:** −55° C to +150° C. **Tolerance:** ±10% (1 meg, ±20%). **Rotation:** 17 turns ±3. **Running Torque:** 0.1–5.0 inch ounces. **Insulation Resistance:** 100 megohms minimum, dry. **Size:** .750" x .190" x .250". **Terminals:** PC.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
186PC	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg	$1.35	$1.28	$1.21	$1.19	$1.15	$1.08	$1.01

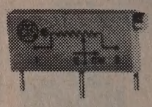
190

SERIES 190 ¾-WATT, ¾" RECTILINEAR CERMET TRIMMERS

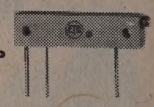

191

Cermet element, sealed construction in diallyl phthalate housing. Low temperature coefficient. Clutch stops. **Power Rating:** ¾ watt at 25° C, derated to zero at 150° C. **Voltage Rating:** 300 VDC max. across end terminals. **Operating Temperature Range:** −55° C to +150° C. **Tolerance:** ±10% (1 meg, ±20%). **Rotation:** 20 turns (±3). **Running Torque:** 0.1–5.0 in.-oz. **Insulation Resistance:** 1000 megohms minimum, dry. **Size:** Type 190, .750" x .160" x .345"; Type 191, .750" x .280" x .360"; Type 192, .750" x .160" x .345". **Terminals:** PC pins.

CTS Type	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
190PC	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K or 1 meg	$1.94	$1.84	$1.75	$1.71	$1.65	$1.51	$1.34
191PC		1.94	1.84	1.75	1.71	1.65	1.55	1.38
192PC		1.94	1.84	1.75	1.71	1.65	1.55	1.38


192

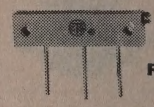
SERIES 195, 1¼" RECTILINEAR, 1-WATT CERMET TRIMMERS


195P

Cermet element immersion proof construction in diallyl phthalate housing. Meets construction requirements of MIL Style RJ12. Clutch stops. Low temperature coefficient. **Power Rating:** 1 watt at 70° C derated to no load at 150° C. **Voltage Rating:** 300 VDC max. across end terminals. **Operating Temperature Range:** −55° C to +150° C. **Tolerance:** ±10%. **Rotation:** 23 turns ±3. **Running Torque:** 0.1–5.0 in.-oz. **Insulation Resistance:** 1000 megohms, min. dry. **Size:** 1.250" x .190" x .315". **Terminals:** PC pins or wire leads.

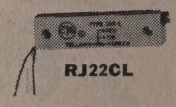
CTS Type	Terminals	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
195P	PC	50, 100, 200, 500, 1K, 2K, 5K	$4.51	$4.31	$4.07	$3.86	$3.66	$3.33	$3.18
195Y	PC*	10K, 20K, 25K, 50K, 100K,	4.42	4.22	3.99	3.78	3.59	3.26	3.12
195L	Leads	250K, 500K or 1 meg	4.51	4.31	4.07	3.86	3.66	3.33	3.18

*Same terminal spacing as RJ11CP and CTS 185PC.


RJ12CY

MULTI-TURN MILITARY TRIMMER POTENTIOMETERS

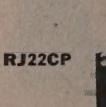
MIL STYLE RJ12 1¼" RECTILINEAR, ¾-WATT CERMET TRIMMERS


RJ22CL

Approved to MIL-R-22097F, Style RJ12, Char. C. Cermet element, immersion proof construction in diallyl phthalate housing meeting construction requirements of Style RJ12. Clutch stops. Low temperature coefficient. **Power Rating:** ¾ watt at 85° C derated to no load at 150° C. **Voltage Rating:** 300 VDC max. across end terminals. **Operating Temperature Range:** −55° C to +150° C. **Tolerance:** ±10%. **Rotation:** 23 turns (±3). **Running Torque:** 0.1–5.0 in.-oz. **Insulation Resistance:** 1000 megohms minimum, dry. **Size:** 1.250" x .190" x .315". **Terminals:** PC pins or wire leads.

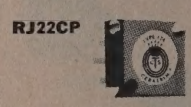
MIL Style	Terminals	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
RJ12CL	Wire leads	50, 100, 200, 500, 1K, 2K, 5K,	$4.66	$4.46	$4.22	$4.01	$3.81	$3.48	$3.33
RJ12CP	PC Pins	10K, 20K, 25K, 50K, 100K,	4.66	4.46	4.22	4.01	3.81	3.48	3.33
RJ12CY*	PC Pins	250K, 500K or 1 meg	4.57	4.37	4.14	3.93	3.74	3.41	3.27

*Same as RJ12CP except RJ11 terminal spacing.


RJ22CX

MIL STYLE RJ22 ½" SQUARE, ½-WATT CERMET TRIMMERS

Approved to MIL-R-22097F, Style RJ22, Char. C. High stability, low inductance. Molded diallyl phthalate housing. Infinite resolution, clutch stops. **Power Rating:** ½ watt at 85° C, derated to zero at 150° C. **Voltage Rating:** 400 VDC max. operating. **Tolerance:** ±10%. **Temperature Coefficient:** ±250 ppm/° C max. **Rotation:** 35 turns (±3). **Running Torque:** 0.1–5.0 in.-oz. **Size:** ½" square x .235" maximum. **Terminals:** PC pins or wire leads. **Adjusting Screw:** RJ22CW has screw on top; others on side.


RJ22CP

MIL Type	Terminals	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
RJ22CP	PC pins	50, 100, 200, 500, 1K, 2K, 5K,	$5.60	$5.30	$5.15	$5.00	$4.80	$4.65	$4.30
RJ22CW	PC pins	10K, 20K, 25K, 50K, 100K,	5.55	5.25	5.10	4.95	4.75	4.60	4.25
RJ22CX	PC pins	250K, 500K or 1 meg	5.55	5.25	5.10	4.95	4.75	4.60	4.25
RJ22CL	Leads		5.50	5.20	5.05	4.90	4.70	4.55	4.20

RJ22CW

MIL STYLE RJ24 ⅜" SQUARE, ½-WATT CERMET TRIMMERS

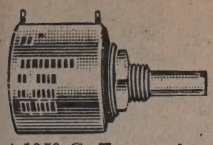
Approved to MIL-R-22097F, Style RJ24, Characteristics C requirements. Excellent heat sink qualities, high stability, low inductance. Sealed construction; clutch stops; infinite resolution. Molded diallyl phthalate housing. **Power Rating:** ½ watt at 85° C, derated to zero at 150° C. **Oper. Temperature Range:** −55° C to +150° C. **Max. Operating Voltage:** 400 VDC. **Tolerance:** ±10%. **Insulation Resistance:** 1000 megohms minimum, dry. **Rotation:** 25 turns (±3); 0.1–5.0 in.-oz. rotational torque. **Size:** ⅜" square x 13/64" thick. **Terminals:** PC pins, spaced .100" (RJ24CP has staggered pins). **Adjusting Screw:** RJ24CW has screw on top; others, on side.

RJ24CX

MIL Type	Terminals	Resistance Values, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
RJ24CP	PC pins	50, 100, 200, 500, 1K, 2K, 5K,	$6.10	$5.60	$5.35	$5.10	$4.80	$4.72	$4.58
RJ24CW	PC pins	10K, 25K, 50K, 100K, 250K,	6.05	5.55	5.30	5.05	4.75	4.67	4.53
RJ24CX	PC pins	500K or 1 meg	6.05	5.55	5.30	5.05	4.75	4.67	4.53

Clarostat Potentiometers, Decades and Dials

SMALL, 10-TURN 2-WATT POTENTIOMETER ONLY ¾" IN BODY LENGTH

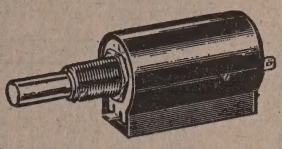


Series 73JA has brought the ten-turn potentiometer down in size, down in price and down in wear-outs. Only ¾" body length, priced less than $4.00 in quantity, and a rotational life of 500,000 cycles. **Resistance Range:** 100–100K ohms. **Resistance Tolerance:** ±5%. **Power Rating:** At 20° C, 2 watts. **Operating Temperature Range:** −55° C to +105° C. **Temperature Coefficient:** ±20 PPM/° C max. **End Resistance:** 0.25% or 1 ohm. **Noise During Adjustment (ENR):** 100 ohms, maximum. **Insulation Resistance:** 1000 megohms at 500 VDC. **Dielectric Strength:** 1000 V rms. **Actual Electrical Travel:** 3600°+10°−0°. **Linearity:** 0.25%, independent. **Mechanical Torque:** 1.5 oz.-in. maximum. **Stop Strength:** 50 oz.-in. minimum. To order, add resistance required to Clarostat No., example 73JA-**100.** See stock value, ohms, below.

Clarostat Number	Net Each, Lots of						
	1-9	10-24	25-49	50-99	100-249	250-499	500-999
73JA	$4.69	$4.52	$4.35	$4.01	$3.83	$3.69	$3.54

Stock Value, Ohms	Nominal Resolution	Stock Value, Ohms	Nominal Resolution
100	.055%	5000	.020%
200	.037%	10K	.017%
500	.030%	20K	.015%
1000	.025%	50K	.011%
2000	.021%	100K	.009%

SERIES 62JA TEN-TURN POTENTIOMETER



Opens new application areas for the advantages of multi-turn potentiometer design, including far greater resolution in trimming, better instrument control and settings for all types of electronic equipment. Resistance tolerance, ±5%. Functional output, linear. Absolute linearity, ±0.25%. Power dissipation at 25° C, 2 watts, derated to zero at 85° C. Dielectric strength, 1000 VAC. Electrical and mechanical rotation, 3600°, +10, −0. Maximum torque, 3 oz.-in. Stop strength, 50 oz.-in. Insulation resistance, 1000 megohms. Life, 100,000 shaft revolutions. Max. rotation speed, 60 rpm. Size, ⅞" dia. x 2½" overall. **$8.25**

Net Each, Lots of 1–9 ..... **$8.25**
Net Each, Lots of 10–24 ..... **$7.15**
Net Each, Lots of 25–99 ..... **6.60**
Net Each, Lots of 100–499 ..... **6.05**

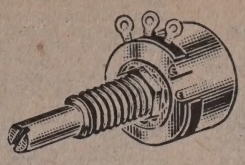
Stock Value, Ohms	Resolutions 100/Total Turns	Stock Value, Ohms	Resolutions 100/Total Turns
100*	.062%	5,000	.026%
200*	.048%	10,000	.024%
250*	.038%	20,000	.019%
500	.036%	25,000	.017%
1,000	.030%	30,000	.016%
2,000	.023%	50,000	.013%
2,500	.022%	100,000	.012%

*Absolute linearity, ±0.5%.

MODEL 250 RACK MOUNTED DECADE

Same as Model 240C except for rack mounting. Fits in standard 19" relay rack. **Size:** 19" w. x 13¼" d. x 7" h. Weight, 18½ lbs.
Model 250 Power Resistor Decade Box—Net Each **$173.25**

SERIES 381 1-WATT ⅝" DIA. POTENTIOMETERS



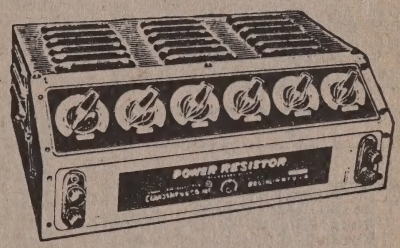
Clarostat "Quiet One" series, a new, low cost potentiometer with characteristics exceeding those of higher priced models. Features reliable, homogeneous, strain-free resistance element with 1% dynamic noise and 5% independent linearity. Mechanical parts precision machine-finished for smooth operation, long life. Manufactured to MIL-R-94 specifications. **Resistance Tolerance:** Linear, up to 500K ohms ±10%; above 500K ohms, ±20%. **Power Rating:** 1 watt max. continuous power rating for linear taper, but voltage not to exceed rating. Full rating at 70° C, derated linearly to zero watts at 120° C. Derate all non-linear tapers by multiplying wattage rating by 0.5. **Mechanical and Rotation:** 300° ±5° with switch. **Dynamic Noise:** Linear single controls maximum initial noise level 1% of total resistance. **Linearity:** ±5% independent. **Working Voltage:** 350 VDC across end terminals, power not to exceed rating. Models 381N have plain ¼" long bushing, ½" long shaft, screwdriver slotted. Models 381NS same, but equipped with attached SPST switch rated 1 amp at 125 VAC or DC. Models 381L have ⅜" shaft-locking bushing, 1/16" long shaft, screwdriver slotted. To order, add resistance required to Clarostat No., example: 381N-**100.** See Stock Values Table, below.

Clarostat Number	Shaft Length, Screwdriver Slotted	Bushing Length	Net Each, Lots of			
			1-9	10-49	50-99	100-249
381N	¾"	¼"	$2.93	$2.20	$1.88	$1.36
381NS	¾"	¼"	4.47	3.36	2.87	2.08
381L	7/16"	⅜"	3.15	2.35	2.02	1.46

TABLE OF STOCK VALUES

Ohms				
100	1000	10K	100K	1.0 meg
250	2500	25K	250K	2.5 megs
500	5000	50K	500K	5.0 megs

MODEL 240C PORTABLE DECADE

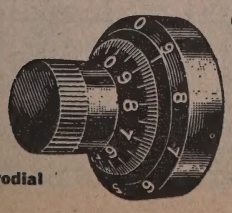


The Model 240C portable resistance decade allows the changing of resistance at a flip of a switch in a working circuit. Any ohms value can be obtained, from one ohm to 999,999 ohms, in steps of one ohm and at a maximum power rating of 225 watts, using a maximum of 1,000 volts DC or 660 volts AC. Dependable Clarostat "Greenohm" resistors are used throughout. These are inorganic-cement-coated, wire-wound power resistors. The resistors are mounted on rigid metal supports; a baffle plate separating the resistor bank from the switch assembly protects the latter against heat. Resistance changing switches are of the type that prevents a resistance breakdown between steps, thus protecting delicate meters and measuring instruments in the circuit. Pointer knobs indicate at a glance the resistance value being used.

Resistance Tolerance: ±2.0% all decades except No. 1, ±5.0%. **Max. Current:** 5 amps, No. 1; 1.5 amps, No. 2; 0.5 amp, No. 3; 0.15 amp, No. 4; 0.05 amp, No. 5; 0.005 amp, No. 6.

In a heavy gauge metal case, finished in frosted gray wrinkle, with an etched black-and-aluminum front panel. Overall length, 13"; 8½" deep; 5¾" high. Weight, 11.5 lbs.
Model 240C Power Resistor Decade Box—Net **$121.05**

CLARODIALS—10-TURN CONCENTRIC SCALE DIALS



Clarodial

Calibrated dials designed for multi-turn potentiometers up to ten turns or other rotary devices. Requires only one inch of panel space. Knob attaches directly to the shaft, and the body of the dial is mounted rigidly to the panel. Therefore, accurate readings with a ratio of 1000 to one for 10 turns are provided with zero backlash and no reading error. Made of anodized aluminum. Mounting requirements: ¼" shaft and ⅜"-32 NEF-2A bushing. Model 411 is black, has no lock. Model 412 is black, has lock. Model 461 is clear, has no lock. Model 462 is clear, has lock.

Clarostat No.	Net Each, Lots of			
	1-9	10-24	25-99	100-249
411	$7.75	$7.30	$6.95	$6.55
412	8.95	8.50	8.05	7.60
461	8.25	7.80	7.40	7.00
462	9.45	8.95	8.50	8.00

Clarostat Controls and Decades

COMPOSITION-ELEMENT

Tolerances are within RETMA standards; overall resistance tolerance ±20% through 100K ohm values and ±30% for all values above 100K ohms.

SERIES A47 ½-WATT CONTROLS

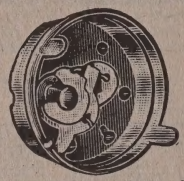
Available with factory assembled shafts at no extra charge. See general description above. Catalog Number indicates the resistance in ohms and †Curves below. Net Each..... **$1.36**

No. A47-	No. A47-	No. A47-	No. A47-
500-S	15K-S	75K-V	1 Meg-Z
750-S	15K-V	100K-S	1.5 Meg-S
1000-S	15K-W	100K-Z	2 Meg-S
1500-S	20K-S	150K-S	2 Meg-Z
2000-S	25K-S	200K-S	2.5 Meg-S
2500-S	25K-W	250K-S	3 Meg-S
3000-S	25K-V	250K-Z	3 Meg-Z
4000-S	30K-S	300K-S	4 Meg-S
5000-S	40K-S	500K-S	4 Meg-Z
7500-S	50K-S	500K-Z	5 Meg-S
10K-S	50K-W	750K-S	5 Meg-Z
10K-V	50K-Z	750K-Z	7.5 Meg-S
10K-W	75K-S	1 Meg-S	10 Meg-S
10K-Z			

†CURVES

S—Straight or uniform res. change with rotation. **U**—Left-hand 1% res. at 33⅓% of CW rotation. **V**—Right-hand 20% res. at 50% of CCW rotation. **W**—Left-hand 20% res. at 50% of CW rotation. **Z**—Left-hand (Log. audio) 10% res. at 50% of CW rotation.

TYPE "SWE" SWITCHES FOR "AD-A-SWITCH®" CONTROLS



A line of switches for installation on A47 and A47F controls. UL approved.

Clarostat No. SWE-12—SPST switch, 5 amp, 125 VAC. Net Each..... **$0.64**
Clarostat No. SWE-13—SPST switch, 15 amp, 10 VDC. Net Each..... **$0.98**
Clarostat No. SWE-20—DPST switch, 3 amp, 125 VAC. Net Each..... **$0.72**
Clarostat No. SWE-21—Modified DPST switch. One pole on, one off, or with Jumper SPDT. 3 amperes, 125 volts AC or DC. Net Each..... **$0.72**
Clarostat No. SWE-23—Modified DPST switch. One pole on, one off or with Jumper SPDT. 15 amp, 10 VDC. Net Ea... **$0.98**

"PICK-A-SHAFT®" SHAFTS

Net Each..... **$0.43**

Claro. No.	Description
SS-⅜	(Male) takes female fitting
RS-2	Round shaft, 2" long
RS-¾	Round, slotted ¾" dia., 3" long
KSS-3	Knurled, split shaft, 3" long
RS-5	Round shaft, 5" long
FS-5	Flatted shaft, 5" long
KSS-5	Knurled, split shaft, 5" long
FS-3	Flatted shaft, 3" long
RS-3	Round shaft, 3" long
DFS-½	Dble. flatted, Philco type ½" l.
FKS-¼	Fine knurled slotted, ¼" long
FKS-½	Fine knurled slotted, ½" long
KFS-3	Knurled flatted shaft, 3" long

SERIES A43 AND A43S 2-WATT WIRE-WOUND CONTROLS

A43 Controls are without switches. A43S Controls have factory attached SPST switches. Available with factory assembled shafts at no extra charge by omitting prefix "A" from number and designating shaft desired. Tolerance, ±10%.
Any Model A43—Without switch. **$1.58**
Any Model A43S—With switch... **2.39**

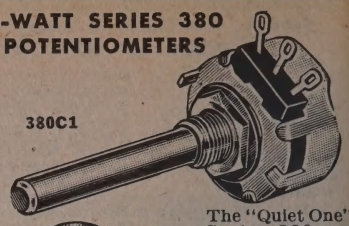
Ohms	No. A43- or A43S-	Ohms	No. A43- or A43S-
5	5	400	400
10	10	500	500
20	20	750	750
25	25	1000	1000
30	30	1500	1500
40	40	2000	2000
50	50	2500	2500
75	75	3000	3000
100	100	4000	4000
150	150	5000	5000
200	200	7500	7500
300	300	10K	10K

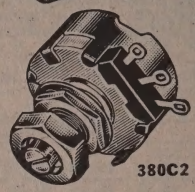
SERIES A58 WIRE-WOUND CONTROLS

Wire-wound 3-watt controls that will take any of the 13 Pick-A-Shafts. Overall resistance tolerance ±10% for all values. All controls are linear. Available with factory assembled shafts at no extra cost; just order by dropping the prefix letter "A" from the number and specify the type of shaft desired. Prices and information on request.

Resistance Ohms	Clarostat Number	Net Each
1	A58-1	$1.58
2	A58-2	1.58
4	A58-4	1.58
6	A58-6	1.58
10	A58-10	1.58
15	A58-15	1.58
20	A58-20	1.58
25	A58-25	1.58
30	A58-30	1.58
40	A58-40	1.58
50	A58-50	1.58
60	A58-60	1.58
75	A58-75	1.58
100	A58-100	1.58
200	A58-200	1.58
250	A58-250	1.58
300	A58-300	1.58
400	A58-400	1.58
500	A58-500	1.58
750	A58-750	1.58
1000	A58-1000	1.58
1500	A58-1500	1.58
2000	A58-2000	1.58
2250	A58-2250	1.58
2500	A58-2500	1.58
3000	A58-3000	1.58
4000	A58-4000	1.58
5000	A58-5000	1.58
7500	A58-7500	1.58
10K	A58-10K	1.58
15K	A58-15K	1.96
20K	A58-20K	1.96
25K	A58-25K	1.96
30K	A58-30K	2.47
40K	A58-40K	2.47
50K	A58-50K	2.47

2-WATT SERIES 380 POTENTIOMETERS





The "Quiet One" Series 380 exceeds MIL-R-94 specifications. Manufactured in a controlled environment, features stainless steel shafts. 1% dynamic noise and 5% independent linearity. Electrical tolerances are ±10% for values up to 1 megohm; ±20%, 1 meg and above. Linear taper. Specify resistance per table, below. **Size:** 1 31/32" dia. max. x 9/16" d.

Clarostat Model 380C1, Taper S—2" round shaft FMS; ⅜" long bushing with ⅜-32-NEF-2A thread. Net Each..... **$2.15**
Clarostat Model 380C2, Taper S—⅝" screwdriver slotted shaft FMS; with ½" split locking bushing. Net Each.. **$2.48**
Clarostat Model 380C3, Taper S—⅞" screwdriver slotted shaft FMS; ⅜" long bushing with ⅜-32-NEF-2A thread. Net Each..... **$2.15**

Ohms	Ohms	Ohms	Ohms
100	2500	50K	1 meg
150	3500	75K	1.5 meg
250	5000	100K	2 meg
350	7500	150K	2.5 meg
500	10K	200K	3 meg
750	15K	250K	3.5 meg
1000	20K	350K	4 meg
1500	25K	500K	5 meg
2000	35K	750K	

"HUMDINGER®" 2-WATT, WIRE-WOUND CONTROLS

SERIES U39 "HUMDINGER" CONTROLS

The design of terminals and mounting tabs meets these requirements: Above chassis mounting, as a potentiometer or rheostat; printed circuit mounting, as a potentiometer or rheostat. A fiber adapter plate is furnished with each control. Clarostat number indicates the U39 series followed by the total resistance ohms and, in some cases, the bias resistance. Tolerance, ±20%. Net Each..... **$0.76**

Clarostat Number			
U39-1.5	U39-150	U39-700	U39-2000-100
U39-5	U39-175	U39-700-200	U39-3000
U39-8	U39-200	U39-800	U39-3000-700
U39-15	U39-300	U39-800-50	U39-4000
U39-50	U39-500	U39-1000	U39-4000-350
U39-75	U39-500-100	U39-1000-100	U39-4000-1000
U39-100	U39-600	U39-1500	U39-5000
U39-125	U39-650	U39-2000	

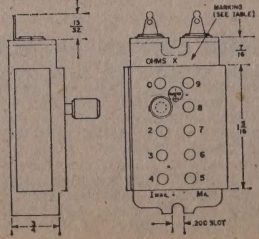
SERIES 39 "HUMDINGER" CONTROLS

Control in housing is mounted by rivet, screw or other means to chassis. Clarostat number indicates the 39 series followed by the total resistance ohms. Tolerance, ±20%. Net Each..... **$0.64**

Clarostat Number			
39-8	39-200	39-1500	39-4000
39-50	39-500	39-2000	39-5000
39-100	39-1000	39-3000	

MINIATURE DECADE BOXES

Each unit consists of a network of five ±1% metal film resistors. Desired value is selected by inserting banana plug in hole adjacent to desired decade digit. Housing is interlocking construction (tongue and groove) interconnecting up to 7 units for a complete range .1 to 999,999.9 ohms in .1 ohm steps. External connections by solder lug and banana plug receptacles; shorting bar (supplied) or dual shorting banana plug for connections between ganged units. **Temp. Coef.:** Less than 100 ppm. **Temp.:** 40° C max. at rated current; derate to zero at 85° C. **Size:** 1½" w. x ⅞" d. x 2¾" h., body. Wt., 2 oz. per unit.

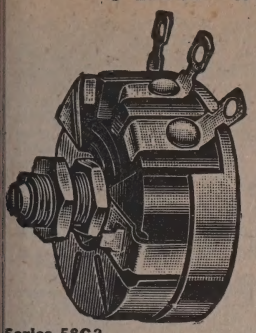


Clarostat Number	Total Resis., Ohms	Resis./ Step, Ohms	Accuracy *	Max. Current	Net Each
260-1†	0.9	0.1	±5%	1 amp	$ 4.57
260-2†	9	1.0	±1%	350 mA	4.57
260-3	90	10	±1%	100 mA	4.57
260-4	900	100	±1%	35 mA	4.57
260-5	9K	1K	±1%	10 mA	4.57
260-6	90K	10K	±1%	3.5 mA	4.57
260-7	900K	100K	±1%	1 mA	4.57
Set of 1 each of above.....					31.77
6 each of above, with rack.....					191.62

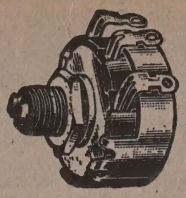
*Contact resis., .005-.03 ohms; .01 ohm typical. †Resistors are wire-wound.

CLAROSTAT CONTROLS

"C LINE®" WIRE-WOUND INDUSTRIAL CONTROLS



Series 58C2



Series 43C2

Clarostat "C Line" controls are designed primarily for industrial applications. They feature moisture and dust-proof construction, corrosion proof finish and locking or standard bushing. Suffix C1 indicates 1⅜" round shaft beyond bushing and ⅜" long bushing with ⅜-32-NEF-2 thread. Suffix C2 indicates ⅛" screwdriver slotted shaft, ½" split locking bushing. One nickel plated hex mounting nut and internal lock washer supplied with all units. All C2 units supplied with a nickel plated machined hex locking nut. Switches, ohmages not listed, tapers not listed, bushings and shaft lengths not listed, and dual combinations are also available on special order. (Prices and delivery information available on request.)

SERIES 43C1 AND 43C2

2-WATT CONTROLS

Smallest 2-watt wire-wound control available up to 50K ohms. Tolerance ±5%. Independent Linearity ±2%.

Ohms	Net Each 43C1	Net Each 43C2	Ohms	Net Each 43C1	Net Each 43C2
5	$2.60	$2.89	1000	$2.60	$2.89
10	2.60	2.89	1500	2.60	2.89
20	2.60	2.89	2000	2.60	2.89
25	2.60	2.89	2500	2.60	2.89
30	2.60	2.89	3000	2.60	2.89
40	2.60	2.89	4000	2.60	2.89
50	2.60	2.89	5000	2.60	2.89
75	2.60	2.89	7500	2.60	2.89
100	2.60	2.89	10K	2.60	2.89
150	2.60	2.89	15K	2.95	3.25
200	2.60	2.89	20K	2.95	3.25
300	2.60	2.89	25K	2.95	3.25
400	2.60	2.89	30K	3.47	3.82
500	2.60	2.89	40K	3.47	3.82
750	2.60	2.89	50K	3.47	3.82

SERIES 58C1 AND 58C2

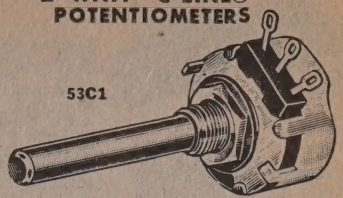
3-WATT CONTROLS

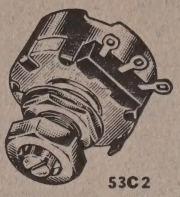
Tolerance ±5%. Linearity ±1%.

Ohms	Net Each 58C1	Net Each 58C2	Ohms	Net Each 58C1	Net Each 58C2
1	$2.60	$2.89	500	$2.60	$2.89
2	2.60	2.89	750	2.60	2.89
4	2.60	2.89	1000	2.60	2.89
6	2.60	2.89	1500	2.60	2.89
10	2.60	2.89	2000	2.60	2.89
15	2.60	2.89	2500	2.60	2.89
20	2.60	2.89	3000	2.60	2.89
25	2.60	2.89	5000	2.60	2.89
30	2.60	2.89	7500	2.60	2.89
40	2.60	2.89	10K	2.60	2.89
50	2.60	2.89	15K	2.95	3.25
60	2.60	2.89	20K	2.95	3.25
75	2.60	2.89	25K	2.95	3.25
100	2.60	2.89	30K	3.47	3.82
200	2.60	2.89	40K	3.47	3.82
300	2.60	2.89	50K	3.47	3.82
400	2.60	2.89			

2-WATT "C-LINE®" POTENTIOMETERS

53C1





53C2

Molded composition element type totally sealed against moisture. High quality resistance device has high stability under extreme conditions. Use for critical applications such as test equipment, military, computers, servo mechanisms, etc. One-piece wiper assembly; carbon to carbon contact for low noise level; stainless steel shaft; gold plated terminals. Electrical tolerances are ±10% for values up to 1 megohm; ±20%, 1 meg. and above. "S" taper supplied. **Size:** 1⅛" dia. x ⅞" deep.

Clarostat Model 53C1, Taper S— $2.15
Specify resistance value. Net Each

Clarostat Model 53C2, Taper S— $2.48
Specify resistance. Net Each.....

Ohms	Ohms	Ohms
50	7.5K	500K
100	10K	750K
150	15K	1 meg
250	20K	1.5 meg
350	25K	2 meg
500	35K	2.5 meg
750	50K	3 meg
1000	75K	3.5 meg
1500	100K	4 meg
2000	150K	5 meg
2500	200K	7.5 meg
3500	250K	10 meg
5000	350K	

MILITARY WIRE-WOUND AND CARBON POTENTIOMETERS

RV4LAYSA, 53C2

MIL-R-19A VARIABLE WIRE-WOUND POTENTIOMETERS

Certified for MIL-R-19A and available in common shaft lengths and values. Linear taper. **Tolerance:** ±10%. **Ratings:** RA10, one watt. RA20, two watts. RA30, four watts **Bushing and Shaft:** Specify by letters (i.e. RA20**NASD**351A). RA10: NASD, ⅞" lg. x ¼" dia.; NASL, ⅝" lg. x ¼" dia.; LASM, 1⅛" lg. x ¼" dia., lock bushing. RA10, 20: LASD, ⅞" lg. x ¼" dia., lock bushing. RA20, 30: NASA, 1⅛" lg. x ¼" dia.; NASD, ⅞" lg. x ¼" dia.; LASB, ⅝" lg. x ¼" dia., lock bushing. All have slotted shafts.

Ohms ±10%	No. RA10()-, RA20()-, RA30()-	Ohms ±10%	No. RA10()-, RA20()-, RA30()-
3	3R0A*	350	351A
6	6R0A*	500	501A
8	8R0A*	750	751A
10	100A*	1000	102A
15	150A	1500	152A
20	200A*	2000	202A
25	250A	2500	252A
35	350A*	3500	352A*
50	500A	5000	502A*
75	750A	7500	752A*
100	101A	10K	103A*
150	151A	15K	153A*
200	201A	20K	203A†
250	251A	25K	253A†

*Not available in one-watt type. †Not available in one- or two-watt types.

MIL-R-94B VARIABLE 2-WATT CARBON POTENTIOMETERS

Certified for MIL-R-94B and available in common shaft lengths and values. Linear taper. **Tolerance:** ±10% unless otherwise specified. **Rating:** 2 watts. **Bushing and Shaft:** Specify by letters (example: RV4**NAYSD**101A, or 53C3-100-S): NAYSD (53C3) for standard bushing with ⅞" l. x ¼" dia. slotted shaft; LAYSA (53C2) for lock bushing and ⅝" l. x ¼" dia. slotted shaft. **Note:** Where no military number is shown, no MIL value is available; and, only the commercial version may be ordered (53C). All others are dual-marked.

Resis., Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-	Resis. Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-	Resis., Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-
50	500A	50-S	7500	752A	7500-S	500K	504A	500K-S
100	101A	100-S	10K	103A	10K-S	750K†	754B	750K-S
150	151A	150-S	15K	153A	15K-S	1 meg†	105B	1 Meg-S
250	251A	250-S	20K	.....	20K-S	1.5 meg†	155B	1.5 Meg-S
350	351A	350-S	25K	253A	25K-S	2 meg†	205B	2 Meg-S
500	501A	500-S	35K	353A	35K-S	2.5 meg†	255B	2.5 Meg-S
750	751A	750-S	50K	503A	50K-S	3 meg†	.....	3 Meg-S
1000	102A	1000-S	75K	753A	75K-S	3.5 meg†	355B	3.5 Meg-S
1500	152A	1500-S	100K	104A	100K-S	4 meg†	.....	4 Meg-S
2000	.....	2000-S	150K	154A	150K-S	5 meg†	505B	5 Meg-S
2500	252A	2500-S	200K	.....	200K-S	10 meg†	.....	10 Meg-S
3500	352A	3500-S	250K	254A	250K-S			
5000	502A	5000-S	350K	354A	350K-S			

MIL-R-94B HOT MOLDED ½-WATT CARBON POTENTIOMETERS

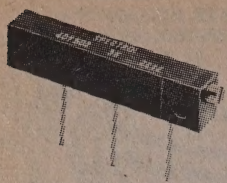
Rated 0.5 watt at 70° C, derated to zero at 120° C. Available with standard (RV6NAYSD) or locking (RV6LAYSA) bushing. Dia., ½"; 350 WVDC.

Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-
100	101A	2,500	252A	25,000	253A	250,000	254A
250	251A	5,000	502A	50,000	503A	500,000	504A
500	501A	10,000	103A	100,000	104A	1 meg	105A
1000	102A	15,000	153A	150,000	154A		

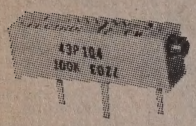
INDUSTRIAL NET PRICES

MIL or (Clarostat) Type*	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RV4NAYSD- or (53C3-)	$1.95	$1.60	$1.60	$1.50	$1.25	$0.92
RV4LAYSA- or (53C2-)	2.25	1.90	1.90	1.58	1.33	.99
RV6NAYSD-	5.00	3.65	3.65	2.19	1.90	1.61
RV6LAYSA	5.00	3.88	3.88	2.33	2.02	1.71
RA20NAS( )-	3.00	2.01	2.01	1.41	1.16	.88
RA20LAS( )-	3.00	2.09	2.09	1.49	1.24	.95
RA30NAS( )-	3.00	2.19	2.19	1.59	1.34	1.06
RA30LASB-	3.00	2.27	2.27	1.67	1.42	1.14
RA10NAS( )-	6.28	4.76	4.13	3.49	3.05	2.83*
RA10LAS( )-	6.50	4.94	4.27	3.60	3.55	2.92*

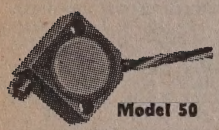
*Ordering number must show bushing and shaft desired (as described above) and appropriate suffix to indicate ohms. Example: RA20**NASD3R0A.** †Tol., ±20%. *Larger quantity pricing on request.



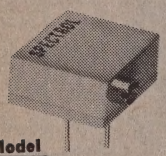
Models 40, RT12C2



Model 43



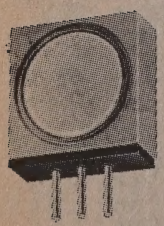
Model 50



Model RT24C2

Model 51

Model 53



Model 55

Model 62

TRIMMING POTENTIOMETERS

HOW TO ORDER

Spectrol basic number is followed by available terminations: Suffix **L,** color coded lead wires; **M, P, S, T, W, X, Y, H, V,** and **Z,** printed circuit pins. **First Numeral Suffix:** Indicates terminals (e.g., 55-**1**-8): **-1,** Teflon* insulated stranded 6″ leads (Models 53 and 62, round configuration with PC pins 180° from shaft head); **-2,** PC pins 90° from shaft head; **-3,** PC pins 180° from shaft head; **-4,** PC pins from base, horizontal mounting; **-5,** solder hooks 180° from shaft. **Second Numeral Suffix:** Defines shaft and other features (e.g., 50-1-**1**): **-1,** slotted fillister shaft head (Model 53 and 62, std. ohm ±20% RT tol.); **-2,** Models 53 and 62, ±10% RT tol.; **-8,** 23-turn 0.083″ dia. shaft, stops, clutch and color-coded leads (Model 84, screwdriver adjust); **-10,** MIL version equivalent per separate price table (Model 84, knob adjust); **-11,** stops and clutch, slotted fillister head shaft. **Final Numeral Suffix:** (Resistance Code): First 2 digits indicate significant nos.; 3rd digit number of zeros, e.g., 101 = 100 ohms. *Reg. DuPont trademark.

MULTI-TURN WIRE-WOUND MODEL 40

TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 1 watt max. at 70° C. Turns: 22. Size: 0.190″ w. x 0.315″ h. x 1.250″ lg.

Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
40P, 40Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.89	$3.63	$3.39	$3.16	$2.95	$2.77
	20K	4.96	4.62	4.32	4.03	3.76	3.53
	50K	7.25	6.77	6.32	5.89	5.50	5.17
	100K	8.09	7.56	7.05	6.57	6.14	5.77
40L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	4.32	4.03	3.77	3.51	3.28	3.08
	20K	5.39	5.02	4.70	4.38	4.09	3.84
	50K	7.68	7.17	6.70	6.24	5.83	5.48
	100K	8.52	7.96	7.43	6.92	6.47	6.08

MULTI-TURN WIRE-WOUND MIL STYLE RT12 (MODEL 40)

MIL approved per MIL-R-27208. TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 1 watt max. at 70° C. Turns: 22. Size: 0.190″ w. x 0.315″ h. x 1.250″ lg.

RT12C2P, Y	50, 100, 200, 500, 1K, 2K, 5K, 10K	$4.79	$4.47	$4.18	$3.89	$3.64	$3.41
	20K	5.86	5.46	5.11	4.76	4.45	4.17
RT12C2L	50, 100, 200, 500, 1K, 2K, 5K, 10K	5.64	5.26	4.93	4.59	4.29	4.02
	20K	6.71	6.25	5.86	5.46	5.10	4.78

MULTI-TURN CERMET MODEL 43

TC: ±100 ppm/° C. Resistance Tolerance: ±10%. Power Rating: 0.75 watt max. at 25° C. Turns: 20. Size: 0.190″ w. x 0.250″ h. x 0.750″ lg.

43P, 43W, 43Y	10, 20, 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	$1.35	$1.25	$1.20	$1.15	$1.10	$1.05

MULTI-TURN WIRE-WOUND MODEL 50

TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 0.75 watt max. at 85° C. Turns: 23. Size: 0.190″ w. x 0.375″ h. x 0.405″ lg.

Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
50-1, 50-2, 50-3, 50-4	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$6.89	$6.43	$6.01	$5.60	$5.23	$4.91
	20K	7.77	7.25	6.79	6.32	5.90	5.54
	50K	8.30	7.74	7.24	6.75	6.30	5.92

MULTI-TURN WIRE-WOUND MIL STYLE RT24 (MODEL 51)

MIL approved per MIL-R-27208. TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 0.75 watt max. at 85° C. Turns: 23. Size: 0.190″ w. x 0.375″ h. x 0.375″ lg.

51	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.12	$4.77	$4.47	$4.16	$3.89	$3.65
	20K	5.66	5.28	4.94	4.60	4.30	4.03
RT24C2P, W, X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	4.80	4.50	4.25	3.95	3.80	3.65

MULTI-TURN CERMET MODEL 52

TC: ±100 ppm/° C. Resistance Tolerance: ±5%. Power Rating: ½ W at 85° C. Turns: 25. Size: 0.19″ w. x 0.375″ h. x 0.375″ lg.

52P, 52W, 52X, 52M, 52Y, 52Z, 52R, 52N	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	$3.70	$3.45	$3.25	$3.10	$2.95	$2.80

SINGLE-TURN CERMET MODEL 53

TC: ±100 ppm/° C. Resistance Tolerance: ±20%; ±10% available. Power Rating: 0.5 watt max. at 85° C. Turns: One. Size: 0.343″ dia. x 0.343″ h. (top adjust); 0.313″ w. x 0.355″ h. x 0.344″ lg. (side adjust). Specify when ordering.

53-1, 53-2	10, 20, 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg	$1.95	$1.82	$1.70	$1.59	$1.48	$1.39

MULTI-TURN WIRE-WOUND MIL STYLE RT22/MODEL 55

MIL Style*RT22 approved to MIL-R-27208. TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 1.5 watts max. at 70° C. Turns: 23. Size: 0.190″ w. x 0.500″ h. x 0.530″ lg.

55-1, 55-2, 55-3, 55-4	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$6.89	$6.43	$6.01	$5.60	$5.23	$4.91
	20K	7.77	7.25	6.79	6.32	5.91	5.54
	50K	8.30	7.74	7.24	6.75	6.30	5.92
RT22C2L, RT22C2P, X, W	50, 100, 200, 500, 1K, 2K, 5K, 10K	7.59	7.08	6.63	6.17	5.77	5.41
	20K	8.57	7.99	7.48	6.97	6.51	6.11

SINGLE-TURN CERMET MODEL 62

Meets or exceeds all requirements of MIL-R-22097. TC: ±100 ppm/° C. Resistance Tolerance: ±20%; ±10% available. Power Rating: 0.75 watt max. at 25° C. Turns: One. Size: 0.250″ dia. x 0.180″ h. (top adjust); 0.250″ sq. (side adjust). Specify when ordering.

Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
62-1, 62-2, 62-3	10, 20, 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K 20K, 50K, 100K, 200K, 500K, 1 meg	$1.70	$1.60	$1.50	$1.45	$1.35	$1.25

TRIMMING POTENTIOMETERS (CONTINUED)

SINGLE-TURN WIRE-WOUND MODEL 84

TC: ±50 ppm/° C. Resistance Tolerance: ±5%. Power Rating: 1.5 watts max. at 70° C. Turns: One. Size: 0.500″ dia. x 0.180″ h. (84-3-8); 0.550″ dia. x 0.270″ h. (84-3-10). Both types have PC termination; available with solder hook termination; prices on request.

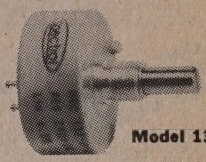
Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
84-3-8	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.62	$3.37	$3.16	$2.94	$2.74	$2.58
	20K	4.06	3.79	3.55	3.30	3.09	2.90
84-3-10	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	4.41	4.12	3.85	3.59	3.35	3.15
	20K	4.94	4.60	4.30	4.01	3.75	3.52
84-5-6	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	3.62	3.37	3.16	2.94	2.74	2.58
	20K	4.06	3.79	3.55	3.30	3.09	2.90

Models 84-3-8, 87-11

Models 84-3-10, 87-21

BUSHING MOUNT PRECISION POTENTIOMETERS

All models meet or exceed applicable MIL and commercial specs for rotational load life, temperature range, shock, vibration, humidity and salt spray. Feature extra long resistance elements to provide the best electrical resolution available; "whisker" slip-ring brush assures positive contact under severe shock and vibration for long term reliability, low torque and long rotational life. Servo, bushing and screw mountings available as standard options. Operating Temperature Range: −55° C to +125° C except as otherwise noted. Resistance Code: First 2 digits indicate significant nos.; 3rd digit, number of zeros, e.g., 101 = 100 ohms.



Model 132

SINGLE-TURN WIRE-WOUND MODEL 132

Resistance Tolerance: ±3%. Linearity Tolerance: 100 ohms, ±1.0%; 200 ohms up, ±0.5%. Power Rating: 2.75 watts max. at 40° C. Temperature: 105° C max. Size: 1.312″ dia. x 0.625″ lg.; shaft, 0.250″ dia.

Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
132	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K	$8.30	$7.75	$7.25	$6.75	$6.30	$5.95

Model 140

SINGLE-TURN WIRE-WOUND MODEL 140

Resistance Tolerance: ±5%. Linearity Tolerance: ±1.0%. Power Rating: 2 watts max. at 40° C. Size: 0.500″ dia. x 0.305″ lg.; shaft, 0.125″ dia.

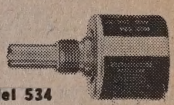
140	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K	$7.30	$6.80	$6.35	$5.90	$5.50	$5.20

Model 162

SINGLE-TURN WIRE-WOUND MODEL 162

Resistance Tolerance: ±5%. Linearity Tolerance: ±0.30%. Power Rating: 2 watts max. at 40° C. Size: 0.500″ dia. x 1.000″ lg.; shaft, 0.094″ dia.

162	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 50K	$12.75	$11.90	$11.15	$10.35	$9.70	$9.10

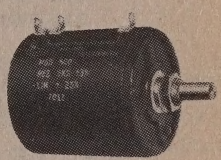


Model 534

10-TURN WIRE-WOUND MODEL 534

Resistance Tolerance: ±5%. Linearity Tolerance: ±0.25%. Power Rating: 2 watts max. at 70° C. Size: 0.875″ dia. x 0.750″ lg.; shaft, 0.250″ dia.

Spectrol Model	Resistance Values, Ohms	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
534	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$5.95	$5.80	$5.65	$5.35	$5.05	$4.75



Models 830, 860

THREE-TURN WIRE-WOUND MODEL 830

Resistance Tolerance: ±3%. Linearity Tolerance: ±0.25%. Power Rating: 3 watts max. at 40° C. Size: 1.812″ dia. x 1.220″ lg.; shaft, 0.250″ dia.

830	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K	$10.00	$9.70	$9.50	$9.00	$8.75	$8.50

TEN-TURN WIRE-WOUND MODEL 860

Resistance Tolerance: 25 ohms to 100 ohms, ±5%; 200 ohms up, ±3%. Linearity Tolerance: ±0.25% Power Rating: 8 watts max. at 40° C. Size: 1.812″ dia. x 2.000″ lg.; shaft, 0.250″ dia.

860	25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K	$10.00	$9.70	$9.50	$9.00	$8.75	$8.50

Model 15-1-11

MODEL 87 ROTARY SWITCHES

Half-inch switches designed with only two moving parts. Mount directly on printed circuit boards or panel mounting. Switch Action: Positive detent, 36° indexing, stops. Contacts: Rated 250 mA at 28 VDC. Life: 4,000 switching operations, per position. Contact Resistance: 0.05 ohm max. Operating Temperature: −65° C to +150° C. Types listed are single pole, 10-position, non-shorting design; double pole with 5 positions per pole max. and three pole with three positions per pole max. are also available. Prices and specifications on request.

Spectrol Model	Description	Size, Inches	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
87-11-19	Screwdriver adjust	0.500 dia. x 0.190 h.	$4.10	$3.75	$3.50	$3.25	$3.15	$2.90
87-21-19	Knob adjust	0.555 dia. x 0.280 h.	4.75	4.35	4.05	3.80	3.65	3.35
87-31-10	Bushing panel mtg.	0.500 dia. x 0.480 h.	5.25	4.80	4.50	4.20	4.00	3.70

Model 11-1-11

Model 21-1-11

PRECISION MULTIDIALS®

Concentric and digital turns-counting dials for use on multi-turn potentiometers and other rotating devices. Shaft Bore: 0.250″.

Spectrol Model	No. of Turns	Minor Scale Div. Turns	Finish, Chrome	Size, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
11-1-11	11	1/50	Satin‡	1.000 dia. x 0.812 h.	$ 9.15	$ 8.55	$ 8.00	$ 7.45	$ 6.95	$ 6.50
15-1-11	10	1/500	Satin	1.000 sq. x 1.750 h.	12.75	11.90	11.15	10.35	9.70	9.10
15-2-11	100	1/500	Satin	1.000 sq. x 1.750 h.	16.00	14.00	13.10	12.20	11.40	10.70
16-1-11	15	1/50	Clear#	0.875 dia. x 0.875 h.	7.70	7.50	7.30	7.10	6.85	6.50
21-1-11	15	1/100	Satin‡	1.812 dia. x 1.000 h.	8.85	8.25	7.70	7.20	6.72	6.30
25-1-13	11*	1/500	Satin	1.812 dia. x 1.625 h.	21.90	20.45	19.10	17.80	16.65	15.60
25-4-13	100†	1/500	Satin	1.812 dia. x 1.625 h.	23.60	22.05	20.65	19.20	17.95	16.85

*Three digit. †Four digit. ‡Also available with brush chrome finish; change 1 in suffix to 3 (11-1-31, 21-1-31). #Anodized finish.

Model 25-1-13

Spectrol Trimming Potentiometers

Model 63

SINGLE-TURN CERMET MODEL 63

TC: ±100 ppm/° C. Resistance Tolerance: ±20%, ±10% available. Power Rating: ½ W at 70° C. Turns: One. Size: 0.19″ w. x 0.375″ h. x 0.375″ lg.

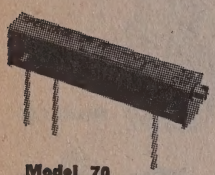
Spectrol Model	Resistance Values, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
63P, 63T, 63H, 63X, 63S, 63V, 63M	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	$0.99	$0.89	$0.80	$0.70	$0.65	$0.60

Model 64

MULTI-TURN CERMET MODEL 64

TC: ±100 ppm/° C. Resistance Tolerance: ±10%. Power Rating: ½ W at 70° C. Turns: 25. Size: 0.19″ w. x 0.375″ h. x 0.375″ lg.

64P, 64W, 64X, 64M, 64Y, 64Z, 64R, 64N	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	$1.79	$1.68	$1.57	$1.46	$1.37	$1.28



Model 70

MULTI-TURN CERMET MODEL 70

TC: ±100 ppm/° C. Resistance Tolerance: ±10%. Power Rating: 1 W at 85° C. Turns: 20. Size: 0.19″ w. x 0.315″ h. x 1.25″ lg.

70P, 70Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	$2.21	$2.06	$1.93	$1.79	$1.68	$1.57
70L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 meg	2.66	2.48	2.32	2.16	2.02	1.89

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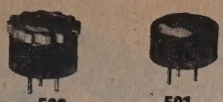

500, 550

501, 502

506, 556

30

31

170

171

172

20-00

20-10

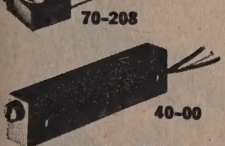
20-207

20-208

70-207

70-10

70-208


40-00

40-10

40-20

901-20

INDUSTRIAL/COMMERCIAL SINGLE-TURN TRIMMERS

WIRE-WOUND ½" ROUND TYPE 500

Quality performance at lowest cost. Top or side adjust. **Resistance Tolerance:** ±10%. **Power Rating:** 1 watt at 50° C ambient; derate to 0° at +125° C. **Insulation Resistance:** 1000 megs at 500 VDC. **Temp. Coef.:** ±70 ppm/° C max. **Torque:** 7.5 oz.-in. max. **Temp. Range:** −55° C to +125° C. **Adjustment Ratio:** 1:1. **Dielectric Strength:** 1000 VAC. **Terminals:** Types 500, 501, 502, .028" dia. x .187" lg. pins. Type 506, .028" dia. pins. **Size:** Type 500, .562" dia. x .325" h.; type 501, .500" dia. x .325" h.; type 502, .500" dia. x .235" h.; type 506, .500" dia. x .412" thk.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
500, 501, 502	10, 20, 50, 100, 200,500, 1K, 2K, 5K, 10K	$2.18	$2.00	$1.85	$1.71	$1.60	$1.41	$1.34	$1.25
	20K	2.40	2.20	2.03	1.89	1.76	1.55	1.47	1.39
	50K	2.75	2.52	2.32	2.16	2.01	1.78	1.68	1.58
506	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	2.85	2.62	2.42	2.24	2.09	1.85	1.75	1.70
	20K	3.15	2.88	2.66	2.47	2.31	2.04	1.92	1.85
	50K	3.58	3.28	3.02	2.81	2.63	2.32	2.19	2.07

WIRE-WOUND 5/16" CUBE TYPES 30, 31

Subminiature, low-cost units have self-locking shaft for stable settings, silver-brazed tab connections for reliability. **Resistance Tolerance:** ±10%. **Rating:** ½ watt at 60° C. **Insulation Resistance:** 100 megs at 500 VDC. **Temp. Coef.:** ±70 ppm/° C max. **Torque:** 4 oz.-in. max. **Temp. Range:** −55° C to +125° C. **Dielectric Strength:** 900 VAC. **Terminals:** .016" dia. gold-plated pins. **Size:** Type 30, .312" sq. x .234" h.; type 31, .312" w. x .300" d. x .344" h.

30	50, 100, 200, 500, 1K, 2K, 5K	$1.75	$1.65	$1.60	$1.55	$1.45	$1.37	$1.30	$1.25
	10K	2.00	1.95	1.85	1.80	1.65	1.55	1.50	1.40
	20K	2.50	2.40	2.30	2.20	2.10	1.95	1.85	1.73
31	50, 100, 200, 500, 1K,,2K, 5K	2.25	2.15	2.05	2.00	1.90	1.75	1.70	1.65
	10K	2.50	2.40	2.30	2.20	2.10	1.95	1.90	1.85
	20K	3.00	2.85	2.75	2.65	2.50	2.35	2.30	2.25

CERMET ⅓" ROUND TYPE 550

Low-cost Metal Glaze® ½" round trimmers similar to Series 500. **Resistance Tolerance:** ±30%. **Power Rating:** ½ watt at 70° C. **Adjustment Turns:** 1. **Temp. Coef.:** ±150 ppm/° C max. **Dielectric Strength:** 1000 VAC. **Torque:** 7.5 oz.-in., max. **Terminals:** .028" dia. gold-plated pins. **Size:** Type 550, .562" dia. x .325" h.; type 556, .560" dia. x .412" d. x .593" h.

550	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg. 2 megs	$2.20	$2.02	$1.86	$1.73	$1.61	$1.42	$1.35	$1.27
556		2.87	2.63	2.43	2.26	2.11	1.86	1.76	1.66

CERMET ¼" ROUND TYPE 170

Tested to MIL-R-22097 Char. C. Screwdriver adjustable. **Resistance Tolerance:** ±20%; ±10% available. **Power Rating:** 0.5 W at 85° C; 300 V max. **Contact Resis. Variation:** 3% or 3 ohms, whichever is greater. **Temp. Coef.:** ±150 ppm/° C max. **Dielectric Strength:** 600 VAC. **Adjustment Turns:** 1. **Torque:** 5.0 oz.-in. max. **Terminals:** .016" dia. pins. **Size:** Types 170, 171, .250" dia. x .145" thk.; type 172, .312" h. x .187" d. x .250" w.

170, 171	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$1.75	$1.66	$1.57	$1.50	$1.45	$1.40	$1.31	$1.25
172		2.50	2.38	2.25	2.15	2.07	2.00	1.88	1.75

INDUSTRIAL/COMMERCIAL MULTI-TURN TRIMMERS

WIRE-WOUND ½" SQUARE TYPE 20

Precision adjustment and reliability are assured in this low-cost unit. **Resistance Tolerance:** ±10%. **Rating:** 1 W at 50° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±70 ppm/° C max. **Insulation Resistance:** 100 megs at 500 VDC min. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 25, ±3. **Torque:** 5 oz.-in. max. **Terminals:** Types 20-00 have #30 AWG Teflon* insulated leads, minimum 4" lg.; types 20-207, 20-208 have .028" dia. pins. **Size:** Type 20-00, .500" sq. x .200" h.; type 20-10, .500" sq. x .215" h.; types 20-208, 20-207, .500" sq. x .192" h.

*Reg. DuPont TM.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
20-00, 20-10, 20-207, 20-208	50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.19	$2.95	$2.66	$2.52	$2.36	$2.24	$1.96	$1.92
	20K	4.32	4.00	3.60	3.42	3.20	3.04	2.66	2.60

WIRE-WOUND ⅜" SQUARE TYPE 70

Square trimmer potentiometer has space-saving miniature configuration. **Tolerance:** ±10%. **Rating:** 0.75 W at 70° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±70 ppm/° C max. **Insulation Resistance:** 100 megs at 500 VDC min. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 21, ±3. **Torque:** 5 oz.-in. max. **Terminals:** Pins, .024" dia. ±.006". **Size:** .375" sq. x .195" h.

70-10, 70-207, 70-208	50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.50	$3.32	$3.15	$2.97	$2.80	$2.62	$2.45	$2.20
	20K	4.50	3.95	3.75	3.55	3.35	3.20	3.05	2.75

WIRE-WOUND 1¼" RECTANGULAR TYPE 40

Features long-winding element for close-tolerance resolution. Versatility provided by two popular pin configurations. **Tolerance:** ±10%. **Rating:** 1 W at 50° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±70 ppm/° C max. **Insulation Resistance:** 100 megs at 500 VDC, min. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 22, ±5. **Torque:** 8.0 oz.-in. max. **Terminals:** Type 40-00, #30 AWG stranded Teflon leads, min. 4" long; types 40-10, 40-20, .028" dia. pins. **Size:** .190" w. x 1.250" lg. x .340" h.

40-00, 40-10, 40-20	50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.80	$3.50	$3.15	$3.00	$2.80	$2.65	$2.35	$2.25
	20K	4.75	4.25	3.90	3.75	3.50	3.30	2.95	2.55

WIRE-WOUND 1¼" RECTANGULAR TYPE 60

Features rugged mechanical construction. Has brazed multi-wire terminations. **Tolerance:** ±10%. **Rating:** 1 W at 70° C. **Temp. Range:** −55° C to +125° C. **Temp. Coef.:** ±70 ppm/° C max. **Noise:** 100 ohms max. **Insulation Resistance:** 100 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 22, ±5 **Torque:** 8 oz.-in. max. **Humidity:** Meets MIL-STD-202, method 103, cond. A. **Terminals:** Type 60-00, #30 AWG stranded Teflon leads, 11½" min. lg.; type 60-20, .028" dia. gold-plated pins; 60-201, .022" dia. gold-plated pins. **Size:** .275" w. x 1.250" lg. x .315" h. (Illustrated on next page.)

60-00, 60-20, 60-201	50, 100, 200, 500, 1K, 2K, 5K, 10K	$4.00	$3.67	$3.38	$3.14	$2.93	$2.59	$2.44	$2.40
	20K	5.45	5.00	4.62	4.29	4.00	3.53	3.34	3.30

WIRE-WOUND 1" RECTANGULAR TYPE 901

Extremely fine resolution in a miniature configuration. Flame retardant, molded plastic housing, sealed against moisture, dust and board cleaning processes. **Tolerance:** ±5%. **Rating:** 1 W at 70° C. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±50 ppm/° C. **Minimum Resis.:** 0.2% or 1.0 ohm, whichever is greater. **Noise:** 100 ohms max., during adjustment. **Dielectric Strength:** 1000 VAC. **Moisture Resis.:** MIL-STD-202, method 106. **Adjustment Turns:** 28, ±5. **Torque:** 8 oz.-in., max. **Terminals:** Type 901-20, .025" x .008" x .15" long pins. Other pin lengths available. **Size:** .16" w. x .95" long x .31" h.

901-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$2.90	$2.65	$2.45	$2.28	$2.13	$1.88	$1.78	$1.68
	50K	3.87	3.53	3.27	3.04	2.84	2.50	2.37	2.24

INDUSTRIAL/COMMERCIAL MULTI-TURN TRIMMERS (CONT'D)

WIRE-WOUND ¾" RECTANGULAR TYPES 910, 930

Minimum parts insure maximum reliability. Savings in space provided by miniature configuration. Completely sealed to withstand automatic soldering, fluxing and board washing. **Tolerance:** ±10%. **Rating:** 1 W at 40° C. **Temp. Range:** −65° C to +125° C. **Temp. Coef.:** ±50 ppm/° C nominal; ±100 ppm/° C max. **Noise:** 100 ohms max. during adjustment. **Insulation Resistance:** 100 megs min. at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 20. **Torque:** 5 oz.-in. max. **Humidity:** MIL-STD-202, method 103B, Condition A. **Terminals:** Type 910-20, 910-30, .025″ x .008″ x .15″ gold-plated pins; type 930-20, .025″ x .008″ x .210″ pins. **Size:** Types 910-20, 910-30, .160″ w. x .750″ lg. x .310″ h.; type 930-20, .260″ w. x .750″ lg. x .350″ h.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
910-20, 910-30, 930-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$1.75	$1.62	$1.46	$1.39	$1.30	$1.23	$1.17	$1.10

CERMET ¼" SQUARE TYPE 25

One-half inch square trimmer potentiometer has Metal Glaze® fused-on ceramic substrate for infinite resolution. Design permits rigid stack-mounting without using straps. **Tolerance:** ±20%. **Rating:** 75 W at 70° C., 300 V max. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±250 ppm/° C max., ±100 ppm/° C available. **Insulation Resis.:** 100 megs at 500 VDC min. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 24, ±3. **Torque:** 5 oz.-in. max. **Moisture Resis.:** MIL-STD-202-D, method 103-B, cond. B. **Termina s:** Types 25-00, #30 AWG Teflon* insulated leads, min. 4″ lg.; types 25-207, 25-208, .028″ dia. pins. **Size:** .500″ sq. x .192″ h.

*Registered DuPont trademark.

25-00, 25-10, 25-207, 25-208	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$3.19	$2.95	$2.66	$2.52	$2.36	$2.24	$1.96	$1.92

CERMET 1 ¼" RECTANGULAR TYPE 45

Versatility provided by four popular mounting configurations. Metal Glaze element in all environments. **Tolerance:** ±20%. **Rating:** .75 W at 70° C, 300 V max. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±250 ppm/° C max., ±100 ppm/° C available. **Insulation Resis.:** 100 megs at 500 VDC min. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 22, ±5. **Torque:** 9.0 oz.-in. max. **Moisture Resis.:** MIL-STD-202-D, method 103-B, cond. B. **Terminals:** 45-00, 45-10, #30 AWG stranded Teflon leads, min. 6″ long; type 45-20, .028″ dia. pins. **Size:** .190″ w. x 1.250″ lg. x .340″ h.

45-00, 45-10, 45-20	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$3.80	$3.50	$3.15	$3.00	$2.80	$2.65	$2.35	$2.25

CERMET ¾" RECTANGULAR TYPES 960, 980, 989

Miniature configuration provides savings in space. Metal Glaze element assures infinite resolution in all environments. Completely sealed against dust and humidity. **Tolerance:** ±10%. **Rating:** 0.75 W at 40° C, 300 V max. **Temp. Range:** −65° C to +125° C. **Temp. Coef.:** ±100 ppm/° C max., ±50 ppm/° C available. **Contact Resis. Variation:** 20 ohms or 3%, whichever is greater. **Insulation Resis.:** 100 megs min. at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 20 nominal. **Torque:** 5.0 oz.-in. max. Tested to MIL-R-22097. **Humidity:** MIL-STD-202, method 103B, condition A. **Terminals:** .020″ dia. pins. **Size:** Types 960-20, 989-20, .160″ w. x .750″ lg. x .310″ h.; type 980-20, .260″ w. x .750″ lg. x .350″ h.

989-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$1.95	$1.84	$1.75	$1.71	$1.65	$1.55	$1.45	$1.35
960-20, 980-20		$1.90	$1.80	$1.70	$1.60	$1.58	$1.54	$1.49	$1.30

CERMET ¾" RECTANGULAR TYPES 961, 981, 988

Low profile for greatly improved packaging density. Completely sealed against dust, humidity, automatic soldering, fluxing and board cleaning. **Tolerance:** ±10%. **Rating:** 0.75 W at 40° C, 300 V max. **Operating Temp. Range:** −65° C to +125° C. **Temp. Coef.:** ±100 ppm/° C max., ±50 ppm/° C available. **Contact Resis. Variation:** 20 ohms or 3%, whichever is greater. **Insulation Resis.:** 100 megs min. at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 20 nominal. **Torque:** 5.0 oz.-in. max. Tested to MIL-R-22097. **Humidity:** MIL-STD-202, method 103B, cond. A. **Terminals:** .020″ dia. pins. **Size:** Types 961-20, 988-20, .160″ w. x .750″ lg. x .250″ h.; type 981-20, .260″ w. x .750″ lg. x .250″ h.

961-20,	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 500K, 1 meg	$1.35	$1.25	$1.20	$1.15	$1.10	$1.05	$1.00	$0.95

PRECISION SINGLE-TURN TRIMMERS

WIRE-WOUND ½" ROUND TYPE 100

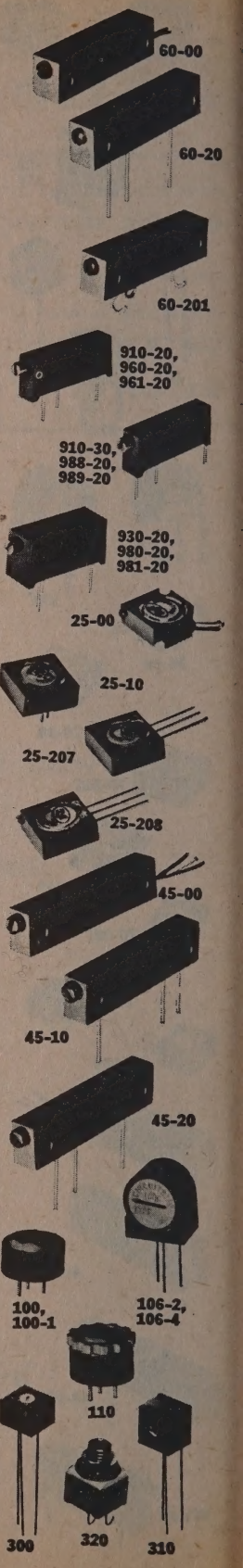
Wide configuration selection simplifies design and packaging problems. Sturdy 30 ounce-inch solid stops eliminate damage due to overtravel. Sealed construction keeps out moisture and dust. **Electrical Travel:** 315° nominal. **Tolerance:** ±5%. **Rating:** 1 W at 70° C. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise:** 100 ohms, max. during adjustment. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 1500 VAC. **Adjustment Turns:** 1. **Torque:** 0.25 to 7.5 oz.-in. Environmentally tested to MIL-R-27208. **Terminals:** Pins, type 100, .028″ dia. x .187″ lg.; type 100-1, .028″ dia. x .300″ lg.; type 106-2, .020″ dia., gold plated; type 110, .028″ dia., gold plated; type 106-4, .030″ dia. **Size:** Types 100, 101, .500″ dia. x .235″ h.; type 110, .563″ dia. x .325″ h.; types 106-2, 106-4, .563″ h. x .312″ d.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
100, 100-1	10, 20,50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.30	$3.00	$2.70	$2.45	$2.30	$2.20	$2.05	$1.85
	20K	4.10	3.75	3.46	3.22	3.00	2.65	2.50	2.35
	50K	4.40	4.00	3.65	3.40	3.20	3.00	2.95	2.75
106-2, 110	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	3.80	3.42	3.17	2.98	2.85	2.72	2.60	2.10
	20K	4.40	3.96	3.67	3.45	3.30	3.15	3.01	2.75
	50K	5.00	4.50	4.17	3.92	3.75	3.52	3.43	3.00
106-4, 2108-2	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	7.00	6.55	6.10	5.63	5.18	4.62	4.26	4.00
108-4	20K	7.95	7.25	6.80	6.30	5.75	5.15	4.86	4.60
	50K	8.50	7.70	7.20	6.65	6.05	5.40	5.06	4.80

WIRE-WOUND 5/16" CUBE TYPE 300

Subminiature design with top or side screwdriver adjust. Gold-plated printed circuit pins allow easy welding and soldering. **Tolerance:** ±5%. **Power Rating:** Types 300, 310, 0.6 W at 60° C; type 320, 1 W at 60° C. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±70 ppm/° C max. **Noise During Adjustment:** 100 ohms. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 1. **Torque:** 4 oz.-in. max. **Moisture Resistance:** Tested to MIL-R-27208. **Terminals:** .016″ dia. gold plated. **Size:** Type 300, .312″ sq. x .234″ h.; type 310, .344″ sq. x .563″ d.; type 320, .375″ sq. x .340″ h.

300	50, 100, 200, 500, 1K, 2K, 5K	$5.95	$5.50	$4.90	$4.70	$4.60	$4.40	$4.20	$4.00
	10K	6.95	6.40	5.73	5.48	5.35	5.11	4.88	4.65
	20K	7.95	7.29	6.56	6.26	6.11	5.83	5.57	5.30
310	50, 100, 200, 500, 1K, 2K, 5K	5.95	5.50	4.90	4.70	4.60	4.40	4.20	4.00
	10K	6.95	6.40	5.73	5.48	5.35	5.11	4.88	4.65
	20K	7.95	7.29	6.56	6.26	6.11	5.83	5.57	5.30
320	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	8.91	8.25	7.43	7.05	6.60	6.27	6.19	5.95



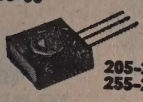
150, 150-1

156-2, 156-4

160

205-10, 255-10

205-00, 255-00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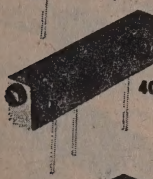
205-208, 255-208

400-00

400-10


400-20

600-00

600-20

700-207

700-10

700-208

800-208

800-20

940

PRECISION SINGLE-TURN TRIMMERS (CONT'D)

CERMET ½" ROUND TYPES 150 AND 160

Wide configuration selection simplifies design and packaging problems. Metal Glaze® element assures infinite resolution. Sturdy 30 ounce-inch solid stops eliminate damage due to overtravel. Sealed construction keeps out moisture and dust. **Electrical Travel:** 320° nominal. **Tolerance:** ±5%, ±10% STD. **Rating:** 0.75 W at 85° C, 300 V max. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±100 ppm/° C max.; ±50 ppm/° C available. **Max. Contact Resis. Variation:** 20 ohm or 3%, whichever is greater. **Insulation Resistance:** 1000 megs at 500 VDC. **Dielectric Strength:** 1500 VAC. **Adjustment Turns:** 1. **Torque:** 0.25 to 7.5 ounce-inches. Environmental Test to MIL-R-22097, Characteristic C. **Terminals:** Type 150, .028" dia. x .187" lg. pins; type 150-1, .028" x .300" lg. pins. **Size:** Types 150, 151, .500" dia. x .235" h.; type 160, .563" dia. x .325" h.; others, .312" d. x .536" h.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
150, 150-1	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K 1 meg, 2 megs	$4.50	$4.05	$3.75	$3.52	$3.38	$3.22	$3.08	$2.98
156-2, 160		5.00	4.50	4.17	3.92	3.75	3.52	3.43	3.33
156-4, 158-2, 158-4		5.50	4.90	4.42	4.22	3.95	3.77	3.58	3.45

PRECISION MULTI-TURN TRIMMERS

WIRE-WOUND ½" SQUARE TYPE 205

Ultra-low temperature coefficient element provides dependable stability. High temperature diallyl phthalate case construction permits operation to +175° C. Silver-brazed multi-wire terminations. Meet MIL-R-27208 environmental requirements. **Tolerance:** ±5%. **Rating:** 1 W at 70° C. **Temp. Range:** −65° C to +175° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise During Adjustment:** 100 ohms max. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 25, ±2. **Terminals:** Type 205-00, #30 AWG Teflon* insulated leads, min. 6" lg.; types 205-10, 205-105, 205-208, .030" dia. x .187" gold-plated pins; type 205-207, .028" dia. x .500" gold-plated pins. **Size:** .500" sq. x .192" h. except type 205-10, .500" sq. x .215" h.

*Registered DuPont trademark.

205-00, 205-10, 205-105, -207, 205-208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	12.50	11.50	10.25	9.68	9.00	8.50	8.00	7.50
	20K	12.96	11.94	10.66	10.08	9.36	8.84	8.32	7.81
	50K	13.43	12.39	11.09	10.48	9.74	9.36	8.88	8.41

WIRE-WOUND 1¼" RECTANGULAR TYPE 400

Rectangular 1¼" trimmer potentiometer has rigid unibody molded case construction. Versatility provided by two popular pin configurations. Has silver-brazed multi-wire terminations and wire-wound element. **Tolerance:** ±5%. **Rating:** 1 W at 70° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise During Adjustment:** 100 ohms max. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 1500 VAC. **Adjustment Turns:** 22, ±5. **Torque:** 0.1 to 8.0 ounce-inches. Meet MIL-R-27208 environmental requirements. **Terminals:** Type 400-00, #30 AWG stranded Teflon leads, 11½" min. lg.; types 400-10, 400-20, .028" dia. x .500" gold-plated pins. **Size:** .190" w. x 1.250" lg. x .315" h.

400-00, 400-10, 400-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.45	$5.00	$4.62	$4.29	$4.00	$3.40	$3.35	$3.30
	20K	6.00	5.50	5.08	4.71	4.40	3.88	3.67	3.53
	50K	6.56	6.02	5.55	5.16	4.81	4.25	4.01	3.87

WIRE-WOUND 1¼" RECTANGULAR TYPE 600

Rectangular trimmer potentiometer insures stability with low temperature coefficient, long-winding element. Has silver-brazed multi-wire terminations, gold-plated pins. Wiper-leadscrew design provides setting stability even under severe shock and vibration. Diallyl phthalate molded high impact protection case. **Tolerance:** ±5%. **Rating:** 1 W at 70° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise:** 100 ohms max., during adjustment. **Insulation Resistance:** 100 megs at 500 VDC. **Dielectric Strength:** 1500 VAC. **Adjustment Turns:** 22, ±5. **Torque:** 0.1 to 8.0 ounce-inches. Meet MIL-R-27208 environmental requirements. **Terminals:** Type 600-00, #30 AWG stranded Teflon leads, 11½" min. lg.; type 600-20, .028" dia. x .500" gold-plated pins. **Size:** .275" w. x 1.250" lg. x .315" h.

600-00, 600-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.45	$5.00	$4.62	$4.29	$4.00	$3.40	$3.35	$3.30
	20K	6.00	5.50	5.08	4.71	4.40	3.88	3.67	3.53
	50K	6.56	6.02	5.55	5.16	4.81	4.25	4.01	3.87

WIRE-WOUND ⅜" SQUARE TYPE 700

Space-saving miniature configuration reduces circuit board size requirements. Diallyl phthalate case material withstands high-temperature environments. Gold-plated pins for easier soldering and welding. Screwdriver slot adjustment, fillister head. **Tolerance:** ±5%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −65° C to +175° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise During Adjustment:** 100 ohms, max. **Insulation Resistance:** 1000 megs at 500 VDC. **Dielectric Strength:** 1000 VAC. **Adjustment Turns:** 21, ±2. **Torque:** 5 oz.-in. max. Meets MIL-R-27208 environmental requirements. **Terminals:** Pins, .024" dia., type 700-10, .300" lg.; type 700-207, .187" lg.; type 700-208, .300" lg. **Size:** .375" sq. x .195" h.

700-10, 700-207, -208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$7.18	$6.58	$6.08	$5.64	$5.27	$4.65	$4.40	$4.36
	20K	8.13	7.45	6.88	6.39	5.96	5.26	4.97	4.93

WIRE-WOUND 5/16" SQUARE TYPE 800

Miniature configuration for space saving applications. Wire-wound element with multi-wire silver-brazed terminations. Completely sealed to prevent damage from solvents and potting compounds. Withstands severe shock and vibration. **Tolerance:** ±5%. **Power Rating:** 0.6 W at 70° C. **Temp. Range:** −65° C to +150° C. **Temp. Coef.:** ±50 ppm/° C max. **Noise During Adjustment:** 100 ohms max. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 15.0, ±2.0. **Torque:** 3 oz.-in. max. Meets MIL-R-27208 environmental requirements. **Terminals:** Pins, .017" dia. gold-plated, .125" min. lg. **Size:** .312" sq. x .190" d.

800-20, 800-208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.36	$4.92	$4.54	$4.21	$3.93	$3.47	$3.28	$3.15
	20K	6.36	5.83	5.38	5.00	4.67	4.12	3.90	3.75

⅜" SQUARE TYPE 76

Screwdriver slotted miniature potentiometer available in multiple pin configurations. **Tolerance:** ±10%. **Rating:** 0.5 W at 85° C. **Temp. Range:** −55° C to +125° C. **Temp. Coef.:** ±100 ppm/°C. **Insulation Resistance:** 100 megs. **Dielectric Strength:** 500 V rms. **Torque:** 5 oz.-in. max. **Size:** .42" sq. max. x .20" d. Other values than those listed available on special order.

76	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 500K, 1 meg, 2 megs	$0.70	$0.67	$0.63	$0.60	$0.60	$0.56	$0.53	.....

CERMET ½" SQUARE TYPE 255

Meets environmental and life requirements of MIL-R-22097, Characteristic C. Metal Glaze fused-on ceramic substrate provides infinite resolution. Rigid stack-mounting possible without using straps. High temperature diallyl phthalate case construction. **Tolerance:** ±10%. **Rating:** 1 W at 70° C, 300 V max. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±100 ppm/° C max., ±50 ppm/° C available. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 24, ±2. **Torque:** 5 oz.-in. max. **Terminals:** Type 255-00, #30 AWG Teflon insulated leads, min. 6" lg.; type 255-10, Pins, .030" dia. gold-plated, .187" lg.; type 255-207, .028" dia. x .500" lg. gold-plated pins; type 255-208, .030" dia. x .500" g. gold-plated pins. **Size:** .500" sq. x .192" h., except type 255-10, .215" h.

255-00, 255-10, 255-207, 255-208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$5.62	$5.35	$5.06	$4.77	$4.50	$4.20	$3.90	$3.62

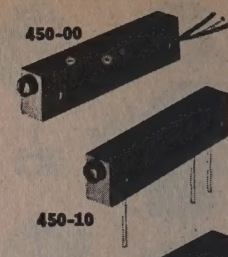
PRECISION MULTI-TURN TRIMMERS (CONT'D)

CERMET 1¼" RECTANGULAR TYPE 450

Versatility provided by two popular pin configurations. Metal Glaze element offers infinite resolution in all environments. Rigid unibody molded case construction. **Resistance Tolerance:** ±10%. **Rating:** 1 W at 70° C, 300 V max. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±100 ppm/° C max., ±50 ppm/° C available. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 1500 VAC. **Adjustment Turns:** 22 ±5. Meets MIL-R-22097 environmental requirements. **Terminals:** Type 450-00, #30 AWG stranded Teflon* leads 11½" min. lg.; types 450-10, 450-20, .028" dia. gold-plated pins. **Size:** .190" w. x 1.250" lg. x .315" h.

*Registered DuPont trademark.

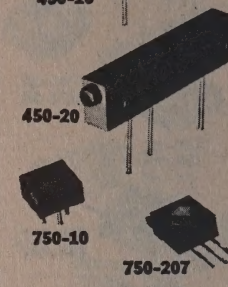
TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
450-00, 450-10, 450-20	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$5.90	$5.48	$4.89	$4.65	$4.38	$4.15	$3.88	$3.50



CERMET ⅜" SQUARE TYPE 750

Miniature configuration. Metal Glaze® element. Meets MIL-R-22097. **Tolerance:** ±10%. **Rating:** 0.5 W at 85° C. **Temp. Range:** −65° C to +150° C. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 19 ±2. **Torque:** 5 oz.-in. max. **Terminals:** Gold-plated pins, type 750-10, .028" dia.; types 750-207, 750-208, .020" dia. **Size:** .375" sq. x .205" h., except 750-10, .195" h.

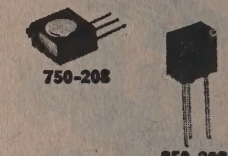
750-10, 750-207, 750-208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$6.50	$6.18	$5.85	$5.72	$5.52	$5.18	$4.86	$4.34



CERMET 5/16" SQUARE TYPE 850

Miniature configuration. Silicon O ring seal. Metal Glaze element. Wiper assembly idles at both ends of travel eliminate forced-adjustment damage. Meet MIL-R-22097. **Tolerance:** ±10%. **Rating:** 0.3 W at 70° C. **Temp. Range:** −65° C to +150° C. **Insulation Resis.:** 100 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 13. **Torque:** 3.0 oz.-in. **Terminals:** .017" dia. x .500" lg. **Size:** .312" sq. x .190" d.

850-20, 850-208	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$5.36	$4.92	$4.54	$4.21	$3.93	$3.47	$3.28	$3.15



¼" SQUARE TYPE 180

Ultraminiature for space saving. Both vertical and horizontal types. **Resistance Tolerance:** ±10% 100 ohms to 1 meg; ±20% below 100 ohms. **Rating:** 0.5 W at 70° C. **Temp. Range:** −55° C to +150° C. **Temp. Coef.:** ±100 ppm/°C standard; ±50 ppm/°C available on special order. **Insulation Resis.:** 1000 megs. **Dielectric Strength:** 900 VAC. **Size:** .25" sq. x .18" h. except Type 182 vertical mount. ,187" d. Other values than those listed available on special order.

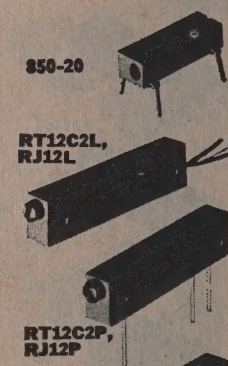
180, 181, 182	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.75	$1.66	$1.57	$1.50	$1.45	$1.40	$1.31	.....

MILITARY TRIMMERS

WIRE-WOUND 1¼" RECTANGULAR

Offers two popular pin configurations. Approved military style and performance. Wire-wound element and silver-brazed multi-wire terminations. **Resistance Tolerance:** ±5%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −65° C to +150° C. **Noise:** 100 ohms, max. (ENR) during adjustment. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 22 ±5. **Torque:** 8 oz.-in. max. Meets MIL-R-27208 Char. C environmental requirements. **Terminals:** Type RT12C2L, #30 AWG stranded Teflon leads, 11½" min. lg.; others, .028" dia. x .500" lg. gold-plated pins. **Size:** .190" w. x 1.250" lg. x .315" h.

TRW Type	Resistance Range, Ohms (Specify)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999	1000-2499
RT12C2L, P, Y	100, 200, 500, 1K, 2K, 5K, 10K	$5.45	$5.00	$4.62	$4.29	$4.00	$3.53	$3.40	$3.30
	20K	6.00	5.50	5.08	4.71	4.40	3.88	3.67	3.60



WIRE-WOUND ½" SQUARE TRIMMER

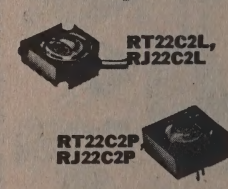
Precision adjustment provided by optimum 28:1 ratio. Meets environmental and life requirements of MIL-R-27208. **Resistance Tolerance:** ±5%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −65° C to +150° C. **Noise During Adjustment:** 100 ohms max. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 25 ±2. **Terminals:** Type RT22C2P, .030" dia. x .187" lg. gold-plated pins; type C2L, #30 AWG Teflon insulated leads, min. 6" lg.; type C2X, .028" dia. x .500" lg. gold-plated pins; type C2W, .030" dia. x .500" lg. gold-plated pins. **Size:** .500" sq. x .192" h., except RT22C2P, .215" h.

RT22C2L, P, RT22C2W, X	50, 100, 200, 500, 1K, 2K, 5K, 10K	$4.72	$4.48	$4.25	$4.00	$3.78	$3.39	$3.16	$2.94
	20K	5.18	4.92	4.66	4.40	4.14	3.73	3.48	3.25

WIRE-WOUND ⅜" SQUARE TRIMMER

Miniature configuration for space-saving requirements. Meets environmental requirements of MIL-R-27208. **Resistance Tolerance:** ±5%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −65° C to +150° C. **Noise:** 100 ohms during adjustment (ENR). **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 21 ±2. **Torque:** 5 oz.-in. max. **Terminals:** .028" dia. x .187" lg. gold-plated pins. **Size:** .375" sq. x .195" h.

RT24C2P, W, X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$7.18	$6.58	$6.08	$5.64	$5.27	$4.65	$4.40	$.436



CERMET 1¼" RECTANGULAR TRIMMER

Provides two popular pin configurations Metal Glaze element. Approved military style and performance. Meets MIL-R-22097 environmental requirements. **Resistance Tolerance:** ±10%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −55° C to +150° C. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 22 ±5. **Torque:** 8 oz.-in. max. **Terminals:** Type RJ12L, #30 AWG stranded Teflon leads, 11½" min. lg.; types RJ12P, RJ12Y, .028" dia. x .500" lg. gold-plated pins. **Size:** .190" w. x 1.250" lg. x .315" h.

RJ12CL RJ12CP, Y	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$5.90	$5.75	$4.65	$4.59	$4.50	$4.40	$4.35	$4.25

CERMET ½" SQUARE TRIMMER

Design permits rigid stack-mounting. Meets MIL-R-22097 requirements. **Tolerance:** ±10%. **Rating:** 0.75 W at 85° C. **Temp. Range:** −55° C to +150° C. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 24 ±2. **Torque:** 5 oz.-in. max. **Terminals:** Gold-plated pins, type RJ22C2P, .030" dia. x .187" lg.; type RJ22C2X, .028" dia. x .500" lg.; type RJ22C2W, .030" dia. x .500" lg.; type RJ22C2L, #30 AWG Teflon insulated leads, min. 6" lg. **Size:** .500" sq. x .192" h., except RJ22C2P, .215" h.

RJ22CL, P RJ22CW, X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$6.20	$6.10	$5.60	$5.30	$4.98	$4.49	$4.30	$4.25

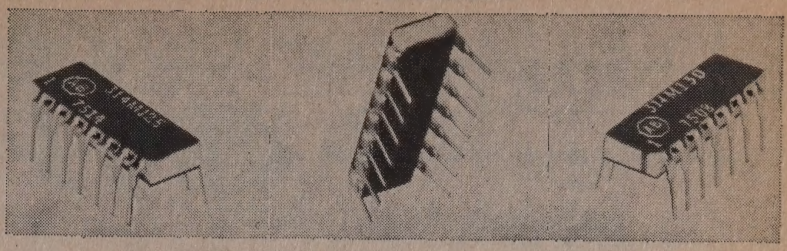
CERMET ⅜" SQUARE TRIMMER

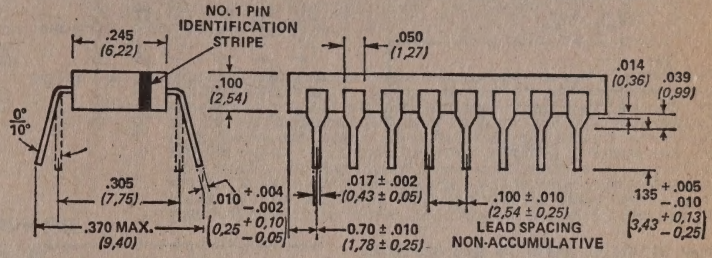
Miniature configuration saves space. Meets design and environmental requirements of MIL-R-22097, Char. C. **Resistance Tolerance:** ±10%. **Rating:** 0.5 W at 85° C. **Temp. Range:** −65° C to +150° C. **Insulation Resis.:** 1000 megs at 500 VDC. **Dielectric Strength:** 900 VAC. **Adjustment Turns:** 19 ±2. **Torque:** 5 oz.-in. max. **Terminals:** .028" dia. x .187" lg. gold-plated pins. **Size:** .375" sq. x .195" h.

RJ24CP	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$6.50	$6.18	$5.85	$5.72	$5.52	$5.18	$4.86	$4.34

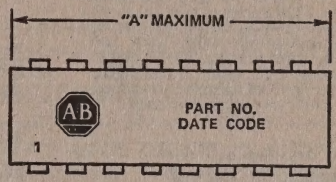
SERIES 314 AND 316 CERMET RESISTOR NETWORKS

Series 314 and 316 cermet resistor networks are packaged in 14 and 16 pin dual inline configurations respectively. Series 314A consists of 13 resistors; Series 316A consists of 15 resistors, all resistors of identical value and with one common connection. Series 314B consists of 7 resistors; Series 316B consists of 8 resistors, all resistors of identical value and with no common connection. Series 314E consists of 12 two-resistor terminations; Series 316E consists of 14 two-resistor terminations, with two common connections and with all terminations of the same two-value combination. Available in a broad range of resistance values and, in the E types, of resistance ratios. All are substantially smaller than networks made of individual resistors. Series 314A and 316A may be used as pull-up resistors for unused TTL gates, parallel high-speed circuitry, wired OR configurations, pull-down applications or TTL-MOS interfacing. Series 314B and 316B may be used for transmission-line terminations, power gate pull-up, or logic-level translation. Series 314E and 316E may be used for digital-line terminations and various TTL and ECL applications.



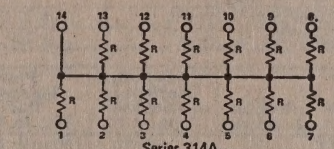


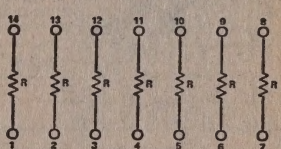
"A" Maximum		Number of Leads
Decimal	Metric	
.745	18,92	14
.845	21,46	16

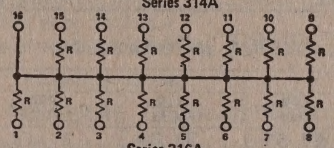


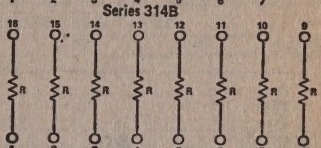
NETWORK SPECIFICATIONS

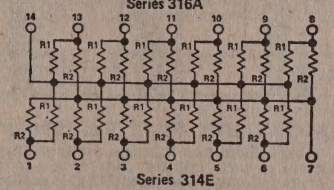
Network	Power Dissipation Rating (Up to 70°C)	Resistor Tolerance	Temp. Coefficient of Resist. (ppm/°C)
314A	125 mW/resistor 1.6 W/package		
314B	250 mW/resistor 1.6 W/package	±2%	±100
316A	125 mW/resistor 1.8 W/package		
316B	250 mW/resistor 1.8 W/package		
314E	125 mW/resistor 1.6 W/package		
316E	125 mW/resistor 1.8 W/package	±2%	±100

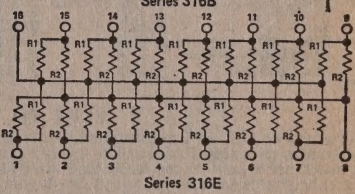












SERIES 314A AND B, 316A AND B PART NUMBER EXPLANATION

Series Designation	Resistance Value
314A 314B 316A 316B	First two digits are significant figures and the third indicates the number of zeros following the first two digits. Examples: **101** = 100 ohms **102** = 1000 ohms **122** = 1200 ohms

STANDARD RESISTANCE VALUES

22	110	510	2400	10K
24	120	560	2700	11K
27	130	620	3000	12K
30	150	680	3300	13K
33	160	750	3600	15K
36	180	820	3900	16K
39	200	910	4300	18K
43	220	1000	4700	20K
47	240	1100	5100	22K
51	270	1200	5600	24K
56	300	1300	6000	27K
62	330	1500	6200	30K
68	360	1600	6800	33K
75	390	1800	7500	47K
82	430	2000	8200	68K
91	470	2200	9100	100K
100				

SERIES 314E AND 316E PART NUMBER EXPLANATION

Series Designation	R1 R2 Resistance Value
314E 316E	First two digits are significant figures and the third indicates the number of zeros following the first two digits. Examples: **101** = 100 ohms **102** = 1000 ohms **122** = 1200 ohms

SERIES 314E AND 316E STANDARD VALUES

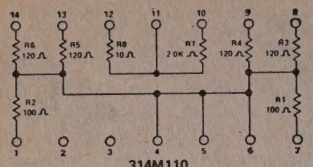
R1/R2	Zo (Characteristic Impedance)
81/130	50
120/200	75
90/660	80
130/210	80
160/260	100
180/390	123
220/330	132
330/680	222

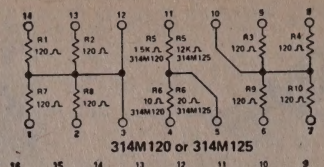
PRICING INFORMATION

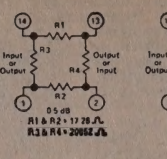
A-B Part No.		Net Each, Lots of							
Former Molded Package	I-DIP Ceramic Package	1-24	25-99	100-249	250-499	500-999	1000-1999	2000-4999	5000-9999
34A...4	314A...	$1.20	$1.10	$0.95	$0.77	$0.68	$0.61	$0.55	$0.49
34B...4	314B...	1.15	1.07	.93	.75	.66	.59	.54	.48
36C...4	316A...	1.25	1.13	.98	.79	.70	.62	.57	.50
36D...4	316B...	1.20	1.10	.95	.77	.68	.61	.55	.49
34E...4	314E...	2.15	2.00	1.75	1.40	1.25	1.12	1.01	.90
36E...4	316E...	2.30	2.14	1.88	1.50	1.34	1.20	1.09	.96

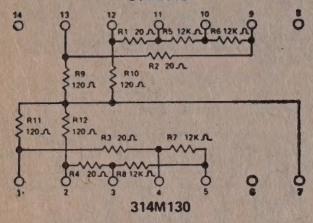
ALLEN-BRADLEY Resistor Networks

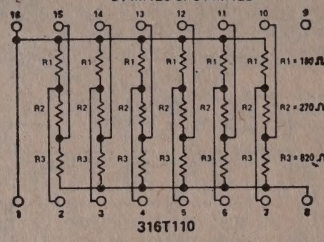
SPECIALIZED VERSIONS OF SERIES 314 AND 316

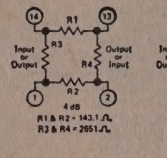




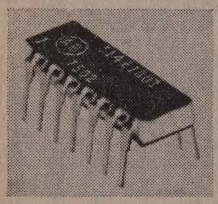








Series 314M110, 314M120 and 314M125 complement the 7520 Series of core memory sense amplifiers. Series 314M130 is for core memory sense line applications with two 711 dual voltage comparators. Series 316T-110 may be used in TTL to ECL translator applications. Series 314Z is for fixed voltage attenuation with impedance matching.



NETWORK SPECIFICATIONS

Network	Resistor Tolerance	Temperature Coefficient of Resistance (ppm/° C)	Power Dissipation Rating (Up to 70° C)	Resistance Ratios	
314M110	±2% ±5% (R8)	±200	500 mW/resistor (R 1 & R2) 100 mW/resistor (R3 thru R8)	R3/R4 R5/R6 R7/R8	±1.5% ±1.5% ±2%
314M120	±2%	±100	100 mW/resistor	R1/R2 R3/R4	±1.5% ±1.5%
314M125	±5% (R6)			R5/R6 R7/R8 R9/R10	±1.5% ±1.5% ±1.5%
314M130	±2%	±200	100 mW/resistor	—	
316T110	±2%	±200	125 mW/resistor	—	

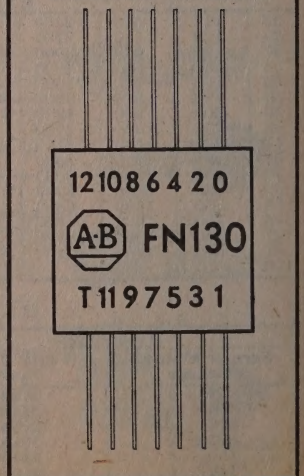
Network	Resistor Tolerance	Temperature Coefficient of Resistance (ppm/° C)	Power Dissipation Rating (Up to 70° C)	Zo (Ohms)	Attenuation Tolerance (dB)	Frequency Response
314Z	±1%	±200	150 mW/resistor	600	±1%	Flat to 1 MHz

PRICING INFORMATION

A-B Part No.	Net Each, Lots of							
	1-24	25-99	100-249	250-499	500-999	1000-1999	2000-4999	5000-9999
314M110	$1.90	$1.77	$1.55	$1.24	$1.11	$0.99	$0.90	$0.79
314M120	1.75	1.61	1.40	1.12	1.00	.90	.81	.72
314M125	1.75	1.61	1.40	1.12	1.00	.90	.81	.72
314M130	2.50	2.32	2.03	1.60	1.43	1.28	1.16	1.03
316T110	2.25	2.12	1.83	1.46	1.30	1.17	1.06	.94
314Z1001	3.25	2.65	2.35	2.20	1.80	1.45	1.15	1.00
314Z1002	3.25	2.65	2.35	2.20	1.80	1.45	1.15	1.00

TYPE FN PRECISION THIN FILM RESISTOR NETWORKS

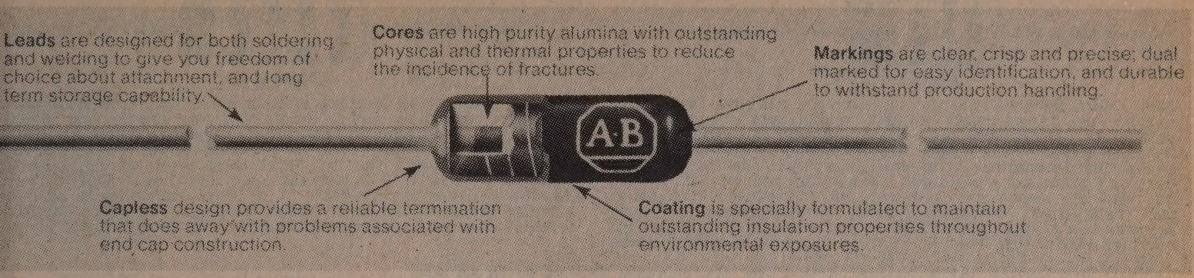
Networks consist of integrated films of chromium cobalt vacuum-deposited on specially selected substrates resulting in networks having precision tolerance and stability. Interconnections within network are a part of the deposited film, insuring circuit integrity and reliability. Excellent tracking characteristics are enhanced by depositing all resistors at one time on the selected glass substrate. Multilayer packaging techniques assure environmental protection. Networks are used in precision attenuators, voltage dividers, filter networks, measurement bridges, digital-to-analog converters, voice coding circuits and many other electronic circuits requiring resistors with close tolerances and low temperature coefficients. **Type FN111**—10-bit binary array for use with Fairchild μA722 integrated circuit. **Type FN112**—3-place BCD array for use with Fairchild μA722 integrated circuit. **Types FN114** (12-bit), **FN123** (10-bit), **FN125** (10-bit), **FN131** (10-bit), **FN132** (13-bit), **FN160** (10-bit)—R/2R Voltage ladders. Operate from −55° C to +125° C. Full scale accuracy, ± ½ LSB. **Types FN129** (12-bit) and **FN130** (12-bit)—1-2-4-8-BCD code ladder networks. Operate from −55° C to +125° C. Full scale accuracy, ± ½ LSB. **Type FN207**—Voltage divider network. The 1K ohm (R1) resistor has an absolute tolerance of ±0.05% at 25° C and all remaining resistors are ratio matched to it to ±0.01% at 25° C. All resistors have temperature coefficient of resistance of 25 ppm/° C and a temperature coefficient of resistance tracking of 5 ppm/° C. **Type FN215**—Precision resistor array designed to work with Fairchild Semiconductor's μA9650 integrated circuit to form an A/D-D/A converter up to 12 bits. Resistor specifications agree with Fairchild Semiconductor's μA9650 data sheet, providing network performance necessary for converters up to 12 bits. **Types FN226 and FN227**—Precision resistor arrays specially designed to work with Intersil's ICL8018, ICL8019, and ICL8020 integrated circuits to form a D/A converter up to 12 bits. **FN226** contains the necessary resistors for an 8 bit converter. **FN227** contains additional resistors which, when combined with an FN226, provides full 12 bit D/A conversion.



A-B Number	Net Each, Lots of				A-B Number	Net Each, Lots of			
	1-9	10-24	25-49	50-99		1-9	10-24	25-49	50-99
FN111	$36.10	$23.80	$19.00	$17.10	FN131	$30.60	$20.20	$16.20	$14.50
FN112	34.60	22.80	18.30	16.40	FN132	47.20	31.10	24.90	22.30
FN114	53.80	35.50	28.40	25.50	FN160	30.60	20.20	16.20	14.50
FN123	35.10	23.10	18.50	16.60	FN207	26.50	17.50	14.00	12.60
FN125	35.10	23.10	18.50	16.60	FN215	48.60	32.00	25.70	23.00
FN129	64.70	42.60	34.20	30.60	FN226	41.50	27.30	21.90	19.60
FN130	36.80	24.20	19.40	17.40	FN227	32.00	21.10	16.90	15.20

ALLEN-BRADLEY Cermet Resistors

TYPES CC/RN55D CERMET FILM FIXED RESISTORS


Leads are designed for both soldering and welding to give you freedom of choice about attachment, and long term storage capability.
Cores are high purity alumina with outstanding physical and thermal properties to reduce the incidence of fractures.
Markings are clear, crisp and precise; dual marked for easy identification, and durable to withstand production handling.
Capless design provides a reliable termination that does away with problems associated with end cap construction.
Coating is specially formulated to maintain outstanding insulation properties throughout environmental exposures.

- Values from 10 ohms to 10 megohms
- Multiple wattage ratings
  - ⅛ W at 125° C
  - ¼ W at 70° C
  - ½ W at 70° C
- 1% Tolerance
- Dual resistance marking
- Available off-the-shelf

Superior performance levels substantially better than the MIL-R-39017 specification. Capless construction provides reliable interconnection without end-cap problems. The high strength, high purity alumina core produces superior thermal characteristics with low hot-spot temperature, and reduces danger of catastrophic failures caused by hairline fractures. Markings are clear and crisp, dual marked for easy identification and durable to withstand production handling. Withstands high overloads and repeated thermal shock. May be used in ½ Watt applications where maximum voltage is limited to 250 volts. Temperature coefficient: 100 ppm/°C.

1% TOLERANCE

A-B Type No.	Rating (Watts)	MIL-R-10509F Style	Size (Ins.)	Resistance Range (Ohms)	Net Each, Lots of 50-99	100-249	500-999	1000-4999	5000-9999
CC	¼	RN55D	.25 x .09	10 to 1 meg 1.02 meg to 10 meg	$0.44 .95	$0.21 .37	$0.14 .20	$0.11 .17	$0.098 .15

STOCK VALUE DECADE

Multiply values listed below by 0.1, 1, 10, 100, etc. for nominal values from 10 ohms to 10 megohms, inclusive.

10.0	12.1	14.7	17.8	21.5	26.1	31.6	38.3	46.4	56.2	68.1	82.5
10.2	12.4	15.0	18.2	22.1	26.7	32.4	39.2	47.5	57.6	69.8	84.5
10.5	12.7	15.4	18.7	22.6	27.4	33.2	40.2	48.7	59.0	71.5	86.6
10.7	13.0	15.8	19.1	23.2	28.0	34.0	41.2	49.9	60.4	73.2	88.7
11.0	13.3	16.2	19.6	23.7	28.7	34.8	42.2	51.1	61.9	75.0	90.9
11.3	13.7	16.5	20.0	24.3	29.4	35.7	43.2	52.3	63.4	76.8	93.1
11.5	14.0	16.9	20.5	24.9	30.1	36.5	44.2	53.6	64.9	78.7	95.3
11.8	14.3	17.4	21.0	25.5	30.9	37.4	45.3	54.9	66.5	80.6	97.6

REEL-PACKAGED CERMET FILM RESISTORS

Allen-Bradley cermet film resistors are available in both body-taped and double-lead taped reels at additional charge as indicated; the charge for the reel is the same whether or not the reel is full. Quantities available only in multiples of 100 pieces above minimum. Note—Long-term storage of reel-packaged resistors is not recommended due to normal aging of the adhesive.

A-B Type	MIL-R-10509F	Min. Order Qty.	Max. No. per reel	Added Charge per reel
BODY TAPED				
CC	RN55D	1000	2500	$1.25
DOUBLE-LEAD TAPED				
CC	RN55D	1000	2500	$2.00

GENERAL CHARACTERISTICS

All measurements made in accordance with the general requirements of MIL-STD-202. All performance limits understood as reading ± (X% + 0.05 ohm) maximum. Established Reliability Specification MIL-R-39017 applies for specific conditions such as mounting, test procedures, sequence of tests, etc.

Characteristic	Allen-Bradley Type CC	Characteristic	Allen-Bradley Type CC
Nominal Resistance Range Standard EIA, MIL & I.E.C. E 96 Values	10 ohms to 10 megohms	Dielectric Withstanding Voltage △R Atmospheric pressure Reduced pressure	0.1%, max. 500 VRMS 250 VRMS
Standard Tolerance	±1%	Insulation Resistance	10,000 megohms, min.
Power Rating Maximum continuous rated watts	0.25 watt at 70° C 0.125 watt at 125° C	Weight (Approximate) Resistor with nominal length leads	0.3 grams
Maximum Ambient Temperature Linear Derating to Zero	165° C 0.25 watt at 70° C 0.125 watt at 125° C 0 watt at 165° C	Terminal Leads	Oxygen-free copper Type C per MIL-STD-1276 with 60/40 solder coating
Rated Continuous Working Voltage (RCWV) Based on nominal resistance (R) in ohms	$\sqrt{0.25 \times R}$ or 250 volts, whichever is less	Shelf Life △R per year	Less than 0.1%

MIL-R-10509 PART NUMBERING EXPLANATION

RN55	D	1962	F
Style and Size	**Characteristic** D = +200, −500 ppm/° C D = ±100 ppm/° C For Allen-Bradley	**Resistance Value** First three digits are significant, 4th digit "number of zeros." 1962 = 19,600 ohms For values below 100 ohms, the letter R represents the decimal point, with all digits significant. 19R6 = 19.6 ohms	**Tolerance** F = ±1%

ALLEN-BRADLEY

HOT-MOLDED FIXED COMPOSITION RESISTORS

INDUSTRIAL GRADE AND MIL-R-11 STYLES RC AND RCR

Style RC

Style RCR

Hot-molded fixed composition resistors are designed for general purpose use in electronic equipment, and are unequalled for uniformity, predictable performance, appearance and freedom from catastrophic failure when used according to published ratings and recommendations. Allen-Bradley resistors are formed with heat and pressure by a unique hot-molding process. They start out physically strong, more uniform, more consistent and stay that way installed in the circuit. The tightly compressed resistance material has a large cross-section resulting in low current density and high overload capacity. The uniformity of the material reduces hot spots and noise. Because of their small size, consistent performance, ruggedness and moderate cost, they are the first choice for military, industrial and consumer product applications. Style RCR resistors not only meet all requirements of MIL-R-39008, but also far exceed the "S" level (best level) of Established Reliability of 0.001% failure rate per 1000 hours. Only Allen-Bradley resistors are available in "S" level reliability in all five wattage sizes over the entire resistance range. The "S" reliability level is indicated by a yellow 5th color band on the resistor body.

5% TOLERANCE STYLES RC AND RCR

A-B Type	Rating (Watts)	MIL-R-11 Style	MIL-R-39008 Style	Size (Inches)*	Volts	Resistance Range (Ohms)	Net Each, Lots of 25-49	100-249	250-499	500-999	Net/Thousand 1000-4999	5000 Up
BB	⅛	RC05	RCR05	.145 x .062 (3,68) x (1,59)	150	2.7 to 9.1† 10 to 22M	$0.31 .28	$0.154 .14	$0.143 .13	$0.132 .12	$104.50 95.00	$102.30 93.00
CB	¼	RC07	RCR07	.250 x .090 (6,35) x (2,29)	250	2.7 to 9.1 10 to 22M	.11 .10	.08 .073	.069 .063	.058 .053	40.70 37.00	35.20 32.00
EB	½	RC20	RCR20	.375 x .140 (9,52) x (3,56)	350	1.0 to 2.4‡ 2.7 to 22M	.13 .12	.065 .059	.057 .052	.048 .044	41.80 38.00	40.15 36.50
GB	1	RC32	RCR32	.562 x .225 (14,29) x (5,72)	500	2.7 to 22M	.18	.084	.077	.069	61.50	58.50
HB	2	RC42	RCR42	.688 x .312 (17,46) x (7,94)	750§	10 to 22M	.30	.15	.143	.135	100.00	94.00

10% TOLERANCE STYLES RC AND RCR

A-B Type	Rating (Watts)	MIL-R-11 Style	MIL-R-39008 Style	Size (Inches)*	Volts	Resistance Range (Ohms)	Net Each, Lots of 25-49	100-249	250-499	500-999	Net/Thousand 1000-4999	5000 Up
BB	⅛	RC05	RCR05	.145 x .062 (3,68) x (1,59)	150	2.7 to 8.2† 10 to 22M	$0.22 .20	$0.108 .098	$0.097 .088	$0.086 .078	$74.80 68.00	$72.60 66.00
CB	¼	RC07	RCR07	.250 x .090 (6,35) x (2,29)	250	2.7 to 8.2 10 to 22M	.07 .06	.055 .05	.044 .04	.033 .03	22.00 20.00	20.35 18.50
EB	½	RC20	RCR20	.375 x .140 (9,52) x (3,56)	350	1.0 to 2.2‡ 2.7 to 22M	.07 .06	.044 .04	.036 .033	.028 .025	20.90 19.00	19.80 18.00
GB	1	RC32	RCR32	.562 x .225 (14,29) x (5,72)	500	2.7 to 22M	.09	.053	.046	.038	30.50	29.00
HB	2	RC42	RCR42	.688 x .312 (17,46) x (7,94)	750§	10 to 22M	.19	.096	.089	.081	52.00	49.00

*Dimensions shown in parentheses are in millimeters. †Resistance range for Industrial Grade and MIL-R-39008 only. ‡Resistance range for Industrial Grade only. §500 V for Styles RC and RCR.

REEL-PACKAGED FIXED COMPOSITION RESISTORS

Allen-Bradley resistors are available in both body taped and double-lead taped reels at additional charge as indicated; charge for the reel is the same whether or not the reel is full. Quantities available only in multiples of 100 pieces above minimum. **Note**—Long-term storage of reel-packaged resistors is not recommended, due to normal adhesive aging.

A-B Type	MIL-R-11 Style	MIL-R-39008 Style	Min. Order Qty.	Max. No. per Reel	Added Charge per Reel
BODY TAPED					
BB	RC05	RCR05	500	1,000	None
			1,100	4,000	None
CB	RC07	RCR07	1,000	2,500	$1.25
EB	RC20	RCR20	1,000	2,500	1.25
GB	RC32	RCR32	500	2,000	1.60
HB	RC42	RCR42	500	1,000	1.50
DOUBLE-LEAD TAPED					
BB	RC05	RCR05	500	500	None
			600	2,000	None
CB	RC07	RCR07	1,000	2,500	$2.00
EB	RC20	RCR20	1,000	2,500	2.00
GB	RC32	RCR32	500	2,000	2.20
HB	RC42	RCR42	500	1,000	2.50

STOCK VALUE DECADE

Multiply values listed below by 0.1, 1, 10, 100, etc. for nominal values in desired ranges.

Tolerance	Ohms					
±5%	10	15	22	33	47	68
	11	16	24	36	51	75
	12	18	27	39	56	82
	13	20	30	43	62	91
±10%	10	15	22	33	47	68
	12	18	27	39	56	82

HOW TO ORDER

INDUSTRIAL GRADE

EB (A) 514 (C) 5 (D)

MIL-R-11 STYLE RC

RC20 (A) GF (B) 514 (C) J (D)

MIL-R-39008 STYLE RCR

RCR05 (A) G (B) 514 (C) J (D) S (E)

(A) A-B Type No. or MIL Style No.

A-B Type	MIL-R-11 Style	MIL-R-39008 Style	Rating, Watts
BB	RC05	RCR05	⅛
CB	RC07	RCR07	¼
EB	RC20	RCR20	½
GB	RC32	RCR32	1
HB	RC42	RCR42	2

(B) For MIL types only; maximum ambient temperature and resistance-temperature characteristic per MIL-R-11 or MIL-R-39008. See Allen-Bradley **Publication EC21** for actual performance limits.

(C) Three-digit number represents resistance. First two digits are significant figures, third is number of zeros that follow. **For values less than 10 ohms:** Industrial Grade; substitute **G** for third digit, making desired resistance value the first two digits multiplied by 0.1—e.g., **27G**=2.7 ohms; for MIL-R-11 and MIL-R-39008 substitute **R** for decimal point—e.g., **2R7**=2.7 ohms.

(D) Tolerance: Code for ±5% is **5** for Industrial Grade, **J** for MIL types; ±10% is **1** for Industrial Grade, **K** for MIL types.

(E) MIL-R-39008 resistors only; expresses Failure Rate Level at 50% rated wattage in % per 1,000 hours: M=1.0%, P=0.1%, R=0.01%, S=0.001%. Available only in "S" level.

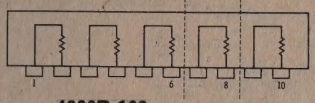
THICK FILM RESISTOR NETWORKS

The following resistor networks feature reduced PC board space; compatibility with automatic insertion equipment; uniform performance characteristics and compatibility with IC logic circuit environments. Molded epoxy body with tin plated copper alloy leads. Lead solderability meets requirements of MIL-STD-202E, Method 208; MIL-STD-883, Method 2003 and MIL-R-83401. Resistance Tolerance: ±2%. Operating Temperature Range: −55° C to +125° C Resistance TC: ±100 ppm/° C max.

4114R-001
4116R-001

MULTIPLE EQUAL-VALUE RESISTOR NETWORKS

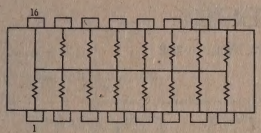
Circuitry and applications: Type 4306R, 3 isolated resistors; Type 4308R, 4 isolated resistors; Type 4310R, 5 isolated resistors; Type 4114R, 7 isolated resistors; Type 4116R, 8 isolated resistors. Intended for power gate pull-up, impedance balancing, current limiting, line termination and ECL output pull-down.



4306R-102
4308R-102
4310R-102

Bourns No.*	Pkg.	No. of Pins	Resistance Values, Ohms R1	R2	R3	Net Each, Lots of 1-24	25-99	100-249	250-499	500-999	1000-1999
4306R-102-*	SIP	6	†	.....		$0.48	$0.48	$0.38	$0.38	$0.31	$0.30
4308R-102-*	SIP	8	†	.....		.50	.50	.40	.40	.34	.31
4310R-102-*	SIP	10	†	.....		.52	.52	.42	.42	.36	.32
4114R-001-*	DIP	14	†	.....		1.15	1.15	.93	.75	.66	.59
4116R-001-*	DIP	16	†	.....		1.20	1.20	.95	.77	.68	.61

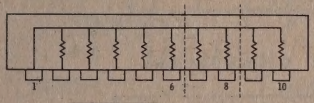
Circuitry and applications: Type 4306R, 5 resistors with pin 1 common; Type 4308R, 7 resistors with pin 1 common; Type 4310R, 9 resistors with pin 1 common; Type 4114R, 13 resistors with pin 13 common; Type 4116R, 15 resistors with pin 16 common. Intended for open collector pull-up, wired OR pull-up, TTL input pull-down, MOS memory pull-up and pull-down, unused gate pull-up and power driver pull-up.



4116R-002

4306R-101-*	SIP	6	†	.....		$0.48	$0.48	$0.38	$0.38	$0.31	$0.30
4308R-101-*	SIP	8	†	.....		.50	.50	.40	.40	.34	.31
4310R-101-*	SIP	10	†	.....		.52	.52	.42	.42	.36	.32
4114R-002-*	DIP	14	†	.....		1.20	1.20	.95	.77	.68	.61
4116R-002-*	DIP	16	†	.....		1.25	1.25	.98	.79	.70	.62

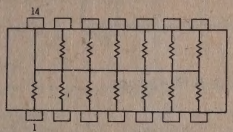
*Add suffix defining resistance value: two digits indicating significant figures and a third indicating number of zeroes following.



4306R-101
4308R-101
4310R-101

†STANDARD AVAILABLE RESISTANCE VALUES

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
33	82	220	560	1500	3900	10K	27K	68K	180K
39	100	270	680	1800	4700	12K	33K	82K	220K
47	120	330	820	2200	5600	15K	39K	100K	
56	150	390	1000	2700	6800	18K	47K	120K	
68	180	470	1200	3300	8200	22K	56K	150K	



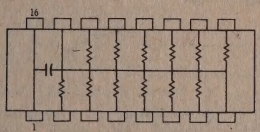
4114R-002

Circuitry and application: 12 resistors with pin 8 common and internal .01μF decoupling capacitor between pin 8 and pins 1 and 16. Intended for ECL pull-down to a −5.2 volt bus.

Bourns No.*	Pkg.	No. of Pins	Resistance Values, Ohms R1	R2	R3	Net Each, Lots of 1-24	25-99	100-249	250-499	500-999	1000-1999
4116C-005-511	DIP	16	510	.....		$2.35	$2.35	$2.00	$1.70	$1.40	*

Circuitry and applications: 12 resistors with pin 9 common and internal .01μF decoupling capacitor between pin 9 and pins 1 and 16. Intended for ECL line termination to a −2.0 volt bus.

4116C-004-500	DIP	16	50	.....	$2.35	$2.35	$2.00	$1.70	$1.40	*
4116C-004-680			68	.....						
4116C-004-750			75	.....						
4116C-004-101			100	.....						



4116C-005

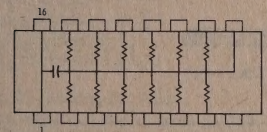
TERMINATING NETWORKS

Application: Four equivalent Thevenin terminator sections compatible with ECL pin configurations.

4116C-006-500	DIP	16	81	130	$2.50	$2.50	$2.25	$2.25	$1.50	*
4116C-006-750			121	195						
4116C-0060100			162	260						

Application: For use with 10,000 Series ECL to terminate six lines at their driven ends. Internal .01μF decoupling capacitor bypasses transients on supply buses.

4116C-007-430	DIP	16	43	457	$2.50	$2.50	$2.25	$2.25	$1.50	*
4116C-007-680			68	682						
4116C-007-930			93	907						

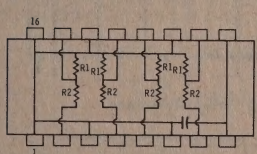


4116C-004

*Consult factory or distributor.

Application: Provides TTL dual line termination.

4308R-103-181/391	SIP	8	180	390	$1.07	$1.07	$0.86	$0.86	$0.73	$0.67
4308R-103-221/271			220	270						
4308R-103-221/331			220	330						
4116R-003-181/391	DIP	16	180	290	2.30	2.14	1.88	1.50	1.34	1.20
4116R-003-221/271			220	270						
4116R-003-221/331			220	330						

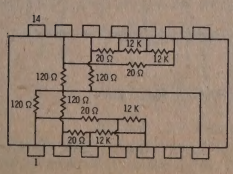


4116C-006

Application: Provides translation from TTL to ECL IC logic.

4116R-008-001	DIP	16	180	270	820	$2.20	$2.20	$1.80	$1.50	$1.25	$1.15

Application: Provides 20mV threshold reference settings and balanced sense-line termination for two 711 dual comparators.

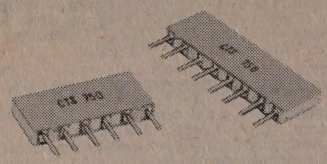


4114R-009

Bourns No.	Pkg.	No. of Pins	Term.	Imped. Ohms	Net Each, Lots of 1-24	25-99	100-249	250-499	500-999	1000-1999
4114R-009	DIP	14		120	$2.10	$2.10	$1.70	$1.55	$1.43	$1.10

CTS Resistor Networks

SERIES 750 SINGLE-IN-LINE CERMET RESISTOR NETWORKS



Low profile, space-saving single-in-line cermet resistor networks are specifically designed to save space. Feature ultra high stability and reliability, four standard SIP configurations, automatic insertion capabilities. Compact edge-mount modules have thick-film cermet resistors. Lead spacing is on .100″ centers. **Resistance Range:** Shown in table. **Tolerance:** ± 2%. **Resistor Material:** Cermet. **Substrate Material:** Alumina. **Lead Pull Strength:** 5 lbs. **Power Rating:** Watts, 6 pin, .9 watt at 70° C per module; 8 pin, 1.1 watt at 70° C per module. **Size:** 6 pin, .578″ w. x .080″ thick x .242″ h., terminal length, .100″; 8 pin, same, except .778″ wide.

STANDARD "OFF THE SHELF" PART NUMBERS*

To order, complete CTS Number by adding resistance value desired, in ohms; e.g., 750-61-R100Ω. See table for complete CTS numbers.

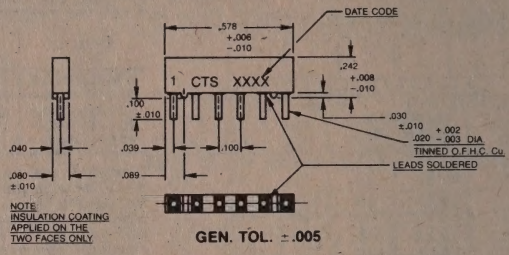
Resis. Ohms	6 Pin, 3 Resistor, 750-63-	6 Pin, 5 Resistor, 750-61-	8 Pin, 4 Resistor, 750-83-	8 Pin, 7 Resistor, 750-81-
33Ω	R33Ω	R33Ω	R33Ω	R33Ω
47Ω	—	—	R47Ω	—
51Ω	—	R51Ω	—	R51Ω
56Ω	—	—	—	R56Ω
68Ω	R68Ω	—	R68Ω	R68Ω
75Ω	—	—	R75Ω	—
82Ω	—	—	—	R82Ω
91Ω	—	R91Ω	—	R91Ω
100Ω	R100Ω	R100Ω	R100Ω	R100Ω
120Ω	—	—	R120Ω	R120Ω
150Ω	R150Ω	R150Ω	R150Ω	R150Ω
180Ω	—	—	—	R180Ω
200	—	R200Ω	—	R200Ω
220	R220Ω	R220Ω	R220Ω	R220Ω
270Ω	—	—	—	R270Ω
330Ω	R330Ω	R330Ω	R330Ω	R330Ω
360Ω	—	R360Ω	—	—
470Ω	R470Ω	R470Ω	R470Ω	R470Ω
500Ω	—	R500Ω	—	R500Ω
510Ω	—	R510Ω	—	R510Ω
560Ω	—	—	—	R560Ω
680Ω	R680Ω	R680Ω	R680Ω	R680Ω
910Ω	—	—	—	R910Ω
1KΩ	R1KΩ	R1KΩ	R1KΩ	R1KΩ
1.2KΩ	—	—	—	R1.2KΩ
1.5KΩ	R1.5KΩ	R1.5KΩ	R1.5KΩ	R1.5KΩ
2KΩ	R2KΩ	R2KΩ	R2KΩ	R2KΩ
2.2KΩ	R2.2KΩ	R2.2KΩ	R2.2KΩ	R2.2KΩ
2.7KΩ	—	R2.7KΩ	—	R2.7KΩ
3.3KΩ	R3.3KΩ	R3.3KΩ	R3.3KΩ	R3.3KΩ
3.9KΩ	—	—	—	R3.9KΩ
4.7KΩ	R4.7KΩ	R4.7KΩ	R4.7KΩ	R4.7KΩ
5.1KΩ	—	—	R5.1KΩ	— —
5.6KΩ	—	—	—	R5.6KΩ
6.8KΩ	R6.8KΩ	R6.8KΩ	R6.8KΩ	R6.8KΩ
10KΩ	R10KΩ	R10KΩ	R10KΩ	R10KΩ
12KΩ	—	R12KΩ	—	—
13KΩ	—	—	—	R13KΩ
15KΩ	R15KΩ	R15KΩ	R15KΩ	R15KΩ
22KΩ	R22KΩ	R22KΩ	R22KΩ	R22KΩ
33KΩ	R33KΩ	R33KΩ	R33KΩ	R33KΩ
47KΩ	R47KΩ	R47KΩ	R47KΩ	R47KΩ
56KΩ	—	—	—	R56KΩ
68KΩ	R68KΩ	R68KΩ	R68KΩ	R68KΩ
75KΩ	—	—	—	R75KΩ
100KΩ	R100KΩ	R100KΩ	R100KΩ	R100KΩ
120KΩ	—	—	—	R120KΩ
150KΩ	R150KΩ	R150KΩ	R150KΩ	R150KΩ
220KΩ	R220KΩ	R220KΩ	R220KΩ	R220KΩ
470KΩ	R470KΩ	R470KΩ	R470KΩ	R470KΩ
510KΩ	—	—	R510KΩ	—

***NOTE:** Additional resistance values are being added constantly. Please contact your local CTS industrial distributor to check availability of values not shown above.

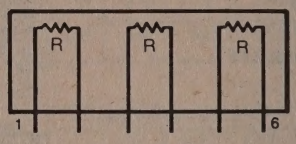
CTS Number	Description	Net Each, Lots of 1-99	100-499	500-999
750-61-R	6 Pin, 5 resistors	$0.85	$0.65	$0.40
750-63-R	6 Pin, 3 resistors	.80	.62	.38
750-81-R	8 Pin, 7 resistors	.95	.75	.45
750-83-R	8 Pin, 4 resistors	.90	.68	.41

6 Pin

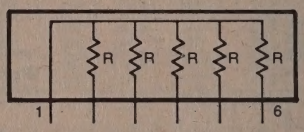
PART NUMBER



GEN. TOL. ±.005



750-63-R 6 Pin-3 Resistors

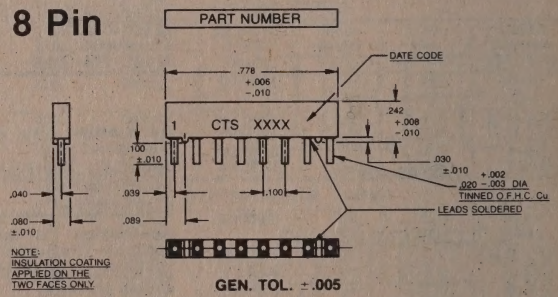


750-61-R 6 Pin-5 Resistors

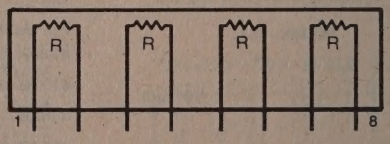
Applications: Power gate pull-up, impedance balancing, current limiting, line termination, ECL output pull-down.

8 Pin

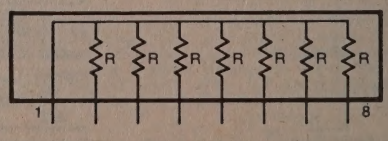
PART NUMBER



GEN. TOL. ±.005



750-83-R 8 Pin-4 Resistors



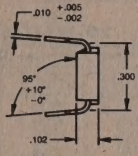
750-81-R 8 Pin-7 Resistors

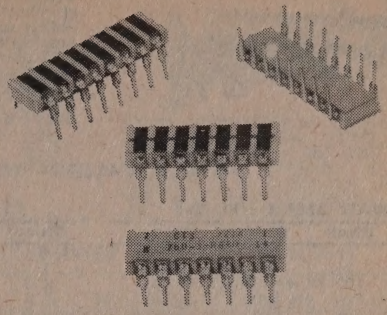
Applications: Open collector pull-up, wired OR pull-up, TTL input pull-down, MOS memory pull-up/pull-down, unused gate pull-up, power driver pull-up.

CTS Resistor Networks

SERIES 760 DUAL-IN-LINE CERMET RESISTOR NETWORKS

Low-height profile, dual-in-line cermet resistor networks available in 14-lead and 16-lead models. Compatible with low cost automatic handling and insertion equipment. Provide high overload capabilities. **Resistance Values:** Shown in table. **Tolerance:** ±2%. **Power Rating:** 14-Lead, 1½ watts at 70° C per module; 16-lead, 1¾ watts at 70° C per module. **Substrate Material:** Alumina. **Resistor Material:** Thick-film cermet. **Lead Material:** Solder coated copper. **Insulation Coating:** Organic, epoxy phenolic. **Lead Strength:** 5 lb. pull. **Lead Spacing:** .100". **Size:** 14-Lead module, .750" x .250" x .102", lead length, .110"; 16-lead module, same, except .850" length.





179 STANDARD "OFF THE SHELF" PART NUMBERS*

To order, complete CTS Number by adding resistance value desired, in ohms; e.g., 760-1-R68. See table for complete CTS numbers.

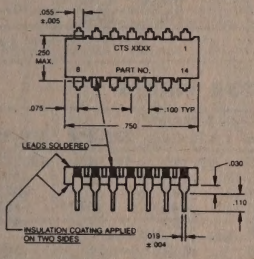
Resis. Ohms	14 Pin 7 Resis. 760-3-	14 Pin 13 Resis. 760-1-	Resis. Ohms	16 Pin 8 Resis. 761-3-	16 Pin 15 Resis. 761-1-
22Ω	R22Ω	R22Ω	51Ω	R51Ω	R51Ω
27Ω	—	R27Ω	68Ω	R68Ω	R68Ω
33Ω	—	R33Ω	87.5Ω	R87.5Ω	—
39Ω	R39Ω	R39Ω	100Ω	R100Ω	R100Ω
47Ω	R47Ω	R47Ω	110Ω	R110Ω	—
51Ω	R51Ω	R51Ω	150Ω	R150Ω	R150Ω
56Ω	—	R56Ω	220Ω	R220Ω	R220Ω
68Ω	R68Ω	R68Ω	240Ω	—	R240Ω
75Ω	—	R75Ω	270Ω	—	R270Ω
100Ω	R100Ω	R100Ω	300Ω	R300Ω	—
110Ω	R110Ω	—	330Ω	R330Ω	R330Ω
120Ω	—	R120Ω	470Ω	R470Ω	R470Ω
150Ω	R150Ω	R150Ω	500Ω	—	R500Ω
175Ω	—	R175Ω	560Ω	R560Ω	R560Ω
180Ω	R180Ω	—	680Ω	R680Ω	R680Ω
200Ω	R200Ω	R200Ω	820Ω	R820Ω	—
220Ω	R220Ω	R220Ω	1KΩ	R1KΩ	R1KΩ
240Ω	R240Ω	—	1.2KΩ	—	R1.2KΩ
270Ω	R270Ω	—	1.5KΩ	R1.5KΩ	R1.5KΩ
330Ω	R330Ω	R330Ω	2KΩ	R2KΩ	R2KΩ
390Ω	—	R390Ω	2.2KΩ	R2.2KΩ	R2.2KΩ
470Ω	R470Ω	R470Ω	3KΩ	—	R3KΩ
500Ω	R500Ω	R500Ω	3.3KΩ	R3.3KΩ	R3.3KΩ
510Ω	R510Ω	—	4.7KΩ	R4.7KΩ	R4.7KΩ
560Ω	R560Ω	—	5.1KΩ	R5.1KΩ	R5.1KΩ
680Ω	R680Ω	R680Ω	5.6KΩ	—	R5.6KΩ
820Ω	R820Ω	—	6KΩ	R6KΩ	R6KΩ
1KΩ	R1KΩ	R1KΩ	6.8KΩ	R6.8KΩ	R6.8KΩ
1.5KΩ	R1.5KΩ	R1.5KΩ	10KΩ	R10KΩ	R10KΩ
1.6KΩ	—	R1.6KΩ	15KΩ	R15KΩ	R15KΩ
1.8KΩ	R1.8KΩ	—	22KΩ	R22KΩ	R22KΩ
2KΩ	—	R2KΩ	27KΩ	R27KΩ	—
2.2KΩ	R2.2KΩ	R2.2KΩ	33KΩ	R33KΩ	R33KΩ
2.4KΩ	—	R2.4KΩ	47KΩ	R47KΩ	R47KΩ
2.7KΩ	R2.7KΩ	—	50KΩ	R50KΩ	R50KΩ
3KΩ	R3KΩ	R3KΩ	56KΩ	R56KΩ	—
3.3KΩ	R3.3KΩ	R3.3KΩ	68KΩ	R68KΩ	R68KΩ
4.3KΩ	R4.3KΩ	—	100KΩ	R100KΩ	R100KΩ
4.7KΩ	R4.7KΩ	R4.7KΩ	150KΩ	R150KΩ	R150KΩ
5KΩ	—	R5KΩ	220KΩ	R220KΩ	R220KΩ
5.6KΩ	—	R5.6KΩ	470KΩ	R470KΩ	—
6KΩ	R6KΩ	R6KΩ			
6.8KΩ	R6.8KΩ	R6.8KΩ			
7.5KΩ	R7.5KΩ	R7.5KΩ			
9.1KΩ	—	9.1KΩ			
10KΩ	R10KΩ	R10KΩ			
11KΩ	—	R11KΩ			
12KΩ	R12KΩ	R12KΩ			
15KΩ	R15KΩ	R15KΩ			
18KΩ	R18KΩ	—			
20KΩ	—	R20KΩ			
22KΩ	R22KΩ	R22KΩ			
27KΩ	—	R27KΩ			
33KΩ	R33KΩ	R33KΩ			
47KΩ	R47KΩ	R47KΩ			
50KΩ	—	R50KΩ			
68KΩ	R68KΩ	R68KΩ			
75KΩ	R75KΩ	—			
100KΩ	R100KΩ	R100KΩ			
150KΩ	R150KΩ	R150KΩ			
180KΩ	—	R180KΩ			
220KΩ	R220KΩ	R220KΩ			
330KΩ	R330KΩ	—			

Resis. Ohms R1/R2	14 Pin 24 Resis. 760-5-
200Ω/240Ω	R200/240
220Ω/270Ω	R220/270
220Ω/330Ω	R220/330
220Ω/470Ω	R220/470
330Ω/390Ω	R330/390
330Ω/470Ω	R330/470
680Ω/1.5KΩ	R680/1.5K
1.5KΩ/3.3KΩ	R1.5K/3.3K

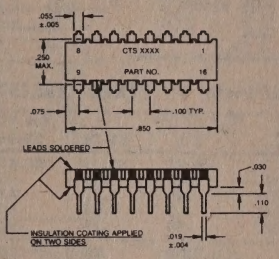
Resis. Ohms R1/R2	16 Pin 28 Resis. 761-5-
180Ω/390Ω	R180/390
190Ω/1K	R190/1K
220Ω/270Ω	R220/270
220Ω/330Ω	R220/330
1.5K/3.3K	R1.5K/3.3K

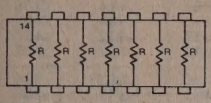
***NOTE:** Additional resistance values are being added constantly. Please contact your local CTS industrial distributor to check availability of values not shown above.

14 Pin

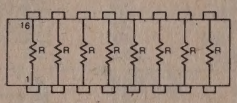


16 Pin



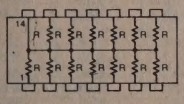


760-3-R 14 Pin-7 Resis.

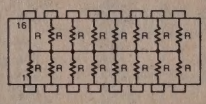


761-3-R 16 Pin-8 Resis.

Applications: "Wired OR" pull-up; power driver pull-up; power gate pull-up; line termination; long-line impedance balancing; LED current limiting; ECL output pull-down resistors; TTL input pull-down.

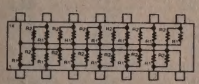


760-1-R 14 Pin-13 Resis.

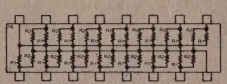


761-1-R 16 Pin-15 Resis.

Applications: MOS/ROM pull-up/pull-down; open collector pull-up; "wired OR" pull-up; power driver pull-up; high speed parallel pull-up. TTL unused gate pull-up; TTL input pull-down; digital pulse squaring.

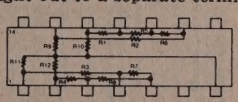


760-5-R 14 Pin-24 Resis.



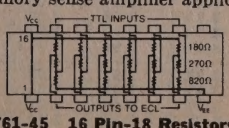
761-5-R 16 Pin-28 Resis.

Applications: Pulse squaring TTL terminators. CTS 760-5 and CTS 761-5 networks consist of two resistor pairs of above value combinations. Resistors are connected together in series with common line for power and common line for ground. Junction of each pair is brought out to a separate terminal.



760-19 14 Pin-12 Resistors

Interface Network: CTS 760-19 resistor network provides compatible interfacing with the μA711 dual differential voltage comparator for core memory sense amplifier applications.



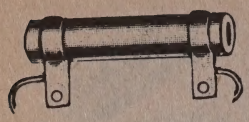
761-45 16 Pin-18 Resistors

TTL to ECL Translator: CTS 761-45 network consists of 18 resistors internally divided into six identical three-resistor sections for direct translation from TTL to ECL language.

CTS No.	Description	Net Each, Lots of 1-99	100-499	500-999
760-1-R	14 Pin DIP, 13 resistors	$1.45	$1.12	$0.91
760-3-R	14 Pin DIP, 7 resistors	1.25	.99	.74
760-5-R	14 Pin DIP, 24 resistors	2.50	2.00	1.75
760-19-R	14 Pin DIP, 12 resistors	2.20	1.78	1.55
761-1-R	16 Pin DIP, 15 resistors	1.52	1.18	1.02
761-3-R	16 Pin DIP, 8 resistors	1.31	1.04	.81
761-5-R	16 Pin DIP, 28 resistors	2.60	2.10	1.85
761-45-R	16 Pin DIP, 18 resistors	2.40	1.90	1.50

Clarostat Vitreous-Enamel Resistors

GREENOHM V™ FIXED POWER RESISTORS



Vitreous enamel, wire-wound power resistors are engineered to meet or exceed MIL-R-26 specifications. Wire windings are finest grade resistance alloy. Designed for utmost reliability and stability under adverse conditions. Teal green enamel finish withstands overheating without peeling or cracking. Tolerance, ±5% except values under 1 ohm, ±10%. VPR types (up to 20 watts) have wire lead and lug terminals, illustrated at left. VP and VK types (25 watts and up) have lug terminals, and mounting bracket. **Core Size:** VPR-5-F, 1″ x 5/16″ dia.; VPR-10-F, 1¾″ x 5/16″ dia.; VPR-20-H, 2″ x 7/16″ dia.; VP-25-K 2″ x 9/16″ dia.; VP-50-K, 4″ x 9/16″ dia.; VK-100-N, 6½″ x ¾″ dia.; VK-160-W, 8½″ x 1⅛″ dia.; VK-200-W, 10½″ x 1⅛″ dia.

STOCK VALUES—WITH WIRE LEAD AND LUG TERMINALS

8-WATT SERIES VPR-5-F

Ohms	Ohms	Ohms	Ohms
1	50	750	4500
1.5	75	800	5000
2	100	900	6000
3	125	1000	7000
4	150	1100	7500
5	200	1200	8000
7.5	225	1250	9000
10	250	1500	10K
12	300	1750	12.5K
15	350	2000	15K
20	400	2250	17.5K
25	450	2500	20K
30	500	3000	22.5K
35	600	3500	25K
40	700	4000	

12-WATT SERIES VPR-10-F

Ohms	Ohms	Ohms	Ohms	Ohms
0.4	30	500	3000	13.5K
1	35	600	3500	14.3K
1.2	40	700	4000	15K
1.3	50	750	4500	16K
1.5	75	800	5000	17.5K
2	100	900	6000	18K
3	125	1000	7000	20K
4	150	1100	7500	22.5K
5	200	1200	8000	25K
7.5	225	1250	8500	30K
10	250	1500	9000	35K
12	300	1750	10K	40K
15	350	2000	11K	45K
20	400	2250	12K	50K
25	450	2500	12.5K	

20-WATT SERIES VPR-20-H

Ohms	Ohms	Ohms	Ohms	Ohms
0.4	350	1850	7500	55K
0.6	400	2000	8000	60K
0.8	500	2250	9000	65K
5	650	2400	10K	70K
10	700	2500	12.5K	75K
25	750	2750	15K	80K
50	800	3000	20K	85K
75	850	3500	25K	90K
100	1000	4000	30K	95K
150	1200	4500	35K	100K
200	1250	5000	40K	
250	1500	6000	45K	
300	1750	7000	50K	

STOCK VALUES—WITH LUG TERMINALS AND MOUNTING BRACKET

25-WATT SERIES VP-25-K

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	800	5000	30K
2	75	1000	6000	35K
3	100	1500	7500	40K
4	150	2000	10K	50K
5	200	2500	12K	60K
10	250	3000	15K	70K
15	500	3500	20K	80K
25	750	4000	25K	100K

50-WATT SERIES VP-50-K

Ohms	Ohms	Ohms	Ohms	Ohms
1	100	1000	7500	50K
2	150	1250	8000	75K
3	200	1500	10K	100K
4	250	2000	12K	125K
5	300	2500	15K	150K
10	400	3000	20K	175K
25	500	4000	25K	200K
50	750	5000	30K	225K
75	800	6000	35K	250K

100-WATT SERIES VK-100-N

Ohms	Ohms	Ohms	Ohms	Ohms
1	75	750	7500	60K
2	100	1000	10K	75K
3	125	1500	15K	100K
4	150	2000	20K	200K
5	200	2500	25K	
10	250	3000	30K	
25	300	4000	40K	
50	500	5000	50K	

160-WATT SERIES VK-160-W

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	7500	50K
2	75	1000	10K	60K
3	100	1500	15K	75K
4	125	2000	20K	100K
5	150	2500	25K	
10	250	3000	30K	
25	500	5000	40K	

200-WATT SERIES VK-200-W

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	7500	40K
2	75	1000	10K	50K
3	100	1500	12K	60K
4	150	2000	15K	75K
5	200	2500	20K	100K
10	250	3000	25K	
25	500	5000	30K	

"GREENOHM V" FIXED RESISTOR PRICES

Series	Range, Ohms	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999
VPR-5-F 8-Watt	1.0–1000	$0.61	$0.53	$0.43	$0.349	$0.309	$0.287
	1100–5000	.65	.57	.46	.367	.327	.304
	6000–10K	.69	.59	.48	.388	.343	.319
	12.5K–20K	.77	.68	.55	.438	.387	.361
	22.5K–25K	.88	.76	.62	.499	.440	.410
VPR-10-F 12-Watt	0.4	1.08	.95	.75	.612	.541	.504
	1.0–1000	.68	.59	.47	.383	.338	.316
	1100–5000	.73	.63	.51	.408	.361	.336
	6000–10K	.83	.73	.58	.469	.414	.386
	11K–20K	.94	.80	.65	.530	.469	.436
	22.5K–35K	.98	.86	.69	.557	.492	.458
	40K–50K	1.10	.96	.76	.624	.551	.513
VPR-20-H 20-Watt	0.4–0.8	1.12	.98	.78	.635	.562	.524
	5–1000	.77	.67	.53	.433	.383	.356
	1200–5000	.79	.69	.56	.448	.395	.37
	6000–10K	.94	.80	.65	.530	.469	.437
	12.5K–20K	.97	.84	.67	.542	.480	.448
	25K–40K	1.12	.98	.79	.634	.561	.521
	45K–60K	1.30	1.13	.91	.735	.650	.606
	65K–75K	1.36	1.20	.96	.776	.685	.638
	80K–100K	1.45	1.29	1.03	.832	.735	.684
VP-25-K 25-Watt	1.0–1000	.80	.72	.68	.461	.408	.380
	1500–5000	.85	.74	.59	.477	.425	.396
	6000–10K	.97	.84	.67	.543	.481	.448
	12K–20K	1.01	.88	.72	.576	.509	.474
	25K–40K	1.18	1.03	.83	.664	.589	.548
	50K–60K	1.36	1.19	.96	.774	.685	.637
	70K	1.61	1.41	1.11	.909	.805	.749
	80K–100K	1.86	1.62	1.30	1.06	.935	.870
VP-50-K 50-Watt	1.0–1000	1.25	1.09	.87	.711	.627	.583
	1250–5000	1.29	1.12	.89	.728	.644	.601
	6000–10K	1.39	1.21	.97	.785	.694	.648
	12K–20K	1.53	1.33	1.07	.862	.763	.711
	25K–35K	1.77	1.54	1.22	.996	.881	.820
	50K	1.96	1.71	1.35	1.11	.981	.912
	75K	2.22	1.94	1.55	1.25	1.11	1.04
	100K	2.42	2.09	1.68	1.36	1.21	1.12
	125K	2.77	2.17	1.93	1.56	1.40	1.29
	150K	3.10	2.66	2.17	1.76	1.55	1.44
	175K	3.43	2.99	2.41	1.95	1.73	1.56
	200K	3.62	3.15	2.52	2.05	1.82	1.69
	225K–250K	3.86	3.36	2.68	2.19	1.94	1.79
VK-100-N 100-Watt	1.0–1000	1.95	1.69	1.35	1.10	.980	.....
	1500–5000	2.09	1.82	1.45	1.19	1.04	.....
	7500–10K	2.22	1.94	1.55	1.25	1.11	.....
	15K–20K	2.38	2.06	1.65	1.34	1.19	.....
	25K–60K	2.51	2.18	1.74	1.42	1.25	.....
	75K	2.65	2.30	1.84	1.50	1.32	.....
	100K	2.95	2.56	2.06	1.67	1.47	.....
	200K	4.86	4.21	3.37	2.74	2.42	.....
VK-160-W 160-Watt	1.0–1000	3.06	2.66	2.13	1.73	1.54	.....
	1500–5000	3.13	2.71	2.17	1.77	1.56	.....
	7500–10K	3.42	2.98	2.39	1.94	1.71	.....
	15K–20K	3.71	3.22	2.57	2.09	1.85	.....
	25K–60K	3.89	3.39	2.71	2.20	1.95	.....
	75K	4.04	3.51	2.77	2.29	2.02	.....
	100K	4.18	3.63	2.90	2.37	2.09	.....
VK-200-W 200-Watt	1.0–1000	3.45	2.90	2.32	1.89	1.67	.....
	1500–5000	3.40	2.95	2.37	1.93	1.69	.....
	7500–10K	3.55	3.10	2.49	2.01	1.78	.....
	12K–20K	3.70	3.22	2.57	2.09	1.85	.....
	25K–60K	3.84	3.34	2.67	2.17	1.93	.....
	75K	4.04	3.51	2.81	2.29	2.02	.....
	100K	4.26	3.71	2.97	2.41	2.13	.....

Clarostat Vitreous-Enamel Resistors

GREENOHM V™ ADJUSTABLE POWER RESISTORS

STOCK VALUES

12-WATT SERIES VP-10-FA

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	500	2500	8000
2	75	600	3000	8500
3	100	750	3500	9000
5	150	800	4000	10K
7.5	200	1000	4500	
10	250	1250	5000	
15	300	1500	6000	
20	350	2000	7000	
25	400	2250	7500	

25-WATT SERIES VP-25-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	3500	9000
2	75	800	4000	10K
3	100	1000	4500	12K
5	150	1250	5000	15K
7.5	200	1500	6000	20K
10	250	2000	7000	25K
15	300	2250	7200	
20	400	2500	7500	
25	500	3000	8000	

50-WATT SERIES VP-50-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	100	1250	6000	25K
2	150	1500	7000	30K
3	200	2000	7200	35K
4	250	2250	7500	40K
5	300	2500	8000	50K
10	400	3000	9000	60K
20	500	3500	10K	75K
25	750	4000	12K	80K
50	800	4500	15K	100K
75	1000	5000	20K	

75-WATT SERIES VP-75-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	200	2000	7200	35K
2	250	2250	7500	40K
3	300	2500	8000	45K
4	400	3000	9000	50K
5	500	3500	10K	60K
10	750	4000	12K	80K
15	800	4500	15K	100K
25	1000	5000	20K	
50	1250	6000	25K	
100	1500	7000	30K	

100-WATT SERIES VK-100-NA

Ohms	Ohms	Ohms	Ohms	Ohms
1	25	400	3500	40K
2	50	500	5000	50K
3	100	750	10K	75K
4	150	1000	15K	100K
5	200	1500	20K	
10	250	2000	25K	
15	300	2500	30K	

160-WATT SERIES VK-160-WA

Ohms	Ohms	Ohms	Ohms	Ohms
1	10	250	5000	30K
2	25	500	10K	40K
3	50	1000	15K	50K
4	100	1500	20K	75K
5	150	2500	25K	100K

200-WATT SERIES VK-200-WA

Ohms	Ohms	Ohms	Ohms	Ohms
1	20	200	2500	30K
2	25	250	5000	40K
3	50	300	10K	50K
4	75	500	15K	75K
5	100	1000	20K	100K
10	150	1500	25K	

Same construction as Greenohm V fixed resistors. Tolerance, ±10%. **Core Size:** VP-10-FA, 1¼" x 5/16" dia.; VP-25-KA, 2" x 9/16" dia.; VP-50-KA, 4" x 9/16" dia.; VP-75-KA, 6" x 9/16" dia.; VK-100-NA, 6½" x ¾" dia.; VK-160-WA, 8½" x 1⅛" dia.; VK-200-WA, 10½" x 1⅛" dia.

ADJUSTABLE POWER RESISTOR PRICES

Series	Range, Ohms	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999
VP-10-FA 12-Watt	1.0–1000	$0.88	$0.80	$0.69	$0.606	$0.569	$0.546
	1250–5000	.94	.84	.73	.629	.581	.557
	6000–10K	1.03	.94	.79	.690	.641	.605
VP-25-KA 25-Watt	1.0–1000	.99	.89	.75	.642	.590	.561
	1250–5000	1.03	.92	.77	.662	.606	.578
	6000–10K	1.16	1.01	.85	.725	.662	.629
	12K–20K	1.20	1.07	.89	.758	.691	.656
	25K	1.35	1.21	1.00	.846	.770	.729
VP-50-KA 50-Watt	1.0–1000	1.50	1.33	1.11	.953	.869	.825
	1250–5000	1.53	1.36	1.13	.970	.886	.843
	6000–10K	1.64	1.45	1.21	1.027	.936	.890
	12K–20K	1.77	1.57	1.31	1.10	1.01	.954
	25K–40K	2.01	1.72	1.46	1.23	1.12	1.06
	50K–60K	2.20	1.95	1.60	1.35	1.22	1.16
	75K–80K	2.46	2.18	1.79	1.50	1.35	1.29
	100K	2.68	2.33	1.93	1.61	1.45	1.36
VP-75-KA 75-Watt	1.0–1000	2.12	1.88	1.56	1.33	1.21	.....
	1250–5000	2.17	1.93	1.60	1.35	1.23	.....
	6000–10K	2.22	1.97	1.64	1.40	1.25	.....
	12K–20K	2.28	2.02	1.68	1.42	1.30	.....
	25K–60K	2.53	2.24	1.85	1.56	1.42	.....
	80K–100K	2.87	2.53	2.08	1.76	1.58	.....
VK-100-NA 100-Watt	1.0–1000	2.31	2.06	1.72	1.46	1.34	.....
	1500–5000	2.45	2.18	1.82	1.55	1.41	.....
	10K	2.59	2.30	1.91	1.62	1.47	.....
	15K–20K	2.74	2.42	2.01	1.71	1.55	.....
	25K–50K	2.87	2.54	2.10	1.78	1.62	.....
	75K	3.01	2.66	2.20	1.86	1.68	.....
	100K	3.31	2.93	2.42	2.04	1.84	.....
VK-160-WA 160-Watt	1.0–1000	3.49	3.09	2.55	2.16	1.96	.....
	1500–5000	3.54	3.14	2.59	2.19	1.98	.....
	10K	3.85	3.40	2.81	2.37	2.13	.....
	15K–20K	4.13	3.70	3.00	2.52	2.28	.....
	25K–50K	4.32	3.82	3.12	2.63	2.38	.....
	75K	4.47	3.94	3.23	2.71	2.44	.....
	100K	4.66	4.06	3.33	2.78	2.52	.....
VK-200-WA 200-Watt	1.0–1000	3.95	3.51	2.88	2.50	2.28	.....
	1500–5000	4.00	3.55	2.97	2.53	2.30	.....
	10K	4.16	3.71	3.09	2.62	2.39	.....
	15K–20K	4.30	3.83	3.18	2.70	2.45	.....
	25K–50K	4.44	3.95	3.28	2.77	2.53	.....
	75K	4.64	4.11	3.41	2.89	2.63	.....
	100K	4.86	4.31	3.52	3.01	2.74	.....

AXIAL LEAD VITREOUS RESISTORS

Ideal for printed circuit, terminal board, and point-to-point wiring applications. Space-saving design, due to elimination of mounting brackets and terminal lugs. Standard resistance tolerance, ±5%. Designed for critical applications, providing high stability and reliability under widely variable environmental conditions. Finished in vitreous shade of teal green. Available in three sizes: 3, 5 or 10 watts. **Size:** VC3D, ¼" dia. x ½" long; VC5E, ⅜" dia. x 1" long; VC10F, 7/16" dia. x 1⅞" long. Leads 1½" long, .032" dia.

STOCK VALUES

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	470	2500	12K*
1.5	56	500	2700	12.5K
2	68	560	3000	13.5K*
3	75	600	3300	15K
4	82	680	3500	16K*
5	100	700	3900	17.5K
7.5	120	750	4000	18K
10	125	800	4500	20K
12	150	820	4700	22K
15	180	900	5000	22.5K
18	200	1000	5600	25K
20	220	1100	6000	27K*
22	225	1200	6800	30K*
25	250	1250	7000	33K*
27	270	1300*	7500	35K*
30	300	1500	8000	39K*
33	330	1750	8200	40K*
35	350	1800	8500*	45K*
39	390	2000	9000	47K*
40	400	2200	10K	50K*
47	450	2250	11K*	

*Available in 10-watt series VC10F only.

PRICES

When ordering, specify resistance value desired from stock values shown at left.

Series	Range, Ohms	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999
VC3D 3-Watt	1.0–100	$0.65	$0.56	$0.45	$0.363	$0.321	$0.298
	120–2500	.59	.52	.41	.333	.296	.276
	2700–5000	.68	.58	.47	.377	.333	.310
	5600–7500	.73	.63	.50	.411	.359	.334
	8000–10K	.85	.74	.59	.480	.425	.394
VC5E 5-Watt	1.0–1000	.65	.56	.44	.363	.321	.298
	1100–5000	.68	.58	.47	.377	.333	.310
	5600–10K	.73	.63	.50	.411	.359	.334
	12.5K–15K	.84	.68	.53	.440	.386	.359
	17.5K–20K	.88	.76	.61	.495	.437	.407
	22K–25K	1.17	1.00	.80	.655	.579	.539
VC10F 10-Watt	1.0–1000	.70	.61	.48	.399	.348	.323
	1100–5000	.77	.68	.53	.440	.386	.360
	5600–10K	.85	.74	.59	.481	.44	.396
	11K–20K	.97	.84	.68	.549	.485	.452
	22K–40K	1.09	.96	.76	.617	.547	.508
	45K–50K	1.29	1.11	.89	.726	.649	.597

CORNING® Resistors

Body Configuration: Conformal coating is tightly controlled to extend over the shoulder of the cap only—not down to the leads (Meniscus control). Prices apply to standard values only.

C

NA, NC

FP

METAL FILM RESISTORS

TYPE C LOW MULTI-WATTAGE TYPES

TC: ±100 ppm/° C from −55° C to +175° C. At ΔR Max.: Moisture resistance, ±0.5%; temp. cycle, short time overload and low temp. operation, ±0.25%; shock and vibration, ±0.10%.

Corning Style	MIL Type	MIL Spec. MIL-R-	Wattage at TZ 70° C	Wattage at TZ 125° C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range, Ohms	Net Each, Lots of 1-24	25-99	100-249	250-999	1000-4999	5000-9999	10,000 Up
C3	.....	22684	⅛ 1/10	..... 1/20	200	.062 x .145	1% 2% 5% 10%	10–150K 10–150K 10–150K 10–150K	$1.25 .64 .37 .34	$0.74 .50 .25 .23	$0.43 .32 .17 .155	$0.33 .187 .14 .12	$0.24 .156 .12 .10	..... $0.150 .11 .090	....
C4	RL07S	22684	¼ ⅛	⅛* 1/10	250	.090 x .225	1% 2% 5%	10–301K 10–301K 10–301K	.70 .29 .27	.50 .25 .23	.23 .18 .16	.14 .115 .10	.11 .080 .070	.090 .070 .066	$0.078 .065 .060
C5	RL20S	22684	½ ¼	¼* ⅛	350	.148 x .355	1% 2% 5%	10–1 meg 10–1 meg 10–1 meg	.70 .29 .27	.50 .25 .23	.23 .18 .16	.14 .115 .10	.11 .080 .070	.090 .070 .066	.078 .065 .060

*Commercial rating. †1000 Up.

1 AND 2 WATT GENERAL PURPOSE TYPES

TC: ±200 ppm/° C from −55° C to +150° C. At ΔR Max.: Moisture resistance, ±1.5% (2% for C42S); temp. cycle, short time overload, low temp. operation, shock and vibration, ±0.5%.

Corning Style	MIL Type	MIL Spec. MIL-R-	Wattage at T_A 70° C	Wattage at T_A 125° C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range, Ohms	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	1000-4999	5000 Up	10,000 Up
FP32	RL32S	22684	1	.....	500	.190 x .562	2% 5%	51–470K 51–470K	$0.35 .30	$0.30 .25	$0.24 .21	$0.15 .13	$0.102 .079	....	....	.....
FP42	RL42S	22684	2	.....	500	.315 x .687		10–1.5 megs 10–1.5 megs	.440 .36	.399 .31	.366 .28	.26 .19	.171 .138	....	....	.....

*1000 Up.

TYPE NA PRECISION TYPES

TC: ±100 ppm/° C from −55° C to +175° C. At ΔR Max.: Moisture resistance, ±0.5%; temp. cycle, short time overload and low temp. operation, ±0.25%; shock and vibration, ±0.10%.

Corning Style	MIL Type	MIL Spec. MIL-R-	Wattage at T_A 70°C	Wattage at T_A 125°C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range Ohms	Net Each, Lots of 1-24	25-99	100-249	250-999	1000-9999	10,000 Up
NA55	RN55D	10509	⅛ ¼*	1/10 ⅛*	200	.090 x .225	1% 0.5%	10–301K 49.9–150K	$0.75 .84	$0.38 .47	$0.18 .27	$0.12 .21	$0.090 .17	$0.075 .15
NA60	RN60D	10509	¼ ½*	⅛ ¼*	300	.148 x .355	1% 0.5%	10–1 meg 49.9–499K	.75 .84	.38 .47	.18 .27	.12 .21	.090 .17	.075 .15
NA65	RN65D	10509	½	¼	350	.190 x .554	1% 0.5%	10–2 meg 49.9–1 meg	.94 1.14	.44 .59	.21 .31	.14 .24	.11 .18	.090 .16
NA70	RN70D	10509	¾	½	500	.248 x .719	1% 0.5%	51.1–1 meg 51.1–1 meg	1.00 1.20	.60 .75	.27 .38	.22 .33	.18 .30	.15 .24

*Commercial rating.

TYPE NC PRECISION TYPES

TC: ±50 ppm/° C from −55° C to +175° C. At ΔR Max.: Moisture resistance, ±0.5%; temp. cycle, short time overload and low temp. operation, ±0.25%; shock and vibration, ±0.10%.

Corning Style	MIL Type	MIL Spec. MIL-R	Wattage at TZ 70° C	Wattage at TZ 125° C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range Ohms	Net Each, Lots of 1-24	25-99	100-249	250-999	1000-9999	10,000 Up
NC3	RN50C	10509	1/10	1/20	200	.062 x .145	1%	49 9–100K	$2.10	$0.86	$0.52	$0.48	$0.37	$0.35
NC55	RN55C	10509	¼	1/10	200	.088 x .245	1%*† 1%*†	49 9–499K 500K–1 meg	.95 1.04	.43 .52	.20 .29	.145 .23	.11 .16	.09 .13
NC60	RN60C	10509	½	⅛	250	.135 x .375	1%*†	49 9–1 meg	.95	.43	.20	.145	.11	.09
NC6	RN65C	10509	½	¼	300	.190 x .554	1%*	49.9–1 meg	1.25	.52	.26	.17	.13	.105
NC7	RN70C	10509	¾	½	350	.248 x .719	1%*	51.1–1 meg	1.72	.78	.39	.23	.21	.195

*For 0.5% tolerance, add 9¢ to resale. †For 0.25% tolerance, add 18¢ to resale; for 0.1% tolerance, add 27¢ to resale.

TYPE NE PRECISION TYPES

TC: ±25ppm/°C from −55° C to +150° C. At ΔR max.: Moisture resistance, ±0.5%; temp. cycle, short time overload and low temp. operation, ±0.25%; shock and vibration, ±0.1%.

Corning Style	MIL Type	MIL Spec. MIL-R	Wattage at T_A 70° C	Wattage at T_A 125° C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range Ohms	Net Each, Lots of 1-24	25-99	100-249	250-499	500-999	1000 Up	10,000 Up
NE55	RN55E	10509	¼	1/10	200	.088 x .245	1%*	49.9–499K 500K–1 meg	$1.65 2.31	$0.98 1.37	$0.65 .91	$0.44 .56	$0.31 .39	....	....
NE60	RN60E	10509	½	⅛	250	.135 x .375	1%*	49.9–1 meg	1.65	.98	.65	.44	.31	.....	.....
NE65	RN65E	10509	1	¼	300	.185 x .575	1%*	49.9–1 meg	2.45	1.49	1.00	.59	.42	.....	.....

*For 0.5% tolerance, add 9¢ to price; for 0.25% tolerance, add 18¢ to price; for 0.1% tolerance, add 27¢ to price.

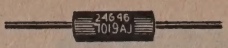
OUR STOCKS ARE FULLY UP-TO-DATE WITH ALL THE LATEST PRODUCTS.

ASK ABOUT NEW OR UNLISTED ITEMS.

CORNING® Resistors

CORNING® ESTABLISHED RELIABILITY RESISTORS

Designed for the many military applications where both established reliability and value are critical. **MIL-R-39017** semi-precision fixed film; this specification supersedes MIL-R-22684. **MIL-R-55182** precision fixed film; this specification supersedes MIL-R-10509. Prices apply to standard values only.



GENERAL ESTABLISHED RELIABILITY INFORMATION

MIL-R-39017

Semi-Precision, Fixed Film, Established Reliability Specification. This specification supersedes MIL-R-22684.

FAILURE RATES

M—1%/1000 hours at 60% confidence
P —.1%/1000 hours at 60% confidence
R —.01%/1000 hours at 60% confidence
S —.001%/1000 hours at 60% confidence

DESIGNATION

RL	R	07	C	103	G	M
Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ

Ⓐ **RL**—Style, Semi-Precision, Fixed Film Resistor

Ⓑ **R**—Established Reliability—RLR MIL-R-39017 Semi-Precision Specification

Ⓒ **07**—Case Size
05—⅛ W, 70° C
07—¼ W, 70° C
20—½ W, 70° C
32—1 W, 70° C
42—2 W, 70° C

Ⓓ **C**—Lead Material
Type C oxygen free, high conductivity copper leads per MIL-STD-1276.

Ⓔ **103**—Value
3 Significant Figure Decade Table

Ⓕ **G**—Tolerance
G (±2%) and J (±5%) are available

Ⓖ **M**—Failure Rate

MIL-R-55182

Precision Fixed Film Established Reliability Specification. This specification supersedes MIL-R-10509.

FAILURE RATES

M—1%/1000 hours at 60% confidence
P —.1%/1000 hours at 60% confidence
R —.01%/1000 hours at 60% confidence
S —.001%/1000 hours at 60% confidence

DESIGNATION

RN	C	55	H	1001	F	M
Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ

Ⓐ **RN**—Style, Precision Fixed Film Resistors

Ⓑ **C**—a. Established Reliability—RNC, MIL-R-55182 Precision Fixed Film Established Reliability.
b. Lead Material—Oxygen free high conductivity Type C Copper per MIL-STD-1276

Ⓒ **55**—Case Size
50—1/20 W, 125° C
55—1/10 W, 125° C
60—⅛ W, 125° C
65—¼ W, 125° C
70—½ W, 125° C

Ⓓ **H**—Temperature Coefficient
H—50 PPM
J —25 PPM
K—100 PPM

Ⓔ **1001**—Value
3 Significant Figure Decade Table

Ⓕ **F**—Tolerance, 1%

Ⓖ **M**—Failure Rate

SEMI-PRECISION MIL-R-39017

TC: 100 ppm/° C. At ΔR Max.: Temp. cycle and low temp. operation, ±0.25%; shock and vibration, ±0.10% (HC3, ±0.25%); short time overload, ±0.25% (HC3, ±0.50%); moisture, ±0.50%. Load Life: Qualification ΔR/2000 hrs., ±2%; failure rate ΔR/10,000 hrs., ±4%. Prices given are for **R** level 0.1%/1000 hrs., except HC6 **M** level 1%/1000 hrs.

Corning Style	MIL Type	Wattage Rating at 70° C	Max. Voltage	Size, Inch Dia. x L.	Std. Tol. ±	Resistance Range, Ohms	Net Each, Lots of 1-24	25-99	100-249	250-999	1000-4999	5000-9999	10,000 UP
HC3	RLR05C	⅛	200	.062 x .145	2%	10–150K	.87	.72	.60	.43	.37	.34	.....
					5%	10–150K	.71	.61	.51	.37	.32	.29	.....
HC4	RLR07C	¼	250	.090 x .225	2%	10–150K	.55	.43	.35	.205	.165	.15	.14
					5%	10–150K	.52	.41	.33	.195	.155	.14	.135
HC5	RLR20C	½	350	.148 x .355	2%	10–1 meg	.55	.43	.35	.205	.165	.15	.14
					5%	10–1 meg	.52	.41	.33	.195	.155	.140	.135
HC6	RLR32C	1	500	.190 x .554	2%	10–1 meg	.90	.71	.63	.35	.285	.25	.....
					5%	10–1 meg	.88	.65	.55	.305	.265	.23	.....

PRECISION MIL-R-55182

TC: 50 ppm/° C HH Series; 100 ppm/° C, HK Series. MIL-R-55182 parts receive a 100% overload and temperature cycle: Overload, 5 x rated wattage for 1 hour at 25° C; reject parts with combined ΔR > ±0.20%. At ΔR Max.: Shock and vibration, ±0.10%; moisture, ±0.4%. Load Life: Qualification R/2000 hrs. ±0.5%; R/10,000 hrs. ±2%. RN**C** copper lead material; direct one-way substitute for RN**R** lead type provided all other characteristics are equal or better. Tolerance of ±0.5% available; prices on request. MIL-R-55182 supersedes MIL-R-10509.

Corning Style	MIL Type	Failure Rate Level	Wattage Rating at 125° C	Max. Voltage	Size, In. Dia. x L.	Std. Tol. ±	Resistance Range, Ohms	Net Each, Lots of 1-24	25-99	100-249	250-999	1000-Up
HH4	RN**C**55H	R*	1/10	200	.090 x .225	1%	49.9–100K	$2.45	$1.36	$0.87	$0.78	$0.66
HK4	RN**C**55K	M	1/10	200	.090 x .225	1%	49.9–100K	2.20	1.19	.83	.77	.62
HH5	RN**C**60H	R*	⅛	250	.148 x .355	1%	49.9–499K	2.20	1.20	.75	.55	.40
HK5	RN**C**60K	M	⅛	250	.148 x .355	1%	49.9–499K	2.20	1.20	.75	.55	.40

*Per MIL-R-55182 **R** level rate is substitutable for **P** and **M** level.

NYTRONICS, INC. Sage Resistors

TYPE S CONFORMAL SILICONE COATED POWER RESISTORS

Wire-wound power resistors in all-welded construction; encapsulated in high temperature silicone resin. Small size and high power rating combine with physical ruggedness. Inductive winding. **Reliability and Stability:** To 0.5% after 1000 hours cycled load life at Char. G power rating. Available to greater stability on special order. **Temperature Coefficient:** To ±20 ppm/° C. **Momentary Overload:** 10 times rated load for 5 seconds. **Shock and Vibration:** To 50 G and 2000 cps with normal lead wire mounting. Superior protection against thermal shock, altitude vibration, moisture and salt spray. **Dielectric:** 1000 V rms, except two smallest sizes, 500 V rms. **MIL Requirements:** Exceed electrical requirements of MIL-R-26E except for dielectric strength test on the two smallest units, cited above. **Leads:** Tinned copperweld standard: other weldable leads available at slightly higher price. **Tolerance:** ±1% standard; precision to ±.05% available on request. RW70 available in 1% only. Non-inductive windings also available on request; write for information.

Sage Style	Rating, Watts	Std. Range, Ohms		Nominal Size, Inches		Lead Dia. In.
		Regular Winding	Non Inductive	Length	Dia.	
100S	1	8400	3000	.400	.094	.020
200S	2	11000	3900	.400	.125	.020
300S	3	15000	5300	.400	.187	.020
250S	0.5	3800	1350	.250	.085	.020
500S	0.8	5000	1750	.312	.094	.020
750S	1	12000	4200	.531	.094	.020
1000S	1	8400	3000	.406	.094	.020
1100S	2	15000	5500	.500	.125	.032
1150S	2	25500	9000	.687	.125	.032
1200S	3	20000	7000	.500	.187	.032
1240S	3	24000	8400	.562	.187	.032
1250S	3	40000	14000	.812	.187	.032
1300S	3	30000	10500	.625	.250	.040
1400S	4	42000	15000	.750	.250	.040
1500S	5	71000	25000	.875	.312	.040
1550S	5	88000	31000	1.000	.312	.040
1600S	7	114000	40000	1.219	.312	.040
1700S	10	230000	80000	1.781	.375	.040
1900S	10	184000	64000	1.375	.431	.040
1950S	11	276000	97000	2.000	.469	.040

PRICE TABLE
FOR STYLE 100S TO 1150S AND RW70

Range, Ohms	Tol., %	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
0.05–0.099	1	$4.56	$3.04	$2.17	$1.67	$1.38	$1.26
0.05–0.099	2	4.56	3.04	2.17	1.67	1.38	1.26
0.05–0.099	3	4.56	3.04	2.17	1.67	1.38	1.26
0.05–0.099	5	4.56	3.04	2.17	1.67	1.38	1.26
0.10–0.99	1	2.29	1.53	1.09	.84	.70	.64
0.10–0.99	2	2.29	1.53	1.09	.84	.70	.64
0.10–0.99	3	2.29	1.53	1.09	.84	.70	.64
0.10–0.99	5	2.29	1.53	1.09	.84	.70	.64
1.00–10K	1	1.42	.95	.68	.52	.43	.39
1.00–10K	2	1.28	.86	.61	.47	.39	.35
1.00–10K	3	1.14	.76	.54	.42	.34	.31
1.00–10K	5	.99	.66	.48	.36	.30	.27
10.1K–15K	1	1.54	1.03	.74	.57	.47	.43
10.1K–15K	2	1.39	.93	.67	.51	.42	.39
10.1K–15K	3	1.23	.82	.59	.46	.38	.34
10.1K–15K	5	1.08	.72	.52	.40	.33	.30

PRICE TABLE FOR STYLES 1200S TO 1950S AND RW55, 56, 67, 68, 69 AND 78

Range, Ohms	Tol., %	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
0.05–0.099	1	$4.37	$2.91	$2.08	$1.60	$1.33	$1.21
0.05–0.099	2	4.37	2.91	2.08	1.60	1.33	1.21
0.05–0.099	3	4.37	2.91	2.08	1.60	1.33	1.21
0.05–0.099	5	4.37	2.91	2.08	1.60	1.33	1.21
0.10–0.99	1	2.49	1.66	1.19	.91	.76	.69
0.10–0.99	2	2.49	1.66	1.19	.91	.76	.69
0.10–0.99	3	2.49	1.66	1.19	.91	.76	.69
0.10–0.99	5	2.49	1.66	1.19	.91	.76	.69
1.0–15K	1	1.27	.85	.61	.47	.36	.33
1.0–15K	2	1.14	.76	.55	.42	.32	.30
1.0–15K	3	1.02	.68	.49	.38	.29	.26
1.0–15K	5	.89	.59	.43	.33	.25	.23
15.1K–125K	1	1.42	.95	.68	.52	.43	.39
15.1K–125K	2	1.28	.85	.61	.47	.39	.35
15.1K–125K	3	1.14	.76	.54	.42	.34	.31
15.1K–125K	5	.99	.66	.48	.36	.30	.27
125.1K–314K	1	1.62	1.08	.77	.59	.49	.45
125.1K–314K	2	1.46	.97	.69	.53	.44	.40
125.1K–314K	3	1.30	.86	.62	.47	.39	.36
125.1K–314K	5	1.13	.76	.54	.41	.34	.31

MIL-R-26 TYPE DESIGNATIONS

Order by complete number consisting of three parts.

RW69: Body style.

V: Wattage rating in the table below at 350° C max.

471: Nominal resistance in ohms. Two significant digits plus third indicating number of zeros. Below 10 ohms resistance, second digit is decimal and last digit is significant.

Tolerance: ±5% for 1 ohm and up resistance; ±10% for less than 1 ohm.

Temperature Coefficient: ±260 ppm/° C for 20 ohms or more; ±400 ppm/° C for less than 20 ohms.

See following page for pricing.

Style		MIL Watts	Defined Ohmic Range*
MIL	Sage		
RW55V	1900S	7	0.1–5100
RW56V	1950S	14	0.1–9100
RW67V	1550S	6.5	0.1–3600
RW68V	1700S	11	0.1–8200
RW69V	1200S	3	0.1–910

*Single layer wound .00175″ min. wire dia.

Following types available in three different tolerance values. Order by complete part number consisting of four parts.

RW70U: Body style.

U: Wattage rating as shown below at 275° C max.

49R9: Nominal resistance in ohms. Three significant digits plus fourth indicating number of zeros. Less than 100 ohms resistance 3rd digit is decimal and following digits are significant.

F: Tolerance, B, ±.1%
D, ±.5%
F, ±1.0%

Temperature Coefficient: ±30 ppm/° C for 10 ohms or more; ±50 ppm/° C for 1–10 ohms; ±90 ppm/° C for less than 1 ohm.

See following page for pricing.

Style		MIL Watts	Max. Volts	Defined Ohmic Range		
MIL	Sage			Min.	Max.*	Max.†
RW70U	1000S	1	.....	.1	1210	3160
RW74U	1500S	5	300	.1	12100	38300
RW78U	1700S	10	720	.1	40200	90900
RW79U	1240S	3	135	.1	3570	10500
RW80U	1000SB	2	.....	.1	1240	3160
RW81U	250SB	1	25	.1	649	1000

*Max. for .001″ wire (Navy). †Max. for .0008″ wire (all other).

TYPE SB AND NSB HIGH WATTAGE COMMERCIAL BERYLLIUM CORE RESISTORS

Solderable leads are standard.

Sage Style	Rated Watts		Weight, Grams
	G*	V†	
250SB	1	1.5	0.18
500SB	1.5	2	0.28
1000SB	2.25	2.75	0.32
1200SB	3.5	4.5	1.0
1240SB	4	5	1.1
1250SB	4.5	6	1.2
1300SB	6	8	1.8
1500SB	7	9	3.6
1600SB	9	12	4.2
1700SB	14	18	7.3

*At 275° C max. †At 350° C max.

PRICE TABLE

For 250SB (RW81U) and 1000SB (RW80U). Other prices available on request.

1% TOLERANCE

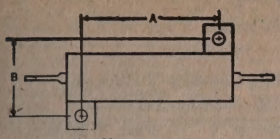
Range, Ohms	Net Each, Lots of					
	1-24	25-49	50-99	100-249	250-499	500-999
0.05–.099	$4.66	$3.14	$2.27	$1.77	$1.48	$1.36
0.10–.99	2.39	1.63	1.19	.94	.80	.74
1.00–10K	1.52	1.05	.78	.62	.53	.49
10.1K–15K	1.64	1.13	.84	.67	.57	.53

5% TOLERANCE

0.05–.099	$4.66	$3.14	$2.27	$1.77	$1.48	$1.36
0.10–.99	2.39	1.63	1.19	.94	.80	.74
1.00–10K	1.09	.76	.58	.46	.40	.37
10.1K–15K	1.18	.82	.62	.50	.43	.40

NYTRONICS, INC. Sage Resistors

TYPE "M" METAL-CLAD CHASSIS MOUNT RESISTORS



"M" Dimensions

Aluminum housed resistors mount directly to a plate for maximum heat dissipation. Improved potting technique affords better heat conduction and dissipation. Internal temperature rise is less than that available in similar "heat sink" resistors. This cooler hot-spot assures longer life, improved stability and greater reliability. After 1000 cycled hours (1½ hr. on, ½ hr. off) at recommended lead, typical resistance shift is 0.3% or less. Dielectric strength up to 2500 v. rms. Precision to 0.05%. Meet or exceed MIL-R-18546D requirements.

Style*		Watts		Size, In.		Resistance Range, Ohms			
Sage	MIL	Sage	MIL	A	B	*	†	‡	§
3105M	RE60G	8	5	.444	.490	24K	8.4K	.1	3.32K
3010M	RE65G	14	10	.562	.625	30K	10.5K	.1	5.62K
3225M	RE70G	25	20	.719	.781	71K	25K	.1	12.1K
3550M	RE75G	50	30	1.562	.844	230K	80K	.1	39.2K

*Regular winding. †Non-inductive winding. ‡Min. §Max. at .001" wire. *For non-inductive winding, change suffix in Sage style from M to **NM** and change suffix in MIL style from G to **N.**

PRICES FOR TYPE "M"

For Sage styles 3105M and 3010M and MIL styles RE60G, and RE65G.

Range, Ohms	Net Each, Lots of					
	1-24	25-49	50-99	100-249	250-499	500-999
0.1–.99	$3.80	$2.53	$1.81	$1.39	$1.16	$1.05
1.0–12K	3.47	2.32	1.65	1.27	1.06	.967
12.1K–30K	3.80	2.53	1.81	1.39	1.16	1.05

For Sage style 3225M. MIL style RE70G.

0.1–.99	$4.09	$2.73	$1.95	$1.50	$1.25	$1.13
1.0–12K	3.67	2.45	1.75	1.34	1.12	1.02
12.1K–50K	4.09	2.73	1.95	1.50	1.25	1.13
50.1K–71K	4.36	2.90	2.06	1.60	1.33	1.21

For Sage style 3550M. NIL style RE75G.

0.1–.99	$4.52	$3.01	$2.15	$2.15	$1.66	$1.38
1.0–12K	4.23	2.82	2.01	2.01	1.55	1.29
12.1K–50K	4.49	2.99	2.14	2.14	1.64	1.37
50.1K–125K	4.78	3.19	2.28	2.28	1.75	1.46
125.1K–230K	5.11	3.41	2.43	2.43	1.87	1.56

TYPE "C" CLIPPER METAL-SHEATHED RESISTORS

All welded construction with single layer wound on ceramic cores. Two fold increase in usable wattage over the free air rating when clip mounted to metal chassis. Physical ruggedness in handling and assembly. Ideal for severe vibration and shock applications. **Resistance Range:** 0.05 ohm to 250,000 ohms. **Tolerances:** 5%, 3%, 1%, .5%, .25%, .1%, .05%. **Temperature Coefficient:** ±20 ppm/° C for 20 ohms and up; ±50 ppm/° C for 5–20 ohms; ±80 ppm/° C for less than 5 ohms. **Dielectric Strength:** 1000 volts rms from element to outer case. Type C resistors come with regular inductive winding only.

"C"

Sage No.	Rating Watts	Std. Range, Ohms		Nominal Size, Inches		Lead Dia. In.
		Regular Winding	Non Inductive	Length	Dia.	
2200C	6	20000	7000	.500	.187	.032
2250C	6	40000	14000	.812	.187	.032
2550C	11	88000	31000	1.000	.312	.040
2600C	14	114000	40000	1.219	.312	.040

PRICES FOR TYPE "C"

Range, Ohms	Net Each, Lots of					
	1-24	25-49	50-99	100-249	250-499	500-999
0.1–.99	$11.63	$7.75	$5.54	$4.26	$3.55	$3.23
1.0–10K	8.03	5.35	3.82	2.94	2.45	2.22
10.1K–75K	9.04	6.03	4.31	3.31	2.76	2.50
75.1K–114K	10.65	7.10	5.07	3.90	3.25	2.95

MIL-R-39007 RESISTORS

Failure Rates: M, P and R .01%/1000 hrs. **Resistance Tolerance:** ±1%. **Temperature Coefficient:** ±20 ppm/°C maximum for 10 ohms and higher; ±50 ppm/°C maximum for 1 ohm to 10 ohms; ±90 ppm/°C maximum for 0.1 ohm to 1 ohm.

ORDERING INFORMATION

RWR-74 S 49R9 F R

(A) (B) (C) (D) (E)

(A) = **Body style**

(B) = **Terminals**
S = Solderable
W = Weldable

(C) = **Nominal Resistance, ohms**
Three significant digits plus fourth for no. of zeroes. Below 100 Ω, R = decimal point and following digits are significant.

(D) = **Tolerance**
±1%

(E) = **Life failure rate**

MIL Style	Detail Spec. No.	Sage Style	MIL Watts @ 25° C	Available Resis. Range, Ohms	Net Each, Lots of					
					1-24	25-49	50-99	100-249	250-499	500-999
RWR80S	/8C	1009SM	2	.1–.99	$4.13	$2.75	$1.97	$1.51	$1.26	$1.15
RWR80W	/8C	1007SM	2	1.0–1.0K	4.36	2.90	2.07	1.60	1.33	1.21
				1.1K–2.67K	4.59	3.06	2.18	1.68	1.40	1.27
RWR81S	/9C	259SM	1	.1–.499	4.03	2.69	1.92	1.48	1.23	1.12
RWR81W	/9C	257SM	1	.5–.999	4.29	2.86	2.04	1.57	1.31	1.19
				1.0–1.0K	4.52	3.01	2.15	1.66	1.38	1.26
RWR89S	/11B	1249SM	3	.1–.499	4.19	2.80	2.00	1.54	1.28	1.16
RWR89W	/11B	1247SM	3	.5–.999	4.39	2.93	2.09	1.61	1.34	1.22
				1.0–1.0K	4.65	3.10	2.22	1.70	1.42	1.29
				1.1K–4.12K	4.88	3.25	2.32	1.79	1.49	1.36
RWR84S	/10B	1509SM	7	.1–.999	6.58	4.39	3.13	2.41	2.01	1.83
RWR84W	/10B	1507SM	7	1.0–1.0K	6.95	4.63	3.31	2.54	2.12	1.92
				1.1K–5.0K	7.24	4.83	3.45	2.65	2.21	2.01
				5.1K–10.0K	7.60	5.07	3.62	2.78	2.32	2.11
				10.1K–12.4K	7.93	5.29	3.78	2.90	2.42	2.20
RWR71S	/5C	1259SP	2	.1–.499	4.03	2.69	1.92	1.48	1.23	1.12
RWR71W	/5C	1257SP	2	.5–.999	3.93	2.62	1.87	1.44	1.20	1.09
				1.0–1.0K	3.37	2.25	1.61	1.24	1.03	.934
				1.1K–5.0K	3.51	2.34	1.67	1.28	1.07	.974
				5.1K–10.0K	3.67	2.45	1.75	1.34	1.12	1.01
				10.1K–16.2K	3.80	2.53	1.81	1.39	1.16	1.05
RWR74S	/6B	1509SP	5	.1–.499	4.32	2.88	2.06	1.58	1.32	1.20
RWR74W	/6B	1507SP	5	.5–.999	4.23	2.82	2.01	1.55	1.29	1.17
				1.0–1.0K	3.47	2.32	1.65	1.27	1.06	.961
				1.1K–5.0K	3.60	2.40	1.72	1.32	1.10	1.00
				5.1K–10.0K	3.73	2.49	1.78	1.37	1.14	1.04
				10.1K–12.1K	3.90	2.60	1.86	1.43	1.19	1.08
RWR78S	/7C	1709SP	10	.1–.499	4.59	3.06	2.18	1.68	1.40	1.27
RWR75W	/7C	1707SP	10	.5–.999	4.49	2.99	2.14	1.64	1.37	1.25
				1.0–1.0K	3.60	2.40	1.72	1.32	1.10	1.00
				1.1K–5.0K	3.73	2.49	1.78	1.37	1.14	1.04
				5.1K–10.0K	3.90	2.60	1.86	1.43	1.19	1.08
				10.1K–15.0K	4.03	2.69	1.92	1.48	1.23	1.12
				15.1K–20.0K	4.20	2.80	2.00	1.54	1.28	1.16
				20.1K–39.2K	4.32	2.88	2.06	1.58	1.32	1.20

SPRAGUE BLUE JACKET® AXIAL LEAD, POWER WIRE-WOUND RESISTORS

Axial design provides secure, vibration-proof mounting. Satisfies MIL specification performance requirements with 35% to 50% size reduction. Crazeproof, humidity-proof, corrosion-proof enamel coating prevents failure from electrolysis. Ceramic winding core and coating enamel withstand rapid thermal changes. Hot spot rating: 300° C rise above 40° C ambient temperature. Size, 1/8" dia. x 3/8" lg., Type 239E; 3/16" dia. x 3/8" lg., Type 240E; 13/64" dia. x 17/32" lg., Type 242E; 13/64" dia. x 15/16" lg., Type 243E; 5/16" dia. x 1 1/8" lg., Type 244E; 5/16" dia. x 1 1/4" lg., Type 247E. **Standard Tolerance:** ±5%.

TYPE 239E, 1-WATT
TYPE 240E, 2-WATT

Resistance Ohms	1-Watt 239E-	2-Watt 240E-
1	1R05	1R05
1.2	1R25	.....
1.5	1R55	1R55
1.8	1R85	.....
2	2R05	2R05
2.2	2R25	.....
2.7	2R75	.....
3	3R05	3R05
3.3	3R35	.....
3.9	3R95	.....
4	4R05	4R05
4.7	4R75	.....
5	5R05	5R05
5.6	5R65	.....
6.8	6R85	.....
7.5	7R55	7R55
8.2	8R25	.....
10	1005	1005
12	1205	1205
15	1505	1505
18	1805	1805
20	2005	2005
22	2205	2205
25	2505	2505
27	2705	2705
30	3005	3005
33	3305	3305
39	3905	3905
40	4005	4005
47	4705	4705
50	5005	5005
56	5605	5605
68	6805	6805
75	7505	7505
82	8205	8205
100	1015	1015
120	1215	1215
150	1515	1515
180	1815	1815
200	2015	2015
220	2215	2215
250	2515	2515
270	2715	2715
300	3015	3015
330	3315	3315
390	3915	3915
400	4015	4015
470	4715	4715
500	5015	5015
560	5615	5615
600	6015	6016
680	6815	6815
700	7015	7015
800	8015	8015
820	8215	8215
900	9015	9015
1000	1025	1025
1200	1225	1225
1400	1425	1425
1500	1525	1525
1800	1825	1825
2000	2025	2025
2200	2225	2225
2500	2525	2525
2700	.....	2725
3000	.....	3025
3300	.....	3325
3500	.....	3525
3900	.....	3925

TYPE 242E, 3-WATT
TYPE 243E, 5-WATT

Resistance Ohms	3-Watt 242E-	5-Watt 243E-
1	1R05	1R05
1.5	1R55	1R55
2	2R05	2R05
3	3R05	3R05
4	4R05	4R05
5	5R05	5R05
7.5	7R55	7R55
10	1005	1005
12	1205	1205
15	1505	1505
18	1805	.....
22	2205	.....
27	2705	.....
33	3305	.....
39	3905	.....
40	4005	4005
47	4705	.....
50	5005	5005
56	5605	.....
68	6805	.....
82	8205	.....
100	1015	1015
120	1215	1215
150	1515	1515
180	1815	.....
220	2215	2215
270	2715	.....
330	3315	.....
390	3915	.....
400	4015	4015
470	4715	.....
500	5015	5015
560	5615	.....
680	6815	.....
700	7015	7015
750	.....	7515
800	8015	8015
820	8215	.....
900	9015	9015
1000	1025	1025
1200	1225	1225
1400	1425	1425
1500	1525	1525
1800	1825	1825
2000	2025	2025
2200	2225	2225
2500	2525	2525
2700	2725	.....
3000	3025	3025
3300	3325	.....
3500	.....	3525
3900	3925	.....
4000	4025	4025
4500	.....	4525
4700	4725	.....
5000	5025	5025
5600	5625	.....
6000	6025	6025
6800	6825	.....
7000	.....	7025
7500	7525	7525
8000	8025	8025
8200	8225	.....
9000	9025	9025
10,000	1035	1035
12,000	.....	1235
14,000	.....	1435
15,000	.....	1535
18,000	.....	1835
20,000	.....	2035
22,000	.....	2235
25,000	.....	2535
30,000	.....	3035

TYPE 244E, 7-WATT
TYPE 247E, 10-WATT

Resistance Ohms	7-Watt 244E-	10-Watt 247E-
1	1R05	1R05
1.5	1R55	1R55
2	2R05	2R05
3	3R05	3R05
4	4R05	4R05
5	5R05	5R05
7.5	7R55	7R55
10	1005	1005
12	1205	1205
15	1505	1505
20	2005	2005
25	2505	2505
30	3005	3005
35	3505	3505
40	4005	4005
50	5005	5005
75	7505	7505
100	1015	1015
120	1215	1215
150	1515	1515
200	2015	2015
220	2215	2215
250	2515	2515
300	3015	3015
350	3515	3515
400	4015	4015
500	5015	5015
600	6015	6015
700	7015	7015
750	7515	7515
800	8015	8015
900	9015	9015
1000	1025	1025
1100	1125	1125
1200	1225	1225
1400	1425	1425
1500	1525	1525
1800	1825	1825
2000	2025	2025
2200	2225	2225
2500	2525	2525
3000	3025	3025
3300	3325	3325
3500	3525	3525
3900	3925	3925
4000	4025	4025
4500	4525	4525
5000	5025	5025
6000	6025	6025
7000	7025	7025
7500	7525	7525
8000	8025	8025
9000	9025	9025
10,000	1035	1035
11,000	1135	1135
12,000	1235	1235
14,000	1435	1435
15,000	1535	1535
16,000	1635	1635
17,000	1735	.....
18,000	1835	1835
20,000	2035	2035
22,000	2235	2235
25,000	2535	2535
30,000	3035	3035
35,000	3535	3535
40,000	4035	4035
45,000	.....	4535
50,000	.....	5035
55,000	.....	5535

INDUSTRIAL NET PRICES

Sprague Type	Values, Ohms	Std. (Sect.) Pkgs.*	Net Each, Lots of* 1-9	10-49	50-99	100-249	250-499	500-Up
239E 1-Watt	1–8.2	50	$1.00	$0.85	$0.70	$0.60	$0.50	$0.45
	10–1000	(10)	.89	.76	.62	.53	.45	.40
	1200–2500		.91	.77	.56	.55	.46	.41
240E 2-Watt	1–7.5	50	.95	.81	.67	.57	.48	.43
	10–1000	(10)	.84	.71	.59	.50	.42	.38
	1200–3900		.89	.76	.62	.53	.45	.40
242E 3-Watt	1–7.5	25	.89	.76	.62	.53	.45	.40
	10–1000	(5)	.78	.66	.55	.47	.39	.35
	1100–5000		.84	.71	.59	.50	.42	.38
	5600–10K		.86	.73	.60	.52	.43	.39
243E 5-Watt	1–7.5	25	.95	.81	.67	.57	.48	.43
	10–1000	(5)	.84	.71	.59	.50	.42	.38
	1100–5K		.86	.73	.60	.52	.43	.39
	6K–10K		.95	.81	.67	.57	.48	.43
	12K–20K		1.03	.86	.72	.62	.52	.46
	22K–30K		1.20	1.02	.84	.72	.60	.54

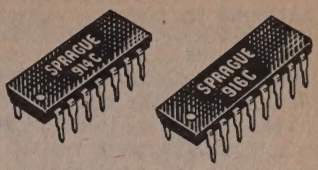
Sprague Type	Values, Ohms	Std. (Sect.) Pkgs.*	Net Each, Lots of* 1-9	10-49	50-99	100-249	250-499	500-Up
244E 7-Watt	1–7.5	20	$0.95	$0.81	$0.67	$0.57	$0.48	$0.43
	10–1000	(5)	.84	.71	.59	.50	.42	.38
	1100–5K		.86	.73	.60	.52	.43	.39
	6K–10K		.95	.81	.67	.57	.48	.43
	11K–20K		1.03	.86	.72	.62	.52	.46
	22K–40K		1.20	1.02	.84	.72	.60	.54
247E 10-Watt	1–7.5	20	1.03	.86	.72	.62	.52	.46
	10–1000	(5)	.89	.76	.62	.53	.45	.40
	1100–5K		1.00	.85	.70	.60	.50	.45
	6K–10K		1.14	.97	.80	.68	.57	.51
	11K–20K		1.25	1.06	.88	.75	.63	.56
	22K–40K		1.31	1.11	.92	.79	.66	.59
	45K–55K		1.45	1.23	1.02	.87	.76	.65

*Order in **Standard** or **Section** packages or **multiples.**

SPRAGUE Metanet® Precision Resistor Networks

TYPE 914C, 916C DUAL-INLINE PACKAGE RESISTOR NETWORKS

Designed for use in signal and data processing applications where repetitive resistance values and patterns are required. Come in dual-in-line packages compatible with IC's and include up to 28 metal-film resistors on single ceramic base. **Tolerance:** ±5%. **Operating Temperature Range:** −55° C to +70° C. **Temperature Coefficient:** Within 350 ppm/° C typical. **Tracking Between Resistors:** ±50 ppm/° C. **Continuous Power Dissipation:** 914C, 3 watts; 916C, 3.5 watts; both at 25° C. Derating is linear to 150° C.



PULL-UP/PULL-DOWN INTERFACE NETWORKS

Prices shown are for 14-pin networks. **For 16-pin networks,** add to prices shown: **$0.09** for 1–99; **$0.07** for 100–499; **$0.06** for 500–999; and **$0.05** for 1000–9999.

R Ohms	Fig.	Sprague Number 14-Pin	Sprague Number 16-Pin	Net Each, Lots of 1-99	100-499	500-999	1000-4999
200	1	914C201X5PD	916C201X5PD	$1.21	$0.97	$0.83	$0.69
500	1	914C501X5PD	916C501X5PD	1.21	.97	.83	.69
1000	1	914C102X5PD	916C102X5PD	1.21	.97	.83	.69
2000	1	914C202X5PD	916C202X5PD	1.21	.97	.83	.69
3000	1	914C302X5PD	916C302X5PD	1.21	.97	.83	.69
4000	1	914C402X5PD	916C402X5PD	1.21	.97	.83	.69
5000	1	914C502X5PD	916C502X5PD	1.21	.97	.83	.69
68	2	914C680X5PE	916C680X5PE	1.24	.99	.85	.71
100	2	914C101X5PE	916C101X5PE	1.24	.99	.85	.71
150	2	914C151X5PE	916C151X5PE	1.24	.99	.85	.71
200	2	914C201X5PE	916C201X5PE	1.24	.99	.85	.71
220	2	914C221X5PE	916C221X5PE	1.24	.99	.85	.71
330	2	914C331X5PE	916C331X5PE	1.24	.99	.85	.71
470	2	914C471X5PE	916C471X5PE	1.24	.99	.85	.71
500	2	914C501X5PE	916C501X5PE	1.24	.99	.85	.71
680	2	914C681X5PE	916C681X5PE	1.24	.99	.85	.71
1000	2	914C102X5PE	916C102X5PE	1.24	.99	.85	.71
1500	2	914C152X5PE	916C152X5PE	1.24	.99	.85	.71
2000	2	914C202X5PE	916C202X5PE	1.24	.99	.85	.71
2200	2	914C222X5PE	916C222X5PE	1.24	.99	.85	.71
3300	2	914C332X5PE	916C332X5PE	1.24	.99	.85	.71
4700	2	914C472X5PE	916C472X5PE	1.24	.99	.85	.71
5600	2	914C562X5PE	916C562X5PE	1.24	.99	.85	.71
6000	2	914C602X5PE	916C602X5PE	1.24	.99	.85	.71
6800	2	914C682X5PE	916C682X5PE	1.24	.99	.85	.71
10000	2	914C103X5PE	916C103X5PE	1.24	.99	.85	.71
15000	2	914C153X5PE	916C153X5PE	1.24	.99	.85	.71
22000	2	914C223X5PE	916C223X5PE	1.24	.99	.85	.71

INDIVIDUAL TERMINATING NETWORKS

Prices shown are for 14-pin networks. **For 16-pin networks,** add to prices shown: **$0.07** for 1–99; **$0.05** for 100–499; **$0.04** for 500–999; and **$0.03** for 1000–9999.

50	3	914C500X5LT	916C500X5LT	$1.21	$0.97	$0.83	$0.69
100	3	914C101X5LT	916C101X5LT	1.21	.97	.83	.69
200	3	914C201X5LT	916C201X5LT	1.21	.97	.83	.69
500	3	914C501X5LT	916C501X5LT	1.21	.97	.83	.69
50	4	914C500X5LU	916C500X5LU	1.24	.99	.85	.71
68	4	914C680X5LU	916C680X5LU	1.24	.99	.85	.71
100	4	914C101X5LU	916C101X5LU	1.24	.99	.85	.71
200	4	914C201X5LU	916C201X5LU	1.24	.99	.85	.71
220	4	914C221X5LU	916C221X5LU	1.24	.99	.85	.71
330	4	914C331X5LU	916C331X5LU	1.24	.99	.85	.71
470	4	914C471X5LU	916C471X5LU	1.24	.99	.85	.71
500	4	914C501X5LU	916C501X5LU	1.24	.99	.85	.71

MULTIPLE ISOLATED RESISTORS

Prices shown are for 14-pin package. **For 16-pin package,** add to prices shown: **$0.04** for 1–99; **$0.04** for 100–499; **$0.02** for 500–999; and **$0.02** for 1000–9999.

50	5	914C500X5SR	916C500X5SR	$1.17	$0.94	$0.80	$0.67
62	5	914C620X5SR	916C620X5SR	1.17	.94	.80	.67
68	5	914C680X5SR	916C680X5SR	1.17	.94	.80	.67
100	5	914C101X5SR	916C101X5SR	1.17	.94	.80	.67
150	5	914C151X5SR	916C151X5SR	1.17	.94	.80	.67
200	5	914C201X5SR	916C201X5SR	1.17	.94	.80	.67
220	5	914C221X5SR	916C221X5SR	1.17	.94	.80	.67
330	5	914C331X5SR	916C331X5SR	1.17	.94	.80	.67
470	5	914C471X5SR	916C471X5SR	1.17	.94	.80	.67
500	5	914C501X5SR	916C501X5SR	1.17	.94	.80	.67
680	5	914C681X5SR	916C681X5SR	1.17	.94	.80	.67
1000	5	914C102X5SR	916C102X5SR	1.17	.94	.80	.67
1500	5	914C152X5SR	916C152X5SR	1.17	.94	.80	.67
2000	5	914C202X5SR	916C202X5SR	1.17	.94	.80	.67
2200	5	914C222X5SR	916C222X5SR	1.17	.94	.80	.67
3300	5	914C332X5SR	916C332X5SR	1.17	.94	.80	.67
4700	5	914C472X5SR	916C472X5SR	1.17	.94	.80	.67
6800	5	914C682X5SR	916C682X5SR	1.17	.94	.80	.67
10000	5	914C103X5SR	916C103X5SR	1.17	.94	.80	.67
15000	5	914C153X5SR	916C153X5SR	1.17	.94	.80	.67
22000	5	914C223X5SR	916C223X5SR	1.17	.94	.80	.67

DUAL TERMINATING NETWORKS

Prices shown are for 14-pin networks. **For 16-pin networks,** add to prices shown: **$0.10** for 1–99; **$0.08** for 100–499. **$0.06** for 500–999; and **$0.05** for 1000–9999.

Ohms R_1	Ohms R_2	Fig.	Sprague Number 14-Pin	Sprague Number 16-Pin	Net Each, Lots of 1-99	100-499	500-999	1000-4999
50	200	6	914C400X5TR	916C400X5TR	$2.17	$1.74	$1.49	$1.24
90	660	6	914C800X5TR	916C800X5TR	2.17	1.74	1.49	1.24
220	330	6	914C131X5TR	916C131X5TR	2.17	1.74	1.49	1.24
250	375	6	914C151X5TR	916C151X5TR	2.17	1.74	1.49	1.24
330	470	6	914C191X5TR	916C191X5TR	2.17	1.74	1.49	1.24
330	390	6	914C181X5TR	916C181X5TR	2.17	1.74	1.49	1.24
390	500	6	914C221X5TR	916C221X5TR	2.17	1.74	1.49	1.24
330	680	6	914C221X5TRA	916C221X5TRA	2.17	1.74	1.49	1.24

FIG. 1

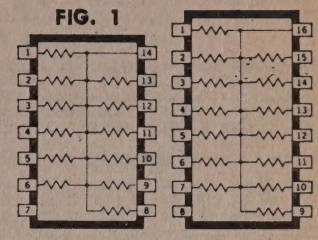


FIG. 2

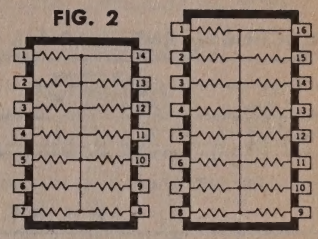


FIG. 3

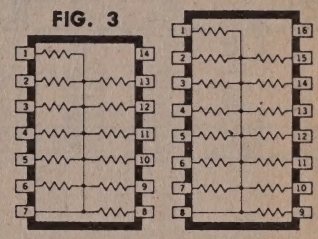


FIG. 4

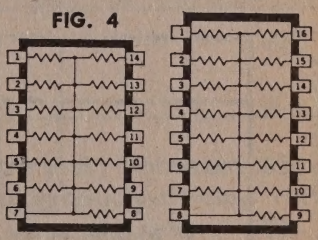


FIG. 5

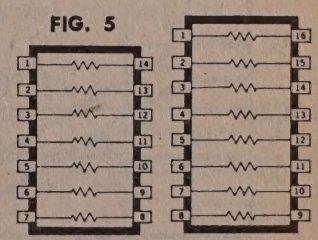
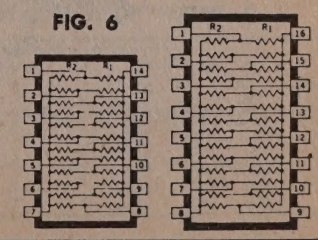
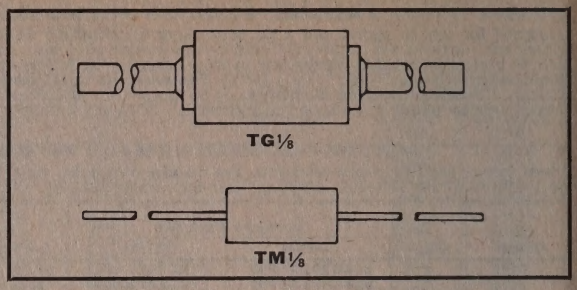


FIG. 6



SENSISTOR® SOLID STATE TEMPERATURE SENSING SILICON RESISTORS

- DESIGNED TO MEET OR EXCEED ALL ELECTRICAL REQUIREMENTS OF MIL-T-23648 FOR POSITIVE-TC THERMISTORS
- TG⅛ ELECTRICALLY EQUIVALENT TO RTH42
- TM⅛ ELECTRICALLY EQUIVALENT TO RTH22
- AVERAGE POSITIVE TC OF +0.7%/°C (+7,000 ppm)
- RTH22 MIL-APPROVED TYPE
- RTH42 MIL-APPROVED TYPE



MECHANICAL DATA

TG⅛ resistor encapsulated in hard-glass hermetically sealed package (0.105″ dia. x 0.300″ l.) with welded unborated solder-coated dumet leads. TM⅛ (0.155″ dia. x 0.420″ l.) resistor encapsulated in molded package with solder-coated copper leads. A-nickel leads or gold plated A-nickel leads are also available upon request.

MAXIMUM RATINGS

Power Dissipation at Ambient Temperature: TG⅛ 300 mW at or below 25° C, 125 mW at 100° C (see Figure 1). TM⅛ 125 mW at or below 100° C (see Figure 2). Operating Ambient Temperature Range: −55° C to +125° C. Storage Temperature Range: −65° C to +150° C.

ELECTRICAL AND THERMAL CHARACTERISTICS

TI Type	Zero-Power Resistance Ratio $R_{25°C}/R_{125°C}$	Thermal Time Constant	
		Typical	Maximum
TG⅛	0.55 ±15%	35 s	60 s
TM⅛	0.55 ±15%	35 s	40 s

Factors for determining nominal resistance at various temperatures.

TYPE TG⅛

Temp. °C	Nominal Resistance at 25° C, Ohms					
	10-68	82-150	180-470	560-1.2K	1.5K-5.6K	6.8K-10K
−55	0.615	0.582	0.560	0.550	0.515	0.510
−15	0.790	0.770	0.755	0.740	0.730	0.730
0	0.863	0.847	0.838	0.835	0.825	0.825
25	1.000	1.000	1.000	1.000	1.000	1.000
50	1.160	1.170	1.180	1.200	1.230	1.190
75	1.350	1.370	1.400	1.420	1.450	1.400
100	1.545	1.584	1.623	1.656	1.670	1.610
125	1.750	1.800	1.860	1.920	1.960	1.830

±5% AND ±10% STANDARD TOLERANCE VALUES

Standard zero-power resistance values (ohms) at 25° C T_A.

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
10	33	82	270	680	2.2K	5.6K	18K*
12	39	100	330	820	2.7K	6.8K	22K*
15	47	120	390	1000	3.3K	8.2K	27K*
18	50	150	470	1200	3.9K	10K	33K*
22	56	180	500	1500	4.7K	12K*	39K*
27	68	220	560	1800	5.0K	15K*	

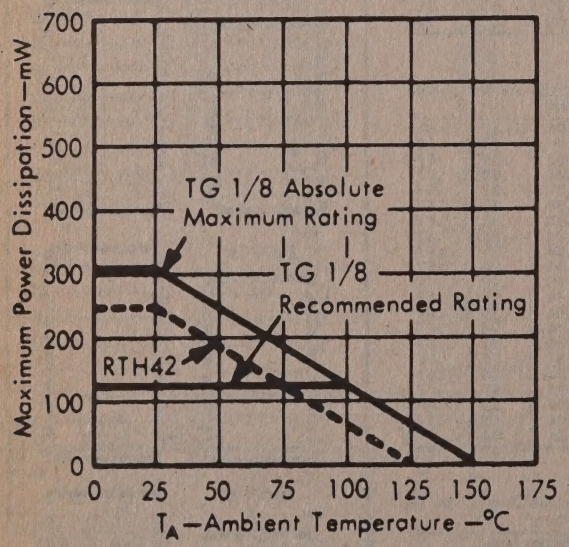
*TM⅛ only.

TYPE TM⅛

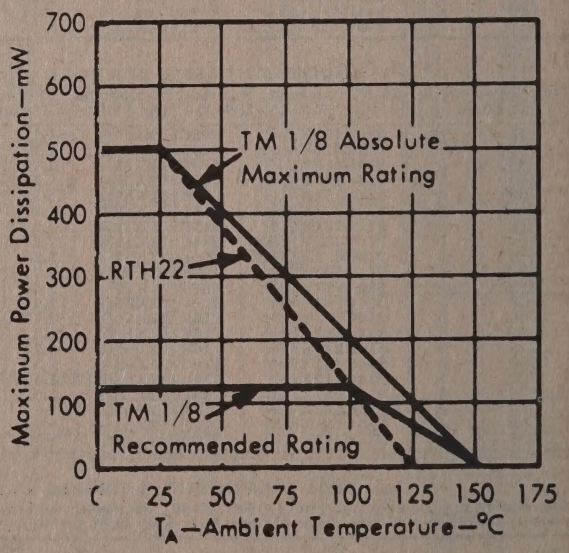
Temp. °C	Nominal Resistance at 25° C, Ohms					
	10-68	82-150	180-560	680-1.5K	1.8K-12K	15K-39K
−55	0.615	0.582	0.560	0.550	0.515	0.481
−15	0.790	0.770	0.755	0.740	0.730	0.712
0	0.863	0.847	0.838	0.835	0.825	0.814
25	1.000	1.000	1.000	1.000	1.000	1.000
50	1.160	1.170	1.180	1.200	1.230	1.210
75	1.350	1.370	1.400	1.420	1.450	1.430
100	1.545	1.584	1.623	1.656	1.670	1.670
125	1.750	1.800	1.860	1.920	1.960	1.900

DISSIPATION DERATING CURVES

TG⅛

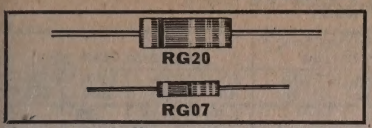


TM⅛



PRICES AVAILABLE ON REQUEST

PRECISION AND SEMI-PRECISION METAL GLAZE RESISTORS



Unique thick-film resistance element of metallic alloys fused to crystalline ceramic core for excellent combination of economy, stability, and precision. RG⅛, RG¼, RG2 meet or exceed all MIL-R-11 requirements; RG07, RG20, RG32 and RG42 meet or exceed MIL-R-22684 and MIL-R-39017 requirements: TO-55, TO-60, TO-65, T2-55, T2-60 and T2-65 meet or exceed MIL-R-10509F requirements, Char. D; RGR established reliability resistors meet or exceed MIL-R-39017A, established reliability specifications. IRC Metal Glaze is up to 100 times thicker than conventional films for mechanical and electric ruggedness. **Type RG1/8:** MIL style RC05 Rated ⅛ W at 70° C ambient; 200 V max. continuous. Temperature coefficient: 500 ppm/° C max. Size: .150″ lg. x .063″ dia. **Type RG1/4:** MIL style RC07. Rated ¼ W at 70° C ambient, ½ W at 70° C commercial; 250 V max. continuous. Temp. coefficient: 400 ppm/° C max. Size: .25″ lg. x .090″ dia. **Type RG2:** MIL style RC42. Rated 2 W at 70° C ambient; 500 V max. cont. Temp. coefficient: 250 ppm/° C max. Size: .688″ lg. x .318″ dia. **Type RG07:** MIL style RL07. Rated ¼ W at 70° C ambient; 250 V max. continuous. Size: .250″ lg. x .090″ dia. **Type RG20:** MIL style RL20. Rated ½ W at 70° C ambient; 350 V max. continuous. Size: .390″ lg. x .140″ dia. **Type RG32:** MIL style RL32. Rated 1 W at 70° C ambient; 500 V max. continuous. Size: .562″ lg. x .190″ dia. **Type RG42:** MIL style RL42. Rated 2 W at 70° C ambient; 500 V max. continuous. Size: .688″ lg. x .318″ dia. **Type TO-55:** MIL style RN55D. Rated ¼ W at 70° C ambient; 250 V max. continuous. Temperature coefficient: 100 ppm/° C max. Size: .250″ lg. x .090″ dia. **Type TO-60:** MIL style RN60D. Rated ½ W at 70° C ambient; 350 V max. continuous. Temperature coefficient: 100 ppm/° C max. Size: .390″ lg. x .140″ dia. **Type TO-65:** MIL style RN65D. Rated 1 W at 70° C ambient; 350 V max. continuous. Temperature coefficient: 100 ppm/° C max. Size: .562″ lg. x .190″ dia. **Type T2-55:** MIL style RN55C. Rated ¼ W at 70° C ambient; 250 V max. continuous. Temperature coefficient: 50 ppm/° C max. Size: .250″ lg. x .090″ dia. **Type T2-60:** MIL style RN60C. Rated ½ W at 70° C ambient; 350 V max. continuous. Temperature coefficient: 50 ppm/° C ambient. Size: .390″ lg. x .140″ dia. **Type T2-65:** MIL style RN65C. Rated 1 W at 70° C ambient; 350 V max. continuous. Temperature coefficient: 50 ppm/° C ambient. Size: .562″ lg. x .190″ dia. **Type RGR07:** MIL style RLR07. Rated ¼ W at 70° C ambient; 250 V max. continuous. **Type RGR20:** MIL style RLR20. Rated ½ W at 70° C ambient; 350 V max. continuous. **Type RGR32:** MIL style RLR32. Rated 1 W at 70° C ambient; 500 V max. continuous. **Type RGR42:** MIL style RLR42. Rated 2 W at 70° C ambient; 500 V max. continuous.

Temperature coefficient for all MIL-R-22684 and MIL-R-39017 types is 200 ppm/° C max.

TYPE RG INDUSTRIAL NET PRICES

TRW Type	MIL Type	Tol.	Resistance Range, Ohms	Net Each, Lots of 50-99	100-249	250-499	500-999	1000-4999	5000 Up
RG-⅛	RC05	±5%	10–100K	$0.21	$0.17	$0.14	$0.128	$ 0.11	$0.096
RG-¼	RC07	±5%	6.2–680K	.16	.11	.08	.06	.044	.038
RG-2	RC42	±5%	10–1.5 meg	.25	.21	.18	.143	.086	.081
RG07	RL07	±2%	10–510K	.23	.19	.16	.125	.085	.075
RG20	RL20	±2%	4.3–1 meg	.23	.19	.16	.125	.085	.075
RG32	RL32	±2%	10–1 meg	.35	.30	.19	.13	.10	.095
RG42	RL42	±2%	10–1.5 meg	.35	.30	.23	.19	.147	.126

TYPE TO AND T2 INDUSTRIAL NET PRICES

MIL Type	TRW Type	Tol.	Resistance Range, Ohms	Net Each, Lots of 25-99	100-249	250-499	500-999	1000-4999	5000 Up
RN55D	TO-55	±1%	10–499K	$0.75	$0.25	$0.15	$0.135	$0.115	$0.105
RN60D	TO-60	±1%	10–1 meg	.75	.25	.15	.135	.115	.105
RN65D	TO-65	±1%	10–1 meg	.75	.27	.16	.145	.125	.115
RN55C	T2-55	±1%	10–301K	1.00	.35	.18	.16	.14	.12
RN60C	T2-60	±1%	10–499K	1.00	.35	.18	.16	.14	.12
RN65C	T2-65	±1%	10–499K	1.00	.38	.19	.17	.145	.125

TYPE RGR MIL-R-39017 INDUSTRIAL NET PRICES

TRW Type	Tol.	Resistance Range, Ohms	Net Each, Lots of 50-99	100-249	250-499	500-999	1000-4999	5000 Up
RGR07	±2%	10–150	$0.50	$0.37	$0.24	$0.20	$0.175	$0.165
(RLR07)		160–150K	.45	.32	.19	.165	.16	.15
RGR20	±2%	10–150	.50	.37	.24	.20	.175	.165
(RLR20)		160–1 meg	.455	.32	.19	.165	.16	.15
RGR32	±2%	10–150	1.05	.75	.52	.33	.31	.28
(RLR32)		160–1 meg	.86	.60	.42	.268	.247	.227
RGR42	±2%	10–150	1.80	1.25	1.05	.65	.55	.49
(RLR42)		160–1 meg	1.45	1.02	.85	.57	.44	.39

MILITARY VALUE CHART

Std. military values in one decade. For other decades multiply by 0.1, 10, 100, etc.

1.00*	1.21*	1.47*	1.78*	2.15*	2.61*	3.16*	3.83*	4.64*	5.62*	6.81*	8.25*
1.02	1.24	1.50	1.82	2.21	2.67	3.24	3.92	4.75	5.76	6.98	8.45
1.05	1.27	1.54	1.87	2.26	2.74	3.32	4.02	4.87	5.90	7.15	8.66
1.07	1.30	1.58	1.91	2.32	2.80	3.40	4.12	4.99	6.04	7.32	8.87
1.10*	1.33*	1.62*	1.96*	2.37*	2.87*	3.48*	4.22*	5.11*	6.19*	7.50*	9.09*
1.13	1.37	1.65	2.00	2.43	2.94	3.57	4.32	5.23	6.34	7.68	9.31
1.15	1.40	1.69	2.05	2.49	3.01	3.65	4.42	5.36	6.49	7.87	9.53
1.18	1.43	1.74	2.10	2.55	3.09	3.74	4.53	5.49	6.65	8.06	9.76

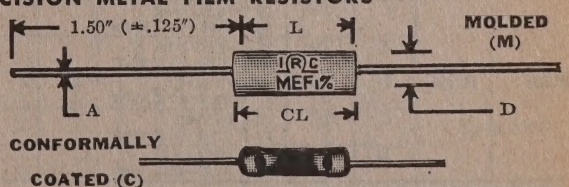
*Preferred values.

TRW/IRC MAKES A RESISTOR FOR EVERY REPLACEMENT REQUIREMENT. FOR OTHER TRW/IRC PRODUCTS CONSULT THE CATALOG INDEX. FOR LONG LIFE AND ASSURED QUALITY, ALWAYS ASK FOR TRW/IRC.

LOW NOISE, HIGH STABILITY PRECISION METAL FILM RESISTORS

FILM TYPE AND TOLERANCES

Film Type designates Evaporated Metal Film resistors. Glaze Type designates Metal Glaze. Metal Film, resistors are supplied in standard tolerances of ±1.0%, ±0.5%, ±0.25% and ±0.1%. Closer tolerances are available on special order. Metal Glaze resistors are supplied in ±1.0% tolerance only.



TRW Type	MIL Type	MIL Char.	TRW T.C. Code	Resistance Range, Ohms	Watts at 70° C TRW	Watts at 70° C MIL	Watts at 125° C TRW	Watts at 125° C MIL	Volts MIL Max.	Dimensions, Inches Lg. L	Dia. D	Net Each, Lots of 25-49	50-99	100-249	250-499*
MMC#†	RN50	D	T0	10–100 102–49.9K 51.1K–100K	½	⅛	¼	1/20	200	.172	.075	$1.50 1.00 1.50	$0.63 .63 .63	$0.54 .49 .54	$0.48 .43 .48
		C	T2	49.9–100 102–49.9K 51.1K–100K								1.50 1.00 1.50	.70 .60 .70	.60 .51 .60	.53 .45 .53

LISTING CONTINUED ON FOLLOWING PAGE

PRECISION METAL FILM RESISTORS (CONTINUED)

TRW Type	MIL Type	MIL Char.	TRW T.C. Code	Resistance Range, Ohms	Watts at 70° C TRW	Watts at 70° C MIL	Watts at 125° C TRW	Watts at 125° C MIL	Volts MIL Max.	Dimensions, Inches Lg. L	Dimensions, Inches Dia. D	Net Each, Lots of 25-49	50-99	100-249	250-499*
MMC#†	RN50	E	T9	49.9–100K								1.50	1.15	.99	.86
T_55	RN55	D	T0	10–499K	½	⅛	¼	1/10	200	.265	.090	.75	.75	.25	.15
		C	T2	10–301K								1.00	1.00	.35	.18
CEA#†	RN55	D	T0	10–150	½	⅛	¼	1/10	200	.281	.100	1.50	.51	.37	.19
				154–499K								1.00	.50	.31	.14
				511K–1 meg								1.50	.51	.36	.19
				1.02 meg–2.21 meg								1.50	.51	.27	.24
		C	T2	30.1–150								1.50	.51	.26	.23
				154–100K								1.00	.50	.24	.18
				102K–1 meg								1.50	.51	.26	.23
				1.02 meg–2.21 meg								1.50	.51	.33	.29
		E	T9	30.1–150								2.50	.60	.51	.45
				154–100K								2.00	.51	.44	.39
				102K–1 meg								2.50	.60	.51	.45
				1.02 meg–2.21 meg								2.00	.72	.61	.54
T_60	RN60	D	T0	10–1 meg	¾	¼	⅜	⅛	250	.400	.140	.75	.75	.25	.15
		C	T2	10–499K								1.00	1.00	.35	.18
CCA#†	RN60	D	T0	10–150	½	¼	¼	⅛	250	.431	.160	1.50	.51	.24	.21
				154–301K								1.00	.50	.22	.15
				309K–1.5 meg								1.50	.51	.24	.21
				1.54 meg–4.53 meg								1.50	.51	.30	.26
		C	T2	30.1–150								1.50	.51	.29	.25
				154–100K								1.00	.50	.23	.20
				102K–1.5 meg								1.50	.51	.30	.26
				1.54 meg–4.53 meg								1.50	.51	.36	.31
		E	T9	49.9–150								2.50	.72	.61	.54
				154–100K								2.00	.63	.54	.48
				102K–1.5 meg								2.50	.72	.61	.53
				1.54 meg–4.53 meg								2.50	.80	.69	.60
T_65	RN65	D	T0	10–1 meg	1	½	½	¼	300	.593	.198	.75	.75	.27	.16
		C	T2	10–499K								1.00	1.00	.38	.19
CCB#†	RN65	D	T0	10–200	¾	½	½	¼	350	.625	.200	1.50	.51	.30	.26
				205–499K								1.00	.50	.27	.18
				511K–1.5 meg								1.50	.51	.30	.26
				1.54 meg–8.45 meg								1.50	.51	.39	.34
		C	T2	30.1–200								1.50	.51	.33	.29
				205–169K								1.00	.50	.26	.23
				174K–1.5 meg								1.50	.51	.33	.29
				1.54 meg–8.45 meg								2.00	.51	.41	.36
		E	T9	30.1–200								2.50	.88	.76	.66
				205–169K								2.00	.80	.69	.60
				174K–1.5 meg								2.50	.88	.76	.66
				1.54 meg–8.45 meg								2.50	1.02	.87	.76
MEC†	RN70	D	T0	10–200	1½	¾	¾	½	350	.739	.281	1.50	.51	.49	.43
				205–499K								1.00	.50	.33	.29
				511K–1.5 meg								1.50	.51	.49	.43
				1.54 meg–8.45 meg								1.50	.71	.61	.54
		C	T2	30.1–200								1.50	.60	.51	.45
				205–169K								1.00	.51	.41	.36
				174K–1.5 meg								1.50	.60	.51	.45
				1.54 meg–8.45 meg								1.00	.77	.66	.58
		E	T9	30.1–200								2.50	1.40	1.20	1.05
				205–169K								2.00	1.28	1.10	.96
				174K–1.5 meg								2.50	1.40	1.20	1.05
				1.54 meg–8.45 meg								2.50	1.60	1.37	1.20
CEC#†	.....	.....	T0	10–200	1	.....	½	.....	350	.625	.200	1.50	.51	.33	.29
				205–499K								1.00	.50	.23	.20
				511K–1.5 meg								1.50	.51	.33	.29
				1.54 meg–8.45 meg								1.50	.51	.43	.38
			T2	30.1–200								1.50	.51	.36	.31
				205–169K								1.00	.50	.29	.25
				174K–1.5 meg								1.50	.51	.36	.31
				1.54 meg–8.45 meg								1.50	.53	.51	.40
			T9	30.1–200								2.50	.97	.83	.73
				205–169K								2.00	.88	.76	.66
				174K–1.5 meg								2.50	.97	.83	.73
				1.54 meg–8.45 meg								2.50	1.12	.96	.84
MEF†	RN75	D	T0	49.9–3.92 meg	.....	.....	1	1	500	1.125	.415	2.00	1.33	1.14	1.00
				4.02 meg–18.2 meg								2.50	1.62	1.39	1.21
		C	T2	49.9–3.92 meg								2.00	1.48	1.27	1.11
				4.02 meg–18.2 meg								2.50	1.78	1.53	1.34
		E	T9	49.9–3.92 meg								3.50	3.17	2.71	2.38
				4.02 meg–18.2 meg								4.00	3.48	2.99	2.61
MEH†	RN80	D	T0	100–10 meg	2	2	.....	.....	750	2.274	.415	2.50	2.23	1.91	1.68
				10.2 meg–45.3 meg								3.00	2.68	2.30	2.01
		C	T2	100–10 meg								3.00	2.53	2.17	1 90
				10.2 meg–45.3 meg								3.50	3.05	2.61	2.29
		E	T9	100–10 meg								6.00	5.07	4.34	3.80
				10.2 meg–45.3 meg								7.00	6.08	5.21	4.56

#Body type C; all others M. †Metal film type; all others metal glaze.

FREQUENCY RESPONSE

TRW/IRC Metal Film resistors demonstrate high frequency response which is essentially flat to 5 MHz. Non-helixed units are available for applications employing higher frequencies, on special order.

LOAD STABILITY

The ΔR due to operation at rated load for 1000 hours is typically less than ±0.1%. Special pre-conditioning (Burn-In, Temperature Cycling, etc.) is available to meet customer specifications.

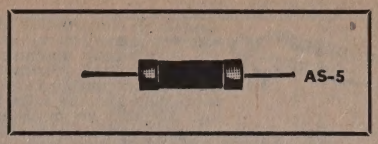
TEMPERATURE COEFFICIENTS

High stability Metal Film resistors are available in the following temperature coefficients.

MIL-R-10509 Char.	TRW TC Code	Temperature Coefficient†	Temperature Span
D*	T0	0 ± 100 ppm/° C	−55° C to +165° C
C*	T2	0 ± 50 ppm/° C	−55° C to +175° C
E*	T9	0 ± 25 ppm/° C	−55° C to +175° C

TYPE AS PRO-COAT™ PRECISION WIRE-WOUND POWER RESISTORS

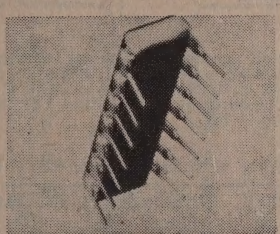
IRC Type	Resistance Range, Ohms	Net Each, Lots of 1-99	100-499	500-999	1000 Up
AS-½	0.5–0.99	$0.85	$0.60	$0.47	$0.44
	1.0–1000	.62	.44	.35	.34
	1001–5K	.66	.46	.39	.37
	5001–6K	.68	.47	.42	.40
AS-1	0.1–0.99	.89	.65	.50	.48
	1.0–1000	.61	.43	.34	.33
	1001–5K	.65	.45	.38	.36
	5001–7.5K	.67	.46	.41	.39
AS-2	0.1–0.99	.87	.64	.52	.50
	1.0–1000	.60	.43	.35	.34
	1001–5K	.64	.44	.40	.39
	5001–10K	.66	.45	.42	.40
	10,000–15K	.70	.48	.43	.42
	15,001–20K	.75	.52	.47	.46
AS-3	0.1–0.99	.89	.65	.50	.49
	1.0–1000	.61	.43	.34	.33
	1001–5K	.65	.45	.38	.37
	5001–10K	.67	.46	.41	.40
	10,001–15K	.71	.49	.42	.41
	15,001–20K	.76	.53	.46	.45
	20,001–30K	.78	.54	.47	.46
AS-5	0.1–0.99	.92	.64	.49	.48
	1.0–1000	.62	.43	.34	.33
	1001–5K	.68	.46	.38	.37
	5001–10K	.69	.47	.42	.40
	10,001–15K	.72	.50	.43	.41
	15,001–20K	.77	.54	.47	.46
	20,001–40K	.79	.55	.48	.47
	40,001–55K	.85	.59	.52	.51
	55,001–60K	.94	.66	.58	.57
AS-7	0.1–0.99	.96	.65	.55	.50
	1.0–1000	.63	.44	.38	.37
	1001–5K	.68	.47	.42	.41
	5001–10K	.70	.48	.43	.42
	10,001–15K	.73	.51	.44	.43
	15,001–20K	.78	.55	.48	.47
	20,001–40K	.80	.56	.49	.48
	40,001–55K	.86	.60	.53	.52
	55,001–75K	.95	.67	.59	.58
	75,001–90K	1.03	.72	.65	.63
AS-10	0.1–0.99	1.06	.73	.57	.56
	1.0–1000	.65	.46	.39	.38
	1001–5K	.69	.49	.42	.41
	5001–10K	.71	.50	.44	.42
	10,001–15K	.75	.53	.45	.43
	15,001–20K	.80	.57	.49	.48
	20,001–40K	.82	.58	.50	.49
	40,001–55K	.88	.62	.54	.53
	55,001–75K	.97	.69	.60	.59
	75,001–100K	1.05	.74	.66	.64
	100,001–125K	1.17	.83	.73	.71
	125,001–150K	1.30	.91	.81	.79
	150,001–175K	1.44	1.02	.90	.89



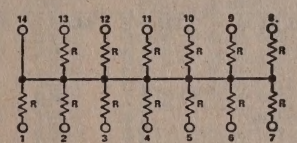
Carry full power even at 125° C ambients permitting expanded circuit design limits. Meet MIL-R-26E, Char. V with allowable 350° C hot spot (well above customary 250–275° C for similar units). Construction features exclusive silicone formulation Pro-Coat for high heat capability, high dielectric strength and toughness. Special resistance wire is low-tension wound on selected JAN-I-10, Grade L-4 ceramic tubes; welded to terminal cap which is welded to alloy-coated leads for full wetting and fast soldering. **Temperature Coefficient:** Less than ±20 ppm/° C. Ayrton-Perry non-inductive windings available; details on request. **Tolerance:** ±1%, ±3%, ±5% commercial; ±5% MIL, standard. Other tolerances available on request.

Type AS-½: Rated ½ watt at 125° C; 1 watt at 25° C; 100 V max. continuous working voltage. Size: .312″ lg. x .062″ O.D. **Type AS-1:** MIL Type RW70U. Rated 1 watt at 125° C; 1 watt char. U; 130 V max. cont. working voltage. Size: .375″ lg. x .093″ dia. **Type AS-2:** MIL Type RW79U, 69 V. Rated 2 watts commercial at 125° C, 3 watts Char. U and V at 25° C; 140 V max. continuous working voltage. Size: .500″ lg. x .218″ O.D. **Type AS-3:** Rated 3 watts at 125° C; 5 watts at 25° C; 200 V max. continuous working voltage. Size: .687″ lg. x .250″ O.D. **Type AS-5:** MIL Type RW74U, 67V. Rated 5 watts Char. U, 6.5 watts Char. V at 25° C; 7 watts commercial at 25° C; 400 V max. continuous working voltage. Size: .875″ lg. x .312″ O.D. **Type AS-7:** Rated 7 watts at 125° C; 9 watts at 25° C; 600 V max. continuous working voltage. Size: 1.250″ lg. x .312″ O.D. **Type AS-10:** MIL Type RW78U, RW68V. Rated 10 watts at 125° C, 10 watts Char. U, 11 watts Char. V, 14 watts commercial at 25° C; 1000 V max. continuous working voltage. Size: 1.812″ lg. x .375″ O.D.

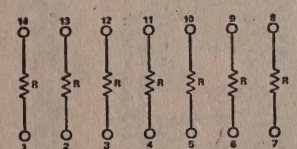
SEMIPRECISION RESISTOR NETWORKS



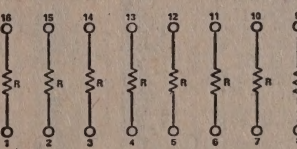
TRW/IRC resistor networks utilize resistance film deposited on an alumina ceramic substrate. Units are epoxy molded in standard DIP 14- or 16-pin packages. Applications include: pull-ups, pull-downs, line terminators, ladder networks, attenuators, current limiting and any circuit requiring high volume usage of a given resistance value.



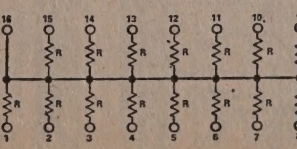
Type 9987



Type 9989



Type 9998



Type 9999

STANDARD RESISTANCE VALUES, ±2¼%

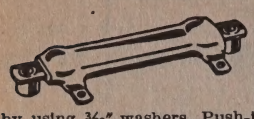
51	110	240	510	1100	2400	5100	11K	24K	51K
56	120	270	560	1200	2700	5600	12K	27K	56K*
62	130	300	620	1300	3000	6200	13K	30K	62K*
68	150	330	680	1500	3300	6800	15K	33K	68K*
75	160	360	750	1600	3600	7500	16K	36K	75K*
82	180	390	820	1800	3900	8200	18K	39K	82K*
91	200	430	910	2000	4300	9100	20K	43K	91K*
100	220	470	1000	2200	4700	10K	22K	47K	100K*

*Available in types 9989 and 9999 only.

TRW Type	No. of Pins	No. of Resistors	Net Each, Lots of 1-99	100-499	500-999	1000 Up
9987	14	13	$1.45	$1.12	$0.96	$0.80
9989	14	7	1.25	.99	.85	.70
9998	16	15	1.52	1.18	1.02	.85
9999	16	8	1.31	1.03	.89	.74

WARD LEONARD RESISTORS

STRIPOHM RESISTORS



Vitrohm® construction, but flat design for use where allowable space for component mounting is extremely limited. Strip shape, low silhouette mounting and terminal arrangement permits extra space saving. Suitable for multiple stacking by using 3/32" washers. Push-in type mounting brackets are supplied. Wattage Ratings of 10, 15 and 20 watt sizes mounted in standard brackets based on a "free air" temperature rise of 300° C, in a 40° C ambient max. Ratings of larger sizes with standard mounting brackets are based on resistors mounted horizontally on a vertical steel plate (10" x 10" x 0.04") in "free air" having an ambient temperature not over 40° C. **Tolerance:** ±5%.

STANDARD VALUES

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1	25	250	1250	3500	15,000	40,000
3	50	400	1500	4000	20,000	50,000
5	100	500	2000	5000	25,000	60,000
10	150	750	2500	7500	30,000	65,000
15	200	1000	3000	10,000	35,000	

10-WATT TYPE 10S

Size: 1¼" long x 2 1/32" wide over lugs. Mounting centers, 1".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–1,000	$1.63	$1.14	$0.98
1,250–5,000	1.60	1.18	1.01
7,500–10,000	1.70	1.19	1.02

15-WATT TYPE 15S

Size: 1½" long x 2 1/32" wide over lugs. Mounting centers, 1¼".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–1,000	$1.63	$1.14	$0.98
1,250–5,000	1.70	1.19	1.02
7,500–10,000	1.75	1.23	1.05

20-WATT TYPE 20S

Size: 2 11/32" long x 7/8" wide over lugs. Mounting centers, 2 5/16".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1	$2.30	$1.62	$1.38
3–1,000	1.68	1.18	1.01
1,250–5,000	1.73	1.21	1.04
7,500–10,000	1.80	1.26	1.08
15,000–20,000	1.83	1.28	1.10
25,000–40,000	1.53	1.35	1.16
50,000	2.00	1.40	1.20

30-WATT TYPE 30S

Size: 2½" long x 1 1/16" wide over lugs. Mounting centers, 2".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–1,000	$2.00	$1.40	$1.20
1,250–5,000	2.13	1.49	1.28

40-WATT TYPE 40S

Size: 3¼" long x 1 1/16" wide over lugs. Mounting centers, 2¾".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1	$2.93	$2.05	$1.76
3–1,000	2.10	1.47	1.26
1,250–5,000	2.18	1.53	1.31
7,500–10,000	2.38	1.67	1.43
15,000	2.50	1.75	1.50

55-WATT TYPE 55S

Size: 4¾" long x 1 1/16" wide over lugs. Mounting centers, 4¼".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–3	$2.95	$2.07	$1.77
5–1,000	2.08	1.46	1.25
1,250–5,000	2.30	1.61	1.38
7,500–10,000	2.43	1.70	1.46
15,000–20,000	2.73	1.91	1.64
25,000–30,000	3.13	2.19	1.88

65-WATT TYPE 65S

Size: 6" long x 1 1/16" wide over lugs. Mounting centers, 6".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–3	$3.45	$2.42	$2.07
5–1,000	2.48	1.74	1.49
1,250–5,000	2.55	1.79	1.53
7,500–10,000	2.83	1.98	1.70
15,000–20,000	3.03	2.12	1.82
25,000–40,000	3.65	2.54	2.18
50,000	3.98	2.79	2.39

75-WATT TYPE 75S

Size: 7¼" long x 1 1/16" wide over lugs. Mounting centers, 6¾".

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–5	$3.84	$2.57	$2.15
10–1,000	2.77	1.86	1.55
1,250–5,000	2.84	1.90	1.59
7,500–10,000	3.14	2.10	1.76
15,000–20,000	3.43	2.30	1.92
25,000–40,000	3.77	2.53	2.11
50,000–60,000	4.02	2.69	2.25
65,000	4.27	2.86	2.39

AXIOHM® LO-WATTAGE WIRE-WOUND RESISTORS

PRICES

W-L Type	W	Size, In. Dia. x Lg.	Resistance, Ohms	Net Each, Lots of 1-9	10-49	50-99
1X	1	3/32 x 13/32	1–1000	$0.95	$0.67	$0.57
			1100–2000	1.00	.70	.60
			2200–3000	1.19	.83	.71
			3300–4300	1.46	1.02	.88
			4700–6800	1.73	1.21	1.04
			7500	2.11	1.48	1.27
2X	2	3/16 x 3/8	1–1000	.76	.53	.46
			1100–3000	.78	.55	.47
			3300–3900	.92	.64	.55
			4300–5100	1.11	.78	.67
3X	3	3/16 x 1/2	1–1000	.68	.48	.41
			1100–6500	.70	.49	.42
			6800–9000	.92	.64	.55
			10,000	1.11	.78	.67
4X	4	3/16 x 1 1/16	1–1000	.70	.49	.42
			1100–5000	.76	.53	.46
			5600–10K	.84	.59	.50
5XM	5	3/16 x 1 5/16	1–1000	.70	.49	.42
			1100–5000	.81	.57	.49
			5600–10K	.86	.60	.52
			11K–15K	.95	.67	.57
			16K–20K	1.22	.85	.73
			22K–27K	1.46	1.02	.88
7X	7	3/16 x 1	1–1000	.78	.55	.47
			1100–5000	.85	.60	.51
			6000–10K	.88	.62	.53
			11K–20K	1.00	.70	.60
			25K–27K	1.33	.93	.80
10XM	10	5/16 x 1 3/4	1–1000	.90	.63	.54
			1100–5000	1.05	.74	.63
			6000–10K	1.10	.77	.66
			11K–20K	1.20	.84	.72
			22.5K–45K	1.30	.92	.78
			50,000	1.55	1.09	.93
12.5X	12½	3/8 x 1 3/4	1–1000	1.03	.72	.62
			1100–5000	1.15	.81	.69
			6000–10K	1.20	.84	.72
			11K–20K	1.33	.93	.80
			22.5K–45K	1.43	1.00	.86
			50,000	1.68	1.18	1.01

Rugged construction has high quality ceramic core and vitreous enamel coating overall. Axial leads are hot tin dipped and permanently anchored. Ratings are based on 325° C max. "free air" temperature rise in ambient temperature not exceeding 25° C. Standard tolerance, ±5%.

TYPES 1X AND 2X STANDARD VALUES

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1	13	36	91	240	560	1500	3900
1.5	15	39	100	250	620	1600	4300
2	16	43	110	270	680	1800	4700
3	18	47	120	300	750	2000	5100
4	20	51	130	330	820	2200	5600§
5	22	56	150	360	910	2400	6200§
7.5	24	62	160	390	1000	2500	6800§
10	27	68	180	430	1100	2700	7500§
11	30	75	200	470	1200	3000	
12	33	82	220	510	1300	3300	

TYPES 3X TO 12.5X STANDARD VALUES

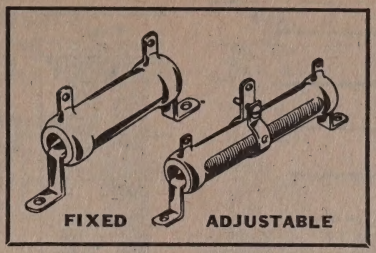
1	25	100	390•	1000	3300*	8000	20,000
1.5	27*	120*	400	1100	3500	8200*	22,000‡
2	30	125	450	1200	3900*	8500†	22,500†
3	33•	150	470*	1250	4000	9000	25,000
4	35	180•	500	1500	4500	10,000	27,000‡
5	39†	200	560*	1750	4700*	11,000	30,000†
7.5	40	220*	600	1800*	5000	12,000	35,000†
10	47*	225	680*	2000	5600*	12,500	40,000†
12	50	250	700	2200*	6000	13,500▲	45,000†
15	56*	270*	750	2250	6500♯	15,000	50,000†
18*	68•	300	800	2500	6800*	16,000▲	
20	75	330•	820*	2700*	7000	17,500	
22*	82*	350	900	3000	7500	18,000▲	

*Not available in 7X, 10XM or 12.5X types. †Available only in 10XM and 12.5X types. ‡Available only in 5XM type. §Not available in 2X type. •Not available in 10XM or 12.5X types. ♯Available only in 3X and 4X types. ▲Not available in 7X types.

WARD LEONARD RESISTORS

VITROHM® FIXED AND ADJUSTOHM® ADJUSTABLE RESISTORS

Vitrohm Resistors feature ceramic cores, resistance wire with a low-temperature coefficient of resistivity and a vitreous enamel coating developed by Ward Leonard for toughness, hardness, moisture and acid resistance, and good heat conductance. Terminals are tightly clamped to the core and spot-welded. Resistance wire is secured to terminal band by silver-brazing or spot welding. ADJUSTOHM resistors are furnished with one screw-driver type adjustable band terminal. Mounting brackets furnished with all resistors, except 5F, 10F and 20F, furnished only on request. **Tolerances:** Fixed, ±5%; adjustable, +10%, −5% (entire resistor less band). **Stock Values On Request.**



RESISTOR DIMENSIONS

Type	Size, In.	Mtg.
8/5F*	1 x 5/16	.....
10/8F*	1½ x 5/16	.....
12/10A†	1¾ x 5/16	.....
15/12F*	1½ x 7/16	.....
20/15F*	2 x 7/16	.....
25/20F‡	2 x 9/16	2⅝"
30/25F‡ and 30/25A†	2 x 5/8	2⅝"
35/30F‡	3 x 9/16	3⅝"
50/35F‡ and 50/35A†	4 x 9/16	4⅝"
70/50F‡ and 70/50A†	4½ x ¾	5¼"
100/70F‡	6½ x ¾	7¼"
130/100F‡ and A†	6½ x 1⅛	7¼"
160/130F‡	7½ x 1⅛	8¼"
180/160F‡ and A†	8½ x 1⅛	9¼"
225/200F‡ and A†	10½ x 1⅛	11¼"

*Lugs and wire leads. †Lugs and sliding band. ‡Lug terminals. 30/25A, 2 x ⅝".

FIXED RESISTORS

8/5-WATT TYPE 8/5F

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–1000	$1.00	$0.70	$0.60
1100–5000	1.13	.79	.68
6000–10K	1.50	1.05	.90

10/8-WATT TYPE 10/8F

1–1000	$1.05	$0.74	$0.63
1100–5000	1.15	.82	.69
6000–10K	1.25	.88	.75
11K–20K	1.38	.97	.83
20K–30K	1.78	1.25	1.07

12/10-WATT TYPE 12/10F

1–1000	$1.15	$0.81	$0.69
1100–5000	1.20	.84	.72
6000–10K	1.38	.97	.83
11K–20K	1.70	1.19	1.02
22.5K–40K	1.90	1.33	1.14
45K–50K	2.15	1.51	1.29

15/12-WATT TYPE 15/12F

1–1000	$1.15	$0.81	$0.69
1100–5000	1.35	.95	.81
6000–10K	1.48	1.04	.89
11K–20K	1.63	1.13	.98
22.5K–40K	1.80	1.26	1.08
45K–50K	1.93	1.35	1.16

20/15-WATT TYPE 20/15F

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–1000	$1.25	$0.88	$0.75
1200–5000	1.38	.97	.83
6000–10K	1.50	1.05	.90
12.5K–20K	1.60	1.12	.96
25K–40K	1.70	1.19	1.02
45K–60K	1.88	1.32	1.13
65K–70K	2.13	1.49	1.28

25/20-WATT TYPE 25/20F

1–1000	$1.25	$0.88	$0.75
1250–5000	1.35	.95	.81
6000–10K	1.48	1.04	.89
12K–20K	1.60	1.12	.96
25K–40K	1.75	1.23	1.05
50K–60K	1.93	1.35	1.16
65K–80K	2.43	1.70	1.46
85K–100K	2.83	1.98	1.70

30/25-WATT TYPE 30/25F

1–1000	$1.35	$0.95	$0.81
1250–5000	1.40	.98	.84
6000–10K	1.63	1.14	.98
12K–20K	1.78	1.25	1.07
25K–40K	1.90	1.33	1.14
50K–60K	2.13	1.49	1.28
70K–80K	2.88	2.02	1.73

35/30-WATT TYPE 35/30F

1–1000	$1.50	$1.05	$0.90
1250–5000	1.55	1.09	.93
6000–10K	1.68	1.18	1.01
12K–20K	1.88	1.32	1.13
25K–40K	2.20	1.54	1.32
50K–60K	2.48	1.74	1.49
70K–80K	3.03	2.12	1.82
100K	3.25	2.28	1.95

50/35-WATT TYPE 50/35F

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1–2	$2.18	$1.52	$1.31
3–1000	1.55	1.09	.93
1500–5000	1.63	1.14	.98
6000–10K	1.70	1.19	1.02
12K–20K	1.85	1.30	1.11
25K–40K	2.25	1.58	1.35
45K–60K	2.53	1.77	1.52
75K	2.63	1.84	1.58
100K–125K	2.80	1.96	1.68
150K	2.93	2.05	1.73
175K–200K	2.98	2.09	1.79
225K–250K	3.65	2.56	2.19

70/50-WATT TYPE 70/50F

1–4	$2.65	$1.86	$1.59
5–1000	1.88	1.32	1.13
1500–5000	2.00	1.40	1.20
6000–10K	2.10	1.47	1.26
12K–20K	2.30	1.61	1.38
25K–40K	2.63	1.58	1.58
45K–60K	2.90	1.74	1.74
75K	3.38	2.03	2.03
100K–125K	4.28	2.57	2.57
150K	4.48	2.69	2.69
175K–200K	4.75	3.33	2.85
225K–250K	5.55	3.89	3.33

100/70-WATT TYPE 100/70F

1–5	$3.39	$2.27	$1.90
10–1000	2.41	1.61	1.35
1250–5000	2.48	1.66	1.39
7500–10K	2.70	1.81	1.51
15K–20K	2.90	1.95	1.63
25K–40K	3.30	2.21	1.85
50K–60K	3.45	2.31	1.63
70K–75K	3.77	2.53	2.11
100K	4.27	2.80	2.39

130/100-WATT TYPE 130/100F

1–5	$3.82	$2.56	$2.14
10–1000	2.73	1.83	1.53
1250–5000	2.84	1.90	1.59
7500–10K	3.00	2.01	1.68
15K–20K	3.30	2.21	1.85
25K–40K	3.59	2.41	2.01
50K–60K	3.91	2.62	2.19
70K–75K	4.34	2.91	2.43
100K	4.77	3.20	2.67

160/130-WATT TYPE 160/130F

1–10	$4.09	$2.74	$2.29
15–1000	2.91	1.95	1.63
1500–5000	3.00	2.01	1.68
7500–10K	3.25	2.18	1.82
15K–20K	3.41	2.28	1.91
25K–40K	3.70	2.48	2.07
50K–60K	4.20	2.81	2.35
75K–80K	4.59	3.08	2.57
100K	5.05	3.38	2.83

180/160-WATT TYPE 180/160F

1–10	$4.30	$2.88	$2.41
15–1000	3.07	2.06	1.72
1500–5000	3.20	2.14	1.79
7500–10K	3.45	2.32	1.93
15K–20K	3.50	2.35	1.96
25K–40K	3.75	2.51	2.10
50K–60K	4.27	2.86	2.39
75K–80K	4.89	3.28	2.74
100K	5.50	3.69	3.08

225/200-WATT TYPE 225/200F

1–10	$4.68	$3.14	$2.62
25–1000	3.36	2.25	1.88
1500–5000	3.43	2.30	1.92
7500–10K	3.55	2.38	1.99
15K–20K	3.91	2.62	2.19
25K–40K	4.45	2.98	2.49
50K–60K	4.48	3.00	2.51
75K	4.93	3.30	2.76
100K	5.48	3.67	3.07

ADJUSTABLE RESISTORS

12/10-WATT TYPE 12/10A

Resistance Range, Ohms	Net Each, Lots of 1-9	10-49	50-99
1	$2.69	$1.88	$1.61
2–1000	2.17	1.52	1.30
1100–5000	2.22	1.55	1.33
6000–10K	2.42	1.69	1.45

30/25-WATT TYPE 30/25A

1–2	$2.78	$1.95	$1.67
3–1000	2.34	1.64	1.40
1250–5000	2.39	1.67	1.43
6000–10K	2.64	1.85	1.58
12K–20K	2.81	1.97	1.69
25K	2.95	2.07	1.77

50/35-WATT TYPE 50/35A

1–5	$3.41	$2.39	$2.05
10–1000	2.72	1.90	1.63
1250–5000	2.80	1.96	1.68
6000–10K	2.88	2.02	1.73
12K–20K	3.05	2.14	1.83
25K–40K	3.49	2.44	2.09
50K–60K	3.79	2.65	2.27
75K–80K	3.90	2.73	2.34
100K	4.09	2.86	2.45

70/50-WATT TYPE 70/50A

1–5	$4.06	$2.84	$2.44
10–1000	3.21	2.25	1.93
1250–5000	3.24	2.34	2.00
6000–10K	3.45	2.42	2.07
12K–20K	3.67	2.57	2.20
25K–40K	4.03	2.82	2.42
50K–60K	4.33	3.03	2.60
75K–80K	4.86	3.40	2.92
100K	5.85	4.10	3.51

130/100-WATT TYPE 130/100A

1–10	$5.64	$3.78	$3.16
25–1000	4.44	2.97	2.49
1500–5000	4.56	3.06	2.55
6000–10K	4.74	3.18	2.65
15K–20K	5.07	3.40	2.84
25K–40K	5.39	3.61	3.02
50K–60K	6.06	4.06	3.39
75K	6.49	4.35	3.63
100K	6.99	4.68	3.91

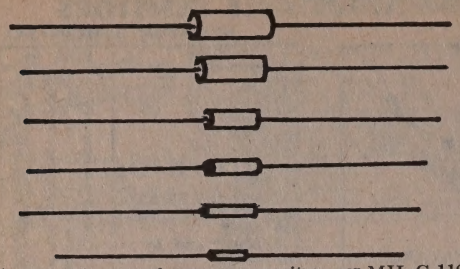
180/160-WATT TYPE 180/160A

1–25	$6.43	$4.31	$3.60
50–1000	5.08	3.40	2.84
1500–5000	5.22	3.50	2.92
6000–10K	5.50	3.69	3.08
15K–20K	5.55	3.72	3.11
25K–40K	5.81	3.89	3.25
50K–60K	6.40	4.29	3.58
75K–80K	7.08	4.74	3.96
100K	7.75	5.19	4.34

225/200-WATT TYPE 225/200A

1–25	$7.24	$4.85	$4.05
50–1000	5.79	3.88	3.24
1500–5000	5.86	3.92	3.28
7500–10K	6.00	4.02	3.36
15K–20K	6.39	4.28	3.58
25K–40K	6.99	4.68	3.91
50K–60K	7.02	4.70	3.93
75K	7.51	5.04	4.21
100K	8.12	5.44	4.55
125K	8.89	5.96	4.98
150K	9.06	6.07	5.07

MIL-C-11015D, CK12-CK16 CERAMICS



Ceramic dielectric general purpose capacitors per MIL-C-11015D. Capacitance tolerance, ±10% (±20% available). Rated voltage, 100 or 50 volts DC. Maximum Size (dia. x lgth.), CK12—.100″ x .170″; CK13—.100″ x .260″; CK14—.150″ x .400″; CK15—.265″ x .520″; CK16—:370″ x .720″.

STOCK VALUES, ±10% TOLERANCE PRICES

Cap., pF	MIL-C-11051D Type	WV DC	Net Each, Lots of 1-24	25-49	50-99	100-249
10	CK12BX100K*	100	$0.90	$0.59	$0.45	$0.36
12	CK12BX120K	100	.90	.59	.45	.36
15	CK12BX150K*	100	.90	.59	.45	.36
18	CK12BX180K	100	.90	.59	.45	.36
22	CK12BX220K*	100	.90	.59	.45	.36
27	CK12BX270K	100	.90	.59	.45	.36
33	CK12BX330K*	100	.90	.59	.45	.36
39	CK12BX390K	100	.90	.59	.45	.36
47	CK12BX470K*	100	.90	.59	.45	.36
56	CK12BX560K	100	.90	.59	.45	.36
68	CK12BX680K*	100	.90	.59	.45	.36
82	CK12BX820K	100	.90	.59	.45	.36
100	CK12BX101K*	100	.90	.59	.45	.36
120	CK12BX121K	100	.90	.59	.45	.36
150	CK12BX151K*	100	.90	.59	.45	.36
180	CK12BX181K	100	.90	.59	.45	.36
220	CK12BX221K*	100	.90	.59	.45	.36
270	CK12BX271K	100	.90	.59	.45	.36
330	CK12BX331K*	100	.90	.59	.45	.36
390	CK12BX391K	100	.90	.59	.45	.36
470	CK12BX471K*	100	.90	.59	.45	.36
560	CK12BX561K	100	.90	.59	.45	.36
680	CK12BX681K*	100	.90	.59	.45	.36
1000	CK12BX102K*	100	.90	.59	.45	.36
1200	CK12BX122K	100	.90	.59	.45	.36
1500	CK12BX152K*	100	.90	.59	.45	.36
1800	CK12BX182K	100	.90	.59	.45	.36
2200	CK12BX222K*	100	.90	.59	.45	.36
2700	CK12BX272K	100	.90	.59	.45	.36
3300	CK12BX332K*	100	.90	.59	.45	.36
3900	CK12BX392K	100	.90	.59	.45	.36
4700	CK12BX472K*	100	.90	.59	.45	.36
5600	CK13BX562K	100	.95	.63	.48	.38
6800	CK13BX682K*	100	.95	.63	.48	.38
8200	CK13BX822K	100	.95	.63	.48	.38
10K	CK13BX103K*	100	.95	.63	.48	.38
12K	CK14BX123K	100	1.60	1.06	.80	.64
15K	CK14BX153K*	100	1.60	1.06	.80	.64
18K	CK14BX183K	100	1.60	1.06	.80	.64
22K	CK14BX223K*	100	1.60	1.06	.80	.64
27K	CK14BX273K	100	1.60	1.06	.80	.64
33K	CK14BX333K*	100	2.00	1.32	1.00	.80
39K	CK14BX393K	100	2.00	1.32	1.00	.80
47K	CK14BX473K*	100	2.00	1.32	1.00	.80
56K	CK14BR563K	100	2.35	1.55	1.18	.94
68K	CK14BR683K*	100	2.35	1.55	1.18	.94
82K	CK14BR823K	100	2.35	1.55	1.18	.94
100K	CK14BR104K*	100	2.35	1.55	1.18	.94
100K	CK15BX104K*	100	2.95	1.95	1.48	1.18
120K	CK15BR124K	100	3.70	2.44	1.85	1.48
150K	CK15BR154K*	100	3.70	2.44	1.85	1.48
180K	CK15BR184K	100	4.65	3.07	2.33	1.86
220K	CK15BR224K*	100	4.65	3.07	2.33	1.86
270K	CK15BR274K	100	5.35	3.53	2.68	2.14
330K	CK15BR334K*	100	5.35	3.53	2.68	2.14
470K	CK16BR474K*	100	22.00	14.52	11.00	8.80
1000K	CK16BR105K*	100	27.80	18.35	13.90	11.12
5600	CK12BX562K	50	.95	.63	.48	.38
6800	CK12BX682K*	50	.95	.63	.48	.38
8200	CK12BX822K	50	.95	.63	.48	.38
10K	CK12BX103K*	50	.95	.63	.48	.38
12K	CK13BX123K	50	1.25	.83	.63	.50
15K	CK13BX153K*	50	1.25	.83	.63	.50
18K	CK13BX183K	50	1.25	.83	.63	.50
22K	CK13BX223K*	50	1.25	.83	.63	.50
27K	CK13BR273K	50	1.25	.83	.63	.50
33K	CK13BR333K*	50	1.55	1.02	.78	.62
39K	CK13BR393K	50	1.55	1.02	.78	.62
47K	CK13BR473K*	50	1.55	1.02	.78	.62
120K	CK14BR124K	50	3.35	2.21	1.68	1.34
150K	CK14BR154K*	50	3.35	2.21	1.68	1.34
180K	CK14BR184K	50	4.00	2.64	2.00	1.60
220K	CK14BR224K*	50	4.00	2.64	2.00	1.60
270K	CK14BR274K	50	5.50	3.63	2.75	2.20
470K	CK15BR474K*	50	8.75	5.78	4.38	3.50
1000K	CK15BR105K*	50	13.50	8.91	6.75	5.40
2200K	CK16BR225K*	50	41.20	27.19	20.60	16.48
3300K	CK16BR335K*	50	54.55	36.00	27.28	21.82

*Also available in ±20% tolerance, to order change suffix **K** to **M** (e.g., CK16BR335**M**).

±20% TOLERANCE PRICES

Cap., pF	WV DC	Net Each, Lots of 1-24	25-49	50-99	100-249
10–4700	100	$ 0.82	$ 0.54	$ 0.41	$ 0.33
6800–10K	100	.86	.57	.44	.35
15K–22K	100	1.45	.96	.73	.58
33K–47K	100	1.82	1.20	.91	.73
68K–100K	100	2.14	1.41	1.07	.85
100K	100	2.68	1.77	1.35	1.07
150K	100	3.36	2.22	1.68	1.35
220K	100	4.23	2.79	2.11	1.69
330K	100	4.86	3.21	2.44	1.95
470K	100	20.00	13.20	10.00	8.00
1000K	100	25.27	16.68	12.64	10.11
6800–10K	50	.86	.57	.44	.35
15K–22K	50	1.14	.75	.57	.46
33K–47K	50	1.41	.93	.71	.56
150K	50	3.05	2.01	1.53	1.22
220K	50	3.64	2.40	1.82	1.45
470K	50	7.95	5.25	3.98	3.18
1000K	50	12.27	8.10	6.14	4.91
2200K	50	37.45	24.72	18.73	14.98
3300K	50	49.58	32.72	24.80	19.83

MIL-C-39014B TYPE CKR11, CKR12, CKR14, CKR15 AND CKR16 AXIAL LEAD CAPACITORS

Available at 50 or 100 volt rating with transfer molded cases. Come with oxygen free copper leads. Designed to MIL-STD-1276 type C. **Prices on request.**

100 VOLT RATING

Cap., pF	MIL-C-39014B Number*	Tol. Code	Cap., pF	MIL-C-39014B Number*	Tol. Code
10	CKR11BX100	K, M	2700	CKR11BX272	K
12	CKR11BX120	K	3300	CKR11BX332	K, M
15	CKR11BX150	K, M	3900	CKR11BX392	K
18	CKR11BX180	K	4700	CKR11BX472	K, M
22	CKR11BX220	K, M	5600	CKR12BX562	K
27	CKR11BX270	K	6800	CKR12BX682	K, M
33	CKR11BX330	K, M	8200	CKR12BX822	K
39	CKR11BX390	K	10000	CKR12BX103	K, M
47	CKR11BX470	K, M	12000	CKR14BX123	K
56	CKR11BX560	K	15000	CKR14BX153	K, M
68	CKR11BX680	K, M	18000	CKR14BX183	K
82	CKR11BX820	K	22000	CKR14BX223	K, M
100	CKR11BX101	K, M	27000	CKR14BX273	K
120	CKR11BX121	K	33000	CKR14BX333	K, M
150	CKR11BX151	K, M	39000	CKR14BX393	K
180	CKR11BX181	K	47000	CKR14BX473	K, M
220	CKR11BX221	K, M	56000	CKR14BR563†	K
270	CKR11BX271	K	68000	CKR14BR683†	K, M
330	CKR11BX331	K, M	82000	CKR14BR823†	K
390	CKR11BX391	K	100000	CKR14BR104†	K, M
470	CKR11BX471	K, M	120000	CKR15BR124	K
560	CKR11BX561	K	150000	CKR15BR154	K, M
680	CKR11BX681	K, M	180000	CKR15BR184	K
820	CKR11BX821	K	220000	CKR15BR224	K, M
1000	CKR11BX102	K, M	270000	CKR15BR274	K
1200	CKR11BX122	K	330000	CKR15BR334	K, M
1500	CKR11BX152	K, M	470000	CKR16BR474	K, M
1800	CKR11BX182	K	680000	CKR16BR684	K, M
2200	CKR11BX222	K, M	1 μF	CKR16BR105	K, M

50 VOLT RATING

5600	CKR11BX562	K	68000	CKR14BX683	K, M
6800	CKR11BX682	K, M	82000	CKR14BX823	K
8200	CKR11BX822	K	100000	CKR14BX104	K, M
10000	CKR11BX103	K, M	120000	CKR14BR124	K
12000	CKR12BX123	K	150000	CKR14BR154	K, M
15000	CKR12BX153	K, M	180000	CKR14BR184	K
18000	CKR12BX183	K	220000	CKR14BR224	K, M
22000	CKR12BX223	K, M	270000	CKR14BR274	K
27000	CKR12BX273	K	470000	CKR15BR474	K, M
33000	CKR12BX333	K, M	680000	CKR15BR684	K, M
39000	CKR12BX393	K	1 μF	CKR15BR105	K, M
47000	CKR12BX473	K, M	2.2 μF	CKR16BR225	K, M
56000	CKR14BX563	K	3.3 μF	CKR16BR335	K, M

*Add tolerance suffix to part number as indicated (**K** = 10%; **M** = 20%); add failure rate level after tolerance code (**L** = 2.0%/1000 hrs.; **M** = 1.0%/1000 hrs.; **P** = 0.1%/1000 hrs.; **R** = 0.01%/1000 hrs.; **S** = 0.001%/1000 hrs.). Example, CKR11BX100**MR** indicates 10 pF capacitor at 100 volt rating with 20% tolerance and 0.01%/1000 hrs. failure rate level. †Also available as CKR15BX at 100 volts.

CASE SIZES

Type	Maximum Size, Inches Diameter	Length
CKR11	.100	.170
CKR12	.100	.260
CKR14	.150	.400
CKR15	.265	.520
CKR16	.370	.720

MIL-C-11015D, CK05-CK06 EXTENDED RANGE CERAMIC CAPACITORS

Meet MIL-C-11015D, Type CK05-CK06 specifications. Capacitance tolerance, ±10% (suffix K) or ±20% (suffix M) as indicated. Working voltage, 200, 100 or 50 volts DC.

STOCK VALUES, ±10% TOLERANCE PRICES

Cap., pF	MIL-C-11015D Type	WV DC	Net Each, Lots of 1-24	25-49	50-99	100-249
10	CK05BX100K*	200	$ 0.50	$ 0.33	$ 0.25	$ 0.20
12	CK05BX120K	200	.50	.33	.25	.20
15	CK05BX150K*	200	.50	.33	.25	.20
18	CK05BX180K	200	.50	.33	.25	.20
22	CK05BX220K*	200	.50	.33	.25	.20
27	CK05BX270K	200	.50	.33	.25	.20
33	CK05BX330K*	200	.50	.33	.25	.20
39	CK05BX390K	200	.50	.33	.25	.20
47	CK05BX470K*	200	.50	.33	.25	.20
56	CK05BX560K	200	.50	.33	.25	.20
68	CK05BX680K*	200	.50	.33	.25	.20
82	CK05BX820K	200	.50	.33	.25	.20
100	CK05BX101K*	200	.50	.33	.25	.20
120	CK05BX121K	200	.50	.33	.25	.20
150	CK05BX151K*	200	.50	.33	.25	.20
180	CK05BX181K	200	.50	.33	.25	.20
220	CK05BX221K*	200	.50	.33	.25	.20
270	CK05BX271K	200	.50	.33	.25	.20
330	CK05BX331K*	200	.50	.33	.25	.20
390	CK05BX391K	200	.50	.33	.25	.20
470	CK05BX471K*	200	.50	.33	.25	.20
560	CK05BX561K	200	.50	.33	.25	.20
680	CK05BX681K*	200	.50	.33	.25	.20
820	CK05BX821K	200	.50	.33	.25	.20
1000	CK05BX102K*	200	.50	.33	.25	.20
1200	CK06BX122K	200	.80	.53	.40	.32
1500	CK06BX152K*	200	.80	.53	.40	.32
1800	CK06BX182K	200	.80	.53	.40	.32
2200	CK06BX222K*	200	.80	.53	.40	.32
2700	CK06BX272K	200	.80	.53	.40	.32
3300	CK06BX332K*	200	.80	.53	.40	.32
3900	CK06BX392K	200	.80	.53	.40	.32
4700	CK06BX472K*	200	.80	.53	.40	.32
5600	CK06BX562K	200	.80	.53	.40	.32
6800	CK06BX682K*	200	.80	.53	.40	.32
8200	CK06BX822K	200	.80	.53	.40	.32
10K	CK06BX103K*	200	.80	.53	.40	.32
1200	CK05BX122K	100	.70	.46	.35	.28
1500	CK05BX152K*	100	.70	.46	.35	.28
1800	CK05BX182K	100	.70	.46	.35	.28
2200	CK05BX222K*	100	.70	.46	.35	.28
2700	CK05BX272K	100	.70	.46	.35	.28
3300	CK05BX332K*	100	.70	.46	.35	.28
3900	CK05BX392K	100	.70	.46	.35	.28
4700	CK05BX472K*	100	.70	.46	.35	.28
5600	CK05BX562K	100	.70	.46	.35	.28
6800	CK05BX682K*	100	.75	.50	.38	.30
8200	CK05BX822K	100	.75	.50	.38	.30
10K	CK05BX103K*	100	.75	.50	.38	.30
12K	CK06BX123K	100	.95	.63	.48	.38
15K	CK06BX153K*	100	.95	.63	.48	.38
18K	CK06BX183K	100	.95	.63	.48	.38
22K	CK06BX223K*	100	.95	.63	.48	.38
27K	CK06BX273K	100	.95	.63	.48	.38
33K	CK06BX333K*	100	1.10	.73	.55	.44
39K	CK06BX393K	100	1.10	.73	.55	.44
47K	CK06BX473K*	100	1.10	.73	.55	.44
56K	CK06BX563K	100	1.15	.76	.58	.46
68K	CK06BX683K*	100	1.15	.76	.58	.46
82K	CK06BX823K	100	1.30	.86	.65	.52
100K	CK06BX104K*	100	1.30	.86	.65	.52
12K	CK05BX123K	50	1.15	.76	.58	.46
15K	CK05BX153K*	50	1.15	.76	.58	.46
18K	CK05BX183K	50	1.15	.76	.58	.46
22K	CK05BX223K*	50	1.15	.76	.58	.46
27K	CK05BX273K	50	1.15	.76	.58	.46
33K	CK05BX333K*	50	1.25	.83	.63	.50
39K	CK05BX393K	50	1.25	.83	.63	.50
47K	CK05BX473K*	50	1.25	.83	.63	.50
56K	CK05BX563K	50	1.50	.99	.75	.60
68K	CK05BX683K*	50	1.50	.99	.75	.60
82K	CK05BX823K	50	1.60	1.06	.80	.64
100K	CK05BX104K*	50	1.60	1.06	.80	.64
120K	CK06BX124K	50	2.45	1.62	1.23	.98
150K	CK06BX154K*	50	2.45	1.62	1.23	.98
180K	CK06BX184K	50	2.90	1.91	1.45	1.16
220K	CK06BX224K*	50	2.90	1.91	1.45	1.16
270K	CK06BX274K	50	3.90	2.57	1.95	1.56
330K	CK06BX334K*	50	3.90	2.57	1.95	1.56
390K	CK06BX394K	50	5.55	3.66	2.78	2.22
470K	CK06BX474K*	50	5.55	3.66	2.78	2.22
560K	CK06BX564K	50	7.20	4.75	3.60	2.88
680K	CK06BX684K*	50	7.20	4.75	3.60	2.88
820K	CK06BX824K	50	8.50	5.61	4.25	3.40
000K	CK06BX105K*	50	8.50	5.61	4.25	3.40

Also available in ±20% tolerance; to order, change suffix K to M (e.g., CK06BX105M).

EXTENDED RANGE CAPACITORS (CONT'D)

±20% TOLERANCE PRICES

Cap., pF	WV DC	Net Each, Lots of 1-24	25-49	50-99	100-249
10–1000	200	$ 0.46	$ 0.30	$ 0.23	$ 0.18
1500–10K	200	.73	.48	.36	.29
1500–4700	100	.64	.42	.32	.26
6800–10K	100	.68	.46	.35	.28
15K–22K	100	.86	.57	.44	.35
33K–47K	100	1.00	.66	.50	.40
68K	100	1.05	.69	.53	.42
100K	100	1.18	.78	.59	.47
15K–22K	50	1.05	.69	.53	.42
33K–47K	50	1.17	.75	.57	.46
68K	50	1.36	.90	.68	.55
100K	50	1.45	.96	.73	.58
150K	50	2.23	1.47	1.12	.89
220K	50	2.64	1.74	1.32	1.05
330K	50	3.54	2.34	1.77	1.42
470K	50	5.05	3.33	2.53	2.02
680K	50	6.55	4.32	3.27	2.62
1000K	50	7.73	5.10	3.86	3.09

CKR05-CKR06 HIGH RELIABILITY CERAMICS

MIL-C-39014 high reliability version of units listed as CK05-CK06, etc. in MIL-C-11015. Complete the part number by adding suffix for required failure rate: **L** (2.0%), **M** (1.0%), **P** (0.1%), **R** (0.01%) or **S** (0.001%).

TYPE CKR05

Rated 200 WVDC, 10 thru 1000 pF; 100 WVDC, 1200 thru 10,000 pF; 50 WVDC, 12,000 pF up.

Cap., pF	MIL Designation	Cap., pF	MIL Designation
10	CKR05BX100K-*	1,200	CKR05BX122K-
12	CKR05BX120K-	1,500	CKR05BX152K-*
15	CKR05BX150K-*	1,800	CKR05BX182K-
18	CKR05BX180K-	2,200	CKR05BX222K-*
22	CKR05BX220K-*	2,700	CKR05BX272K-
27	CKR05BX270K-	3,300	CKR05BX332K-*
33	CKR05BX330K-*	3,900	CKR05BX392K-
39	CKR05BX390K-	4,700	CKR05BX472K-*
47	CKR05BX470K-*	5,600	CKR05BX562K-
56	CKR05BX560K-	6,800	CKR05BX682K-*
68	CKR05BX680K-*	8,200	CKR05BX822K-
82	CKR05BX820K-	10,000	CKR05BX103K-*
100	CKR05BX101K-*	12,000	CKR05BX123K-
120	CKR05BX121K-	15,000	CKR05BX153K-*
150	CKR05BX151K-*	18,000	CKR05BX183K-
180	CKR05BX181K-	22,000	CKR05BX223K-*
220	CKR05BX221K-*	27,000	CKR05BX273K-
270	CKR05BX271K-	33,000	CKR05BX333K-*
330	CKR05BX331K-*	39,000	CKR05BX393K-
390	CKR05BX391K-	47,000	CKR05BX473K-*
470	CKR05BX471K-*	56,000	CKR05BX563K-
560	CKR05BX561K-	68,000	CKR05BX683K-*
680	CKR05BX681K-*	82,000	CKR05BX823K-
820	CKR05BX821K-	100,000	CKR05BX104K-*
1,000	CKR05BX102K-*		

TYPE CKR06

Rated 200 WVDC, 1200 thru 10,000 pF; 100 WVDC, 12,000 thru 100,000 pF; 50 WVDC, 120,000 pF up.

Cap., pF	MIL Designation	Cap., pF	MIL Designation
1,200	CKR06BX122K-	39,000	CKR06BX393K-
1,500	CKR06BX152K-*	47,000	CKR06BX473K-
1,800	CKR06BX182K-	56,000	CKR06BX563K-
2,200	CKR06BX222K-*	68,000	CKR06BX683K-
2,700	CKR06BX272K-	82,000	CKR06BX823K-
3,300	CKR06BX332K-*	100,000	CKR06BX104K-
3,900	CKR06BX392K-	120,000	CKR06BX124K-
4,700	CKR06BX472K-*	150,000	CKR06BX154K-
5,600	CKR06BX562K-	180,000	CKR06BX184K-
6,800	CKR06BX682K-*	220,000	CKR06BX224K-
8,200	CKR06BX882K-	270,000	CKR06BX274K-
10,000	CKR06BX103K-*	330,000	CKR06BX334K-
12,000	CKR06BX123K-	390,000	CKR06BX394K-
15,000	CKR06BX153K-	470,000†	CKR06BX474K-
18,000	CKR06BX183K-	560,000†	CKR06BX564K-
22,000	CKR06BX223K-	680,000†	CKR06BX684K-
27,000	CKR06BX273K-	820,000†	CKR06BX824K-
33,000	CKR06BX333K-	1.0 μF†	CKR06BX105K-

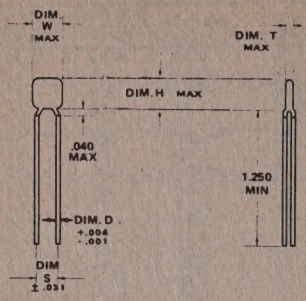
*Available in ±20% tolerance. To order, change the suffix K- to M- (e.g., CK05BX100MS for ±20% tolerance and S failure rate).
†Ceramic encased Ceraseal construction.

CKR05 AND CKR06 PRICES ON REQUEST

OUR LARGE INVENTORY OF AVX CERAMICS CAPACITORS ASSURES FAST DELIVERY ON YOUR ORDER. ASK ABOUT NEW OR UNLISTED ITEMS.

Arco Ceramic Capacitors

TYPE MCG, MCA AND MCY
MONOLITHIC CERAMIC CAPACITORS



Arco offers three different versions of monolithic ceramic capacitors. General purpose Type MCG are designed for extremely high volumetric efficiency. Type MCA offer high stability while Type MCY offer high stability and miniature size. **Capacitance Range:** Type MCG, .01 μF to 4.7 μF; Type MCA, 2.7 pF to .047 μF; Type MCY, 10 pF to .47 μF. **Operating Temperature Range:** MCG, +10° C to +85° C; MCA, −55° C to +125° C; MCY −55° C to +125° C. **Temperature Characteristics:** MCG, +22% −56%; MCA, 0 ±30 ppm/° C; MCY, ±15%. **Voltage Ratings:** MCG, 100 and 50 VDC; MCA, 100 VDC; MCY, 100 and 50 VDC. **Lead Material:** Solder coated copper.

TYPE MCG

Arco Number*	Cap., μF	Net Each, Lots of 1-99	100-499	500-2499
3MCG-C-103M	.01	$0.33	$0.29	$0.19
3MCG-C-153M	.015	.40	.35	.23
3MCG-C-223M	.022	.40	.35	.23
3MCG-C-273M	.027	.40	.35	.23
3MCG-C-333M	.033	.40	.35	.23
3MCG-C-473M	.047	.40	.35	.23
3MCG-C-683M	.068	.44	.38	.26
3MCG-C-104M	.1	.44	.38	.26
4MCG-C-154M	.15	.55	.48	.32
4MCG-C-224M	.22	.70	.61	.40
4MCG-C-274M	.27	.81	.70	.47
4MCG-C-334M	.33	.92	.80	.53
4MCG-C-474M	.47	1.03	.89	.60
4MCG-L-684M	.68	1.33	1.16	.77
4MCG-L-105M	1.0	1.62	1.40	.94
5MCG-L-155M	1.5	1.91	1.66	1.11
5MCG-L-225M	2.2	3.12	2.71	1.81
5MCG-L-335M	3.3	4.77	4.15	2.77
5MCG-L-475M	4.7	6.42	5.59	3.72

*Available in ±20% tolerance only. **Working voltage** is indicated by letter after MCG (3MCG-**C**-562), **C** = 100 WVDC; **L** = 50 WVDC.

TYPE MCA

Arco Number*	Cap., pF	Tol. Available	Net Each, Lots of 1-99	100-499	500-2499
1MCA-C-2R7	2.7	D	$0.26	$0.22	$0.15
1MCA-C-3R3	3.3	D	.26	.22	.15
1MCA-C-4R7	4.7	D	.26	.22	.15
1MCA-C-5R6	5.6	K	.26	.22	.15
1MCA-C-6R8	6.8	K	.26	.22	.15
1MCA-C-8R2	8.2	K	.26	.22	.15
1MCA-C-100	10	K	.26	.22	.15
2MCA-C-120	12	K	.26	.22	.15
2MCA-C-150	15	K	.26	.22	.15
2MCA-C-180	18	K	.26	.22	.15
2MCA-C-220	22	K	.26	.22	.15
3MCA-C-270	27	K	.26	.22	.15
3MCA-C-330	33	K	.26	.22	.15
3MCA-C-390	39	K	.26	.22	.15
3MCA-C-470	47	K	.26	.22	.15
3MCA-C-560	56	K	.29	.26	.17
3MCA-C-680	68	K	.33	.29	.19
3MCA-C-820	82	K	.37	.32	.21
3MCA-C-101	100	K	.37	.32	.21
3MCA-C-121	120	K	.44	.38	.26
3MCA-C-151	150	K	.44	.38	.26
3MCA-C-181	180	K	.44	.38	.26
3MCA-C-221	220	K	.48	.41	.28
3MCA-C-271	270	K	.48	.41	.28
3MCA-C-331	330	K	.48	.41	.28
3MCA-C-391	390	K	.48	.41	.28
3MCA-C-471	470	K	.51	.45	.30
3MCA-C-561	560	K	.51	.45	.30
3MCA-C-681	680	K	.51	.45	.30
3MCA-C-821	820	K	.55	.48	.32
3MCA-C-102	1000	K	.55	.48	.32
4MCA-C-122	1200	K	.62	.54	.36
4MCA-C-152	1500	K	.73	.64	.43
4MCA-C-182	1800	K	.81	.70	.47
4MCA-C-222	2200	K	.92	.80	.53
4MCA-C-272	2700	K	1.06	.93	.62
4MCA-C-332	3300	K	1.25	1.09	.72
4MCA-C-392	3900	K	1.43	1.24	.83
4MCA-C-472	4700	K	1.62	1.40	.94
4MCA-C-562	5600	K	1.91	1.66	1.11
4MCA-C-682	6800	K	2.20	1.92	1.28
4MCA-C-822	8200	K	2.50	2.17	1.45
4MCA-C-103	.01 μF	K	2.57	2.23	1.49
5MCA-C-123	.012 μF	K	2.94	2.55	1.70
5MCA-C-153	.015 μF	K	3.30	2.87	1.92
5MCA-C-183	.018 μF	K	3.67	3.19	2.13
5MCA-C-223	.022 μF	K	4.04	3.51	2.34
5MCA-C-273	.027 μF	K	4.70	4.09	2.72
5MCA-C-333	.033 μF	K	5.32	4.63	3.09
5MCA-C-393	.039 μF	K	5.87	5.11	3.40
5MCA-C-473	.047 μF	K	6.61	5.74	3.83

***When ordering,** add tolerance suffix to Arco part number (e.g., 5MCA-C-473**K**). Tolerance: **K** = ±10%; **J** = ±5%; **G** = ±2%; **F** = ±1%. **D** = ±0.5 pF. **Prices** shown are for ±10% tolerance only; other prices available on request. †Price on request.

SIZE

Case size is indicated by first digit in Arco part number, example, **1**MCY-C-100.

Case Code	Dimensions, Inches W	H	T	S	D
1	.100	.100	.100	.100	.016
2	.150	.150	.100	.100	.016
3	.200	.200	.125	.100	.016
4	.300	.300	.150	.200	.016
5	500	.500	.200	.400	.025

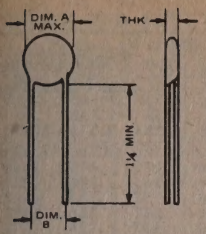
TYPE MCY

Arco Number*	Cap., pF	Tol. Available	Net Each, Lots of 1-99	100-499	500-2499
1MCY-C-100	10	K	$0.26	$0.23	$0.15
1MCY-C-120	12	K	.26	.23	.15
1MCY-C-150	15	K	.26	.23	.15
1MCY-C-180	18	K	.26	.23	.15
1MCY-C-220	22	K	.26	.23	.15
1MCY-C-270	27	K	.26	.23	.15
1MCY-C-330	33	K	.26	.23	.15
1MCY-C-390	39	K	.26	.23	.15
1MCY-C-470	47	K	.26	.23	.15
1MCY-C-560	56	K	.26	.23	.15
1MCY-C-680	68	K	.26	.23	.15
1MCY-C-820	82	K	.26	.23	.15
1MCY-C-101	100	K	.26	.23	.15
1MCY-C-121	120	K	.26	.23	.15
1MCY-C-151	150	K	.26	.23	.15
1MCY-C-181	180	K	.26	.23	.15
1MCY-C-221	220	K	.26	.23	.15
1MCY-C-271	270	K	.26	.23	.15
1MCY-C-331	330	K	.26	.23	.15
2MCY-C-391	390	K	.26	.23	.15
2MCY-C-471	470	K	.26	.23	.15
2MCY-C-561	560	K	.26	.23	.15
2MCY-C-681	680	K	.26	.23	.15
2MCY-C-821	820	K	.26	.23	.15
2MCY-C-102	1000	K	.26	.23	.15
3MCY-C-122	1200	K	.35	.30	.20
3MCY-C-152	1500	K	.35	.30	.20
3MCY-C-182	1800	K	.35	.30	.20
3MCY-C-222	2200	K	.35	.30	.20
3MCY-C-272	2700	K	.35	.30	.20
3MCY-C-332	3300	K	.35	.30	.20
3MCY-C-392	3900	K	.35	.30	.20
3MCY-C-472	4700	K	.35	.30	.20
3MCY-C-562	5600	K	.38	.33	.22
3MCY-C-682	6800	K	.38	.33	.22
3MCY-C-822	8200	K	.38	.33	.22
3MCY-C-103	.01 μF	K	.46	.40	.27
4MCY-C-123	.012 μF	K	.61	.53	.35
4MCY-C-153	.015 μF	K	.61	.53	.35
4MCY-C-183	.018 μF	K	.71	.61	.40
4MCY-C-223	.022 μF	K	.71	.61	.40
4MCY-C-273	.027 μF	K	.71	.61	.40
4MCY-C-333	.033 μF	K	.71	.61	.40
4MCY-C-393	.039 μF	K	.71	.61	.40
4MCY-C-473	.047 μF	K	.81	.70	.47
4MCY-C-563	.056 μF	K	.98	.84	.55
4MCY-C-683	.068 μF	K	.98	.84	.55
4MCY-C-823	.082 μF	K	.98	.84	.55
4MCY-C-104	.1 μF	K	1.33	1.14	.77
4MCY-L-124	.12 μF	K	1.33	1.14	.77
4MCY-L-154	.15 μF	K	1.33	1.14	.77
4MCY-L-184	.18 μF	K	1.33	1.14	.77
4MCY-L-224	.22 μF	K	1.33	1.14	.77
4MCY-L-274	.27 μF	K	2.22	1.59	.88
4MCY-L-334	.33 μF	K	2.22	1.59	.96
4MCY-L-394	.39 μF	K	2.47	1.76	1.16
4MCY-L-474	.47 μF	K	2.47	1.76	1.37

***When ordering,** add tolerance suffix to Arco number (e.g., 4MCY-L-474**K**). Tolerance: **K** = ±10%; **J** = ±5%. **Working voltage** is shown by letter after MCY (4MCY-**L**-474K), **C** = 100 WVDC; **L** = 50 WVDC. **Prices** shown are for ±10% toleran other prices available on request.

CERAMIC DISC AND RADIAL LEAD ALUMINUM CAPACITORS

CERAMIC DISC CAPACITORS



Ceramic disc capacitors exhibit a level of performance and reliability consistent with modern design techniques. Available in high (1000 VDC) and low (50 and 100 VDC) voltage ratings. Higher voltage ratings improve reliability and provide extra reserve for resistance to surges and temporary overloads. Rugged phenolic coating and high temperature wax impregnation give superior moisture resistance and physical strength.

1000 WVDC

Arco No.	Cap., pF	Tol., ±%	Size, In. A	Size, In. B	Net Each, Lots of 5-95 Box*	10-99	100-999	1000-9999
CCD-3R3	3.3	.5*	.290	.250	$0.15	$0.08	$0.047	$0.045
CCD-050	5	10	.290	.250	.13	.07	.037	.034
CCD-060	6	10	.290	.250	.15	.08	.047	.045
CCD-6R8	6.8	10	.290	.250	.15	.08	.047	.045
CCD-7R5	7.5	10	.290	.250	.15	.08	.047	.045
CCD-080	8	10	.290	.250	.13	.07	.037	.034
CCD-100	10	10	.290	.250	.13	.07	.037	.034
CCD-120	12	10	.290	.250	.13	.07	.037	.034
CCD-150	15	10	.290	.250	.13	.07	.037	.034
CCD-180	18	10	.290	.250	.13	.07	.037	.034
CCD-200	20	10	.290	.250	.13	.07	.037	.034
CCD-220	22	10	.290	.250	.13	.07	.037	.034
CCD-240	24	10	.290	.250	.13	.07	.037	.034
CCD-250	25	10	.290	.250	.13	.07	.037	.034
CCD-270	27	10	.290	.250	.13	.07	.037	.034
CCD-300	30	10	.290	.250	.13	.07	.037	.034
CCD-330	33	10	.290	.250	.13	.07	.037	.034
CCD-330M	33	20	.280	.250	.13	.07	.037	.034
CCD-390	39	10	.290	.250	.13	.07	.037	.034
CCD-470	47	10	.290	.250	.13	.07	.037	.034
CCD-500	50	10	.290	.250	.13	.07	.037	.034
CCD-510	51	10	.290	.250	.13	.07	.037	.034
CCD-560	56	10	.290	.250	.13	.07	.037	.034
CCD-680	68	10	.290	.250	.13	.07	.037	.034
CCD-750	75	10	.290	.250	.13	.07	.037	.034
CCD-820	82	10	.290	.250	.13	.07	.037	.034
CCD-910	91	10	.290	.250	.13	.07	.037	.034
CCD-101	100	10	.290	.250	.13	.07	.037	.034
CCD-121	120	10	.290	.250	.13	.07	.037	.034
CCD-131	130	10	.290	.250	.13	.07	.037	.034
CCD-151	150	10	.290	.250	.13	.07	.037	.034
CCD-181	180	10	.290	.250	.13	.07	.037	.034
CCD-201	200	10	.290	.250	.13	.07	.037	.034
CCD-221	220	10	.290	.250	.13	.07	.037	.034
CCD-241	240	10	.290	.250	.13	.07	.037	.034
CCD-251	250	10	.290	.250	.13	.07	.037	.034
CCD-271	270	10	.290	.250	.13	.07	.037	.034
CCD-301	300	10	.290	.250	.13	.07	.037	.034
CCD-331	330	10	.290	.250	.13	.07	.037	.034
CCD-351	350	10	.290	.250	.13	.07	.037	.034
CCD-361	360	10	.290	.250	.13	.07	.037	.034
CCD-391	390	10	.290	.250	.13	.07	.037	.034
CCD-401	400	10	.290	.250	.13	.07	.037	.034
CCD-471	470	10	.290	.250	.13	.07	.037	.034
CCD-501	500	10	.290	.250	.13	.07	.037	.034
CCD-511	510	10	.290	.250	.13	.07	.037	.034
CCD-561	560	10	.290	.250	.13	.07	.037	.034
CCD-601	600	10	.290	.250	.13	.07	.037	.034
CCD-681	680	10	.290	.250	.13	.07	.037	.034
CCD-751	750	10	.290	.250	.13	.07	.037	.034
CCD-801G	800	GMV	.290	.250	.13	.07	.037	.034
CCD-821	820	20	.290	.250	.13	.07	.037	.034
CCD-911	910	20	.290	.250	.13	.07	.037	.034
CCD-102	1000	20	.385	.250	.13	.07	.037	.034
CCD-102G	1000	GMV	.290	.250	.13	.07	.037	.034
CCD-122	1200	10	.385	.250	.15	.07	.037	.034
CCD-132	1300	10	.385	.250	.15	.07	.037	.034
CCD-152	1500	20	.385	.250	.15	.07	.037	.034
CCD-152G	1500	GMV	.290	.250	.13	.06	.034	.031
CCD-162	1600	20	.385	.250	.15	.07	.037	.034
CCD-182	1800	20	.385	.250	.15	.07	.037	.034
CCD-202G	2000	GMV	.385	.250	.13	.06	.034	.031
CCD-222G	2200	GMV	.385	.250	.13	.06	.034	.031
CCD-252G	2500	GMV	.385	.250	.13	.06	.034	.031
CCD-272G	2700	GMV	.385	.250	.13	.06	.034	.031
CCD-302G	3000	GMV	.385	.250	.13	.06	.034	.031
CCD-332G	3300	GMV	.590	.375	.16	.08	.059	.043
CCD-392G	3900	GMV	.590	.375	.16	.08	.059	.043
CCD-402G	4000	GMV	.590	.375	.16	.08	.059	.043
CCD-432G	4300	GMV	.590	.375	.16	.08	.059	.043
CCD-472	4700	20	.590	.375	.16	.08	.059	.043
CCD-502	5000	20	.590	.375	.16	.08	.059	.043
CCD-562G	5600	GMV	.590	.375	.16	.08	.059	.043
CCD-682G	6800	GMV	.590	.375	.16	.08	.059	.043
CCD-752G	7500	GMV	.590	.375	.16	.08	.059	.043
CCD-822G	8200	GMV	.690	.375	.17	.08	.084	.055
CCD-103	10000	20	.690	.375	.17	.08	.084	.055

*pF *Unit price listed for 5 units in plastic box.

50 WVDC ±20% TOLERANCE

Arco No.	Cap., μF	Dimensions, In. Dia.	Dimensions, In. Thk.	Dimensions, In. Lead Space	Net Each, Lots of* 5-95	100-999	1000-9999
TCD-103M	.010	.394	.156	.250	$0.21	$0.068	$0.052
TCD-153M	.015	.473	.156	.250	.21	.070	.054
TCD-223M	.022	.473	.156	.250	.21	.073	.056
TCD-333M	.033	.473	.156	.375	.23	.081	.062
TCD-473M	.047	.590	.156	.375	.32	.109	.084
TCD-503M	.050	.590	.156	.375	.35	.113	.087

50 WVDC, +80 −20% TOLERANCE

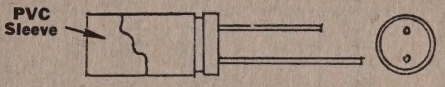
Arco No.	Cap., μF	Dimensions, In. Dia.	Dimensions, In. Thk.	Dimensions, In. Lead Space	Net Each, Lots of* 5-95	100-999	1000-9999
TCD-502Z	.005	.276	.156	.250	$0.14	$0.046	$0.029
TCD-103Z	.010	.315	.156	.250	.14	.047	.035
TCD-203Z	.020	.355	.156	.375	.14	.051	.037
TCD-253Z	.025	.473	.156	.375	.18	.062	.046
TCD-303Z	.030	.473	.156	.375	.21	.068	.049
TCD-503Z	.050	.473	.156	.375	.23	.078	.057
TCD-683Z	.068	.721	.171	.375	.46	.149	.102
TCD-104Z	.10	.721	.171	.375	.48	.152	.104

100 WVDC ±20% TOLERANCE

Arco No.	Cap., μF	Dimensions, In. Dia.	Dimensions, In. Thk.	Dimensions, In. Lead Space	Net Each, Lots of* 5-95	100-999	1000-9999
TCP-R005	.005	.315	.156	.250	$0.14	$0.074	$0.034
TCP-R01	.01	.395	.156	.250	.16	.058	.041
TCP-R02	.02	.475	.156	.250	.18	.060	.042
TCP-R025	.025	.530	.156	.250	.28	.089	.061
TCP-R03	.03	.590	.156	.250	.24	.088	.064
TCP-R05	.05	.750	.156	.375	.44	.14	.096
TCP-R1*	.1	1.0	.156	.375	.72	.228	.156

*Indicates +80%, −20% tolerance. *100-999 and 1000-9999, bulk of a value.

RADIAL LEAD MINIATURE ALUMINUM CAPACITORS



Ideal for both transistor and electronic tube circuits. **Operating Temperature:** −25° C to +85° C. **Tolerance:** Less than 5 μF, −0 +15%; 5 μF or over, −0 +100%. Leads can withstand up to four bends.

Arco Number*	Cap., μF	WVDC Range	Net Each, Lots of 1-90	Net Each, Lots of 100-990	Net Each, Lots of 1000-4490
RME-C-B-050	47†, 50	0–6.3	$0.171	$0.114	$0.088
RME-F-B-250	250	0–6.3	.233	.156	.120
RME-J-B-500	470†, 500	0–6.3	.284	.190	.146
RME-L-B-1000	1000	0–6.3	.414	.277	.213
RME-A-D-10	10	0–10	.160	.106	.084
RME-D-D-050	47†, 50	0–10	.181	.121	.093
RME-B-D-025	25	0–10	.160	.106	.084
RME-G-D-250	250	0–10	.243	.162	.125
RME-K-D-500	470†, 500	0–10	.317	.211	.164
RME-M-D-1000	1000	0–10	.459	.307	.237
RME-E-E-050	47†, 50	0–16	.197	.132	.101
RME-E-E-100	100	0–16	.233	.156	.120
RME-J-E-250	250	0–16	.284	.190	.146
RME-L-E-500	470†, 500	0–16	.420	.281	.217
RME-N-E-1000	1000	0–16	.594	.398	.306
RME-A-G-005	4.7†, 5	0–25	.160	.106	.084
RME-B-G-010	10	0–25	.171	.114	.088
RME-D-G-025	25	0–25	.197	.132	.101
RME-G-G-100	100	0–25	.275	.184	.141
RME-K-G-250	250	0–25	.388	.259	.200
RME-N-G-500	470†, 500	0–25	.552	.370	.285
RME-P-G-1000	1000	0–25	.853	.571	.439
RME-A-H-003	3, 3.3†	0–35	.160	.106	.084
RME-E-H-025	25	0–35	.197	.132	.101
RME-F-H-050	47†, 50	0–35	.258	.173	.133
RME-J-H-100	100	0–35	.378	.253	.194
RME-L-H-250	250	0–35	.465	.311	.240
RME-O-H-500	470†, 500	0–35	.853	.571	.439
RME-R-H-1000	1000	0–35	1.221	.817	.629
RME-A-J-001	1	0–50	.160	.106	.084
RME-A-J-002	2, 2.2†	0–50	.160	.106	.084
RME-B-J-003	3, 3.3†	0–50	.171	.114	.088
RME-B-J-005	4.7†, 5	0–50	.181	.121	.093
RME-D-J-010	10	0–50	.197	.132	.101
RME-F-J-025	25	0–50	.258	.173	.133
RME-H-J-050	47†, 50	0–50	.30	.201	.154
RME-K-J-100	100	0–50	.439	.294	.226
RME-N-J-250	250	0–50	.62	.415	.32
RME-R-J-500	470†, 500	0–50	1.266	.847	.652

*CASE SIZES

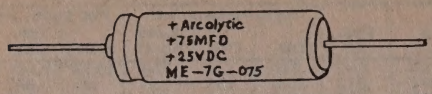
Case code indicated by letter after RME- (e.g., RME-**C**-B-050) and dimensions are shown in table below.

Code	Dimensions, Inches Dia.	Lgth.	Lead Space	Lead Dia.	AWG
A	.197	.433	.075 ± .020	.020	25
B	.236	.433	.100 ± .020	.020	25
C	.315	.433	.150 ± .025	.020	25
D	.315	.453	.150 ± .025	.020	25
E	.394	.492	.200 ± .025	.020	25
F	.394	.650	.200 ± .025	.020	25
G	.394	.748	.200 ± .025	.020	25
H	.512	.650	.200 ± .025	.020	25
J	.512	.807	.200 ± .025	.020	25
K	.512	.965	.200 ± .025	.020	25
L	.630	.965	.300 ± .030	.028	21
M	.630	1.165	.300 ± .030	.028	21
N	.630	1.378	.300 ± .030	.028	21
O	.709	1.378	.300 ± .030	.028	21
P	.709	1.555	.300 ± .030	.028	21
R	.709	1.625	.300 ± .030	.028	21

†New standard values in accordance with EIA, IEC and JIS specifications.

AXIAL LEAD MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

TYPE ME MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



Type ME electrolytic capacitors designed for transistorized circuitry featuring low voltages and compactness of structure. All welded construction provides increased ruggedness and resistance to environmental extremes. **Tolerance:** −10%, +100%. **Operating Temperature:** −30° C to +85° C. **Leads:** Axial 1¼" length minimum, #20 or #22 tinted copper depending on case size. All units are insulated with plastic sleeve permanently bonded to aluminum body.

Arco No.*	Cap., μF	WVDC	Net Each, Lots of 5-95 Boxed*	100-999*	1000-4999*	5000-9999*
ME1B001	1	6	$0.218	$0.145	$0.106	$0.085
ME1B002	2	6	.218	.145	.106	.085
ME1B003	3	6	.218	.145	.106	.085
ME1B004	4	6	.218	.145	.106	.085
ME1B005	5	6	.218	.145	.106	.085
ME1B006	6	6	.218	.145	.106	.085
ME1B008	8	6	.218	.145	.106	.085
ME1B010	10	6	.218	.145	.106	.085
ME2B015	15	6	.218	.145	.106	.085
ME2B020	20	6	.218	.145	.106	.085
ME2B025	25	6	.218	.145	.106	.085
ME2B030	30	6	.236	.157	.114	.092
ME2B035	35	6	.236	.157	.114	.092
ME2B040	40	6	.236	.157	.114	.092
ME2B050	50	6	.239	.159	.117	.093
ME2B060	60	6	.252	.168	.124	.098
ME3B075	75	6	.252	.168	.124	.098
ME3B100	100	6	.252	.168	.124	.098
ME6B125	125	6	.252	.168	.124	.098
ME6B150	150	6	.321	.214	.157	.125
ME6B175	175	6	.321	.214	.157	.125
ME6B200	200	6	.321	.214	.157	.125
ME6B250	250	6	.321	.214	.157	.125
ME8B300	300	6	.377	.251	.184	.146
ME8B400	400	6	.447	.298	.218	.177
ME8B500	500	6	.447	.298	.218	.177
MEB1000	1000	6	.557	.371	.271	.217
MEB1500	1500	6	.618	.412	.301	.241
MEB2000	2000	6	.782	.521	.38	.305
MEB2500	2500	6	.782	.521	.38	.305
MEB3000	3000	6	1.226	.817	.652	.477
MEB4000	4000	6	1.635	1.09	.798	.638
MEB5000	5000	6	1.635	1.09	.798	.638
MEB10000	10,000	6	2.61	1.74	1.271	1.017
ME1D001	1	12	$0.218	$0.145	$0.106	$0.850
ME1D002	2	12	.218	.145	.106	.085
ME1D003	3	12	.218	.145	.106	.085
ME1D004	4	12	.218	.145	.106	.085
ME1D005	5	12	.218	.145	.106	.085
ME1D006	6	12	.218	.145	.106	.085
ME1D008	8	12	.225	.15	.11	.088
ME2D010	10	12	.225	.15	.11	.088
ME2D015	15	12	.225	.15	.11	.088
ME2D020	20	12	.225	.15	.11	.088
ME2D025	25	12	.225	.15	.11	.088
ME3D030	30	12	.239	.159	.117	.093
ME3D035	35	12	.239	.159	.117	.093
ME3D040	40	12	.239	.159	.117	.093
ME3D050	50	12	.273	.182	.133	.106
ME4D075	75	12	.327	.218	.16	.128
ME4D100	100	12	.327	.218	.16	.128
ME6D150	150	12	.327	.218	.16	.128
ME6D200	200	12	.393	.262	.192	.153
ME8D250	250	12	.393	.262	.192	.153
MED500	500	12	.567	.378	.277	.221
MED600	600	12	.567	.378	.277	.221
MED1000	1000	12	.836	.557	.407	.326
MED1500	1500	12	1.25	.833	.609	.487
MED2000	2000	12	1.25	.833	.609	.487
MED2500	2500	12	1.25	.833	.609	.487
MED3000	3000	12	1.938	1.292	.944	.755
MED4000	4000	12	1.988	1.325	.968	.774
MED5000	5000	12	2.124	1.416	1.035	.827
ME1E001	1	15	$0.218	$0.145	$0.106	$0.085
ME1E002	2	15	.218	.145	.106	.085
ME1E003	3	15	.218	.145	.106	.085
ME1E004	4	15	.218	.145	.106	.085
ME1E005	5	15	.218	.145	.106	.085
ME1E006	6	15	.218	.145	.106	.085
ME1E008	8	15	.225	.15	.11	.088
ME1E010	10	15	.225	.15	.11	.088
ME2E015	15	15	.225	.15	.11	.088
ME2E020	20	15	.225	.15	.11	.088
ME2E025	25	15	.225	.15	.11	.088
ME3E030	30	15	.239	.159	.117	.093
ME3E035	35	15	.239	.159	.117	.093
ME3E040	40	15	.239	.159	.117	.093
ME3E050	50	15	.273	.182	.133	.106
ME4E075	75	15	.327	.218	.16	.128
ME4E100	100	15	.327	.218	.16	.128
ME6E150	150	15	.327	.218	.16	.128
ME6E200	200	15	.393	.262	.192	.153
ME8E250	250	15	.393	.262	.192	.153
MEE500	500	15	.567	.378	.277	.221
MEE600	600	15	.567	.378	.277	.221
MEE1000	1000	15	.836	.557	.407	.326
MEE1500	1500	15	.885	.681	.497	.398
MEE2000	2000	15	.936	.814	.596	.476
MEE2500	2500	15	.936	.814	.596	.476
MEE3000	3000	15	1.448	.965	.705	.564
MEE4000	4000	15	2.31	1.54	1.125	.90
MEE5000	5000	15	2.676	1.784	1.303	1.043
ME1G001	1	25	$0.218	$0.145	$0.106	$0.085
ME1G002	2	25	.218	.145	.106	.085
ME1G003	3	25	.218	.145	.106	.085
ME1G004	4	25	.236	.157	.114	.092
ME1G005	5	25	.236	.157	.114	.092
ME2G006	6	25	.236	.157	.114	.092
ME2G008	8	25	.257	.171	.125	.10
ME2G010	10	25	.257	.171	.125	.10
ME3G015	15	25	.276	.184	.134	.108
ME3G020	20	25	.276	.184	.134	.108
ME3G025	25	25	.276	.184	.134	.108
ME3G030	30	25	.339	.212	.154	.124
ME4G035	35	25	.339	.212	.154	.124
ME4G040	40	25	.339	.212	.154	.124
ME4G050	50	25	.338	.225	.165	.132
ME7G075	75	25	.444	.296	.217	.173
ME7G100	100	25	.444	.296	.217	.173
MEG150	150	25	.567	.378	.277	.221
MEG200	200	25	.567	.378	.277	.221
MEG250	250	25	.567	.378	.277	.221
MEG500	500	25	.864	.576	.42	.336
MEG600	600	25	.864	.576	.42	.336
MEG1000	1000	25	1.301	.867	.633	.507
MEG1500	1500	25	2.075	1.383	1.011	.809
MEG2000	2000	25	2.075	1.383	1.011	.809
MEG2500	2500	25	2.075	1.383	1.011	.809
MEG3000	3000	25	2.507	1.671	1.102	.976
MEG4000	4000	25	2.604	1.736	1.333	1.068
MEG5000	5000	25	3.024	2.016	1.551	1.24
ME1J001	1	50	$0.236	$0.157	$0.114	$0.092
ME1J002	2	50	.236	.157	.114	.092
ME2J003	3	50	.257	.171	.125	.10
ME2J004	4	50	.273	.182	.133	.106
ME2J005	5	50	.273	.182	.133	.106
ME2J006	6	50	.273	.182	.133	.106
ME3J008	8	50	.294	.196	.144	.114
ME3J010	10	50	.294	.196	.144	.114
ME4J015	15	50	.365	.243	.178	.142
ME4J020	20	50	.365	.243	.178	.142
ME4J025	25	50	.365	.243	.178	.142
ME4J030	30	50	.365	.243	.178	.142
ME7J035	35	50	.365	.243	.178	.142
ME7J040	40	50	.444	.296	.217	.173
ME7J050	50	50	.444	.296	.217	.173
MEJ075	75	50	.509	.339	.247	.198
MEJ100	100	50	.509	.339	.247	.198
MEJ150	150	50	.836	.557	.407	.326
MEJ200	200	50	.836	.557	.407	.326
MEJ250	250	50	.836	.557	.407	.326
MEJ500	500	50	1.097	.844	.617	.493
MEJ1000	1000	50	2.256	1.54	1.125	.90
MEJ1500	1500	50	2.568	1.712	1.317	1.053
MEJ2000	2000	50	2.889	1.926	1.185	1.185
ME2M001	1	100	$0.308	$0.205	$0.15	$0.12
ME2M002	2	100	.308	.205	.15	.12
ME2M003	3	100	.308	.205	.15	.12
ME3M004	4	100	.327	.218	.16	.128
ME3M005	5	100	.327	.218	.16	.128
ME4M006	6	100	.345	.23	.168	.134
ME4M008	8	100	.356	.237	.173	.138
ME4M010	10	100	.372	.248	.181	.145
ME7M015	15	100	.372	.248	.181	.145
ME7M020	20	100	.399	.266	.194	.156
ME7M025	25	100	.399	.266	.194	.156
MEM50	50	100	.765	.51	.372	.298
MEM75	75	100	1.146	.764	.559	.447
MEM100	100	100	1.202	.801	.585	.468
MEM150	150	100	1.748	1.165	.851	.681
MEM200	200	100	1.911	1.274	.931	.745
MEM250	250	100	1.294	1.529	1.117	.894
MEM500	500	100	2.568	1.712	1.317	1.052
ME3N001	1	150	$0.266	$0.177	$0.13	$0.104
ME3N002	2	150	.266	.177	.13	.104
ME3N003	3	150	.266	.177	.13	.104
ME3N004	4	150	.266	.177	.13	.104
ME3N005	5	150	.266	.177	.13	.104
ME3N006	6	150	.266	.177	.13	.104
ME4N008	8	150	.363	.242	.177	.141
ME4N010	10	150	.363	.242	.177	.141
ME4N012	12	150	.363	.242	.177	.141
ME7N015	15	150	.389	.259	.19	.152
ME8N020	20	150	.402	.268	.197	.157
ME3R001	1	250	$0.228	$0.152	$0.112	$0.089
ME3R002	2	250	.273	.182	.133	.106
ME6R005	5	250	.335	.223	.164	.13
ME3T001	1	350	$0.266	$0.177	$0.13	$0.104
ME5T002	2	350	.294	.196	.144	.114

*CASE SIZES

Case size indicated by digit after ME (e.g., ME1B001).

Code	Size, Inches Dia.	Size, Inches Length	Code	Size, Inches Dia.	Size, Inches Length
1	.219–.250	.512–.563	5	.406	.938
2	.250–.281	.625–.668	6	.344–.406	.750–1.063
3	.344–.406	.705–.750	7	.406–.492	.988–1.250
4	.406–.492	.406–.512	8	.406–.512	1.188–1.406

*100–499, 500–999 and 1000–9999 in bulk packs.

Arco Film Capacitors

TYPE DP MYLAR® AND MYLAR PAPER CAPACITORS

Designed for use in a variety of circuits ranging from TV bypass to critical industrial applications requiring stringent electrical and environmental characteristics. Non-inductively wound and vacuum dipped to obtain solid impregnation and rugged moisture-resistant coat. Special winding design provides insulation resistance comparable to competitive polyester film units. High reliability maintained in constant operation at 125° C at full rated voltage (derating required at higher temperatures). Miniaturized for transistor circuitry yet compare favorably in price with commercial general purpose units. Crimped radial leads to facilitate use in printed circuits. Leads are tinned copper clad steel. #20 gauge and 1⅝" lg. min. below the crimp. Standard tolerance, ±10%; ±5%, 2% and 1% available. ®Reg. DuPont TM.

100 WVDC

Pure Mylar dielectric; derate 1%/°C over 85° C.

Arco No. 1DP-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
1-502	.005	$0.20	$0.14	$0.12
1-602	.006	.20	.14	.12
1-682	.0068	.20	.14	.12
1-752	.0075	.20	.14	.12
1-103	.01	.20	.14	.12
1-203	.02	.20	.14	.12
1-223	.022	.20	.14	.12
1-253	.025	.20	.14	.12
1-303	.03	.20	.14	.12
1-333	.033	.22	.15	.13
1-403	.04	.22	.15	.13
2-473	.047	.24	.17	.14
2-503	.05	.24	.17	.14
2-563	.056	.24	.17	.14
2-683	.068	.25	.18	.15
2-753	.075	.25	.18	.15
2-104	.1	.26	.19	.16
3-154	.15	.31	.23	.18
3-204	.2	.34	.25	.20
3-224	.22	.34	.25	.20
3-254	.25	.36	.26	.21
3-334	.33	.40	.28	.22
4-474	.47	.44	.30	.25
4-504	.5	.47	.33	.27
5-685	.68	.49	.35	.30
5-105	1.0	.60	.44	.38

200 WVDC

Arco No. 2DP-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
3-104	.1	$0.31	$0.22	$0.17
3-154	.15	.38	.26	.20
4-204	.2	.40	.29	.22
4-224	.22	.44	.30	.23
4-254	.25	.46	.31	.24
5-334	.33	.52	.36	.28
5-474	.47	.62	.44	.34
5-504	.5	.64	.46	.35

400 WVDC

Arco No. 4DP-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
1-103	.01	$0.22	$0.16	$0.12
1-153	.015	.22	.16	.12
2-203	.02	.22	.16	.12
2-223	.022	.26	.18	.14
2-253	.025	.26	.18	.14
2-303	.03	.26	.18	.14
2-333	.033	.26	.18	.14
3-403	.04	.29	.20	.15
3-473	.047	.29	.20	.15
3-563	.056	.31	.22	.17
3-683	.068	.31	.22	.17
3-753	.075	.31	.22	.17
3-104	.1	.31	.22	.17
4-154	.15	.35	.26	.20
5-204	.2	.46	.31	.24
5-224	.22	.48	.34	.26
5-254	.25	.48	.34	.26
5-274	.27	.49	.35	.27
5-334	.33	.55	.39	.30
5-474	.47	.64	.46	.35
6-504	.5	.72	.51	.39

DIMENSIONS FOR TYPE DP CAPACITORS

Type	L. x H. x W. Inches*
DP-1	13/32 x 5/8 x 3/8
DP-2	13/32 x 11/16 x 7/16
DP-3	1 9/32 x 3/4 x 17/32
DP-4	1 3/8 x 15/16 x 21/32
DP-5	1 9/16 x 1 x 3/4
DP-6	2 3/8 x 1 3/16 x 15/16

*Include highest capacitance values in each size. Since dipped unit size varies with size of winding, lower capacities are smaller.

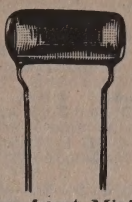
600 WVDC

Arco No. 6DP-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
1-102	.001	$0.20	$0.14	$0.12
1-122	.0012	.20	.14	.12
1-152	.0015	.20	.14	.12
1-202	.002	.20	.14	.12
1-222	.0022	.20	.14	.12
1-252	.0025	.20	.14	.12
1-272	.0027	.20	.14	.12
1-302	.003	.20	.14	.12
1-332	.0033	.20	.14	.12
1-392	.0039	.20	.14	.12
1-402	.004	.20	.14	.12
1-472	.0047	.20	.14	.12
1-502	.005	.20	.14	.12
1-562	.0056	.20	.14	.12
1-602	.006	.20	.14	.12
1-682	.0068	.20	.14	.12
2-752	.0075	.20	.14	.12
2-802	.008	.20	.14	.12
2-822	.0082	.20	.14	.12
2-103	.01	.20	.14	.12
2-123	.012	.23	.17	.14
2-153	.015	.23	.17	.14
2-183	.018	.23	.17	.14
2-203	.02	.23	.17	.14
2-223	.022	.23	.17	.14
2-243	.024	.25	.17	.14
2-253	.025	.25	.17	.14
3-273	.027	.25	.17	.14
3-303	.03	.25	.17	.14
3-333	.033	.25	.17	.14
3-363	.036	.26	.18	.15
3-393	.039	.26	.18	.15
3-403	.04	.26	.18	.15
3-473	.047	.26	.18	.15
3-503	.05	.28	.19	.16
3-563	.056	.28	.19	.16
4-683	.068	.31	.22	.18
4-753	.075	.34	.23	.19
4-823	.082	.34	.23	.19
4-104	.1	.35	.25	.21
5-154	.15	.42	.30	.25
5-204	.2	.49	.35	.29
5-224	.22	.49	.35	.29
5-254	.25	.49	.35	.29
6-334	.33	.67	.48	.40
8-474	.47	.91	.65	.54
8-504	.5	.92	.66	.55

1600 WVDC

Arco No. 16DP-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
2-102	.001	$0.22	$0.17	$0.14
2-152	.0015	.22	.17	.14
2-182	.0018	.22	.17	.14
2-202	.002	.23	.18	.15
2-222	.0022	.23	.18	.15
2-252	.0025	.23	.18	.15
2-272	.0027	.23	.18	.15
2-302	.003	.23	.18	.15
2-332	.0033	.23	.18	.15
2-239	.0039	.23	.18	.15
2-402	.004	.23	.18	.15
2-472	.0047	.28	.19	.16
2-502	.005	.28	.19	.16
3-602	.006	.28	.19	.16
3-682	.0068	.30	.20	.17
3-702	.007	.30	.20	.17
3-752	.0075	.30	.20	.17
3-802	.008	.30	.20	.17
3-822	.0082	.30	.20	.17
3-103	.01	.36	.25	.21
4-153	.015	.36	.25	.21
4-183	.018	.36	.25	.21
4-203	.02	.40	.29	.24
5-223	.022	.41	.30	.25
5-253	.025	.44	.31	.26
5-303	.03	.44	.31	.26
5-333	.033	.48	.32	.27
5-403	.04	.48	.32	.27
5-473	.047	.49	.36	.30
5-503	.05	.49	.36	.30

PRECISION DIPPED MYLAR* TUBULARS



Precision dipped tubular capacitors that combine missile and computer quality with radio-TV cost. Type MD (100 WVDC) have Mylar dielectric; Type MPD (200, 400 and 600 WVDC) have Mylar-paper dielectric. Non-inductively wound and vacuum dipped to obtain solid impregnation and a rugged, moisture-proof coat. Miniaturized for transistor circuitry. Offer high reliability in operation at 125° C without derating. Case dimensions similar to the Elmenco Type DP capacitors described elsewhere. **Tolerance:** ±10%; available in ±5%, ±2% and ±1%. *Registered DuPont trademark.

TYPE 1MD—100 WVDC

Arco No. 1MD-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
1-502	.005	$0.20	$0.14	$0.12
1-512	.0051	.20	.14	.12
1-562	.0056	.20	.14	.12
1-602	.006	.20	.14	.12
1-622	.0062	.20	.14	.12
1-682	.0068	.20	.14	.12
1-752	.0075	.20	.14	.12
1-822	.0082	.20	.14	.12
1-912	.0091	.20	.14	.12
1-103	.01	.20	.14	.12
1-123	.012	.20	.14	.12
1-153	.015	.20	.14	.12
1-183	.018	.20	.14	.12
1-203	.02	.20	.14	.12
1-223	.022	.20	.14	.12
1-243	.024	.20	.14	.12
1-253	.025	.20	.14	.12
1-273	.027	.20	.14	.12
1-303	.03	.20	.14	.12
1-333	.033	.20	.14	.12
1-363	.036	.22	.15	.13
1-393	.039	.22	.15	.13
1-403	.04	.22	.15	.13
2-433	.043	.22	.15	.13
2-473	.047	.24	.17	.14
2-503	.05	.24	.17	.14
2-563	.056	.24	.17	.14
2-623	.062	.24	.17	.14
2-683	.068	.25	.18	.15
2-753	.075	.25	.18	.15
2-823	.082	.26	.19	.16
2-913	.091	.26	.19	.16
2-104	.1	.26	.19	.16
3-124	.12	.26	.19	.16
3-154	.15	.31	.23	.18
3-184	.18	.31	.23	.18
3-204	.2	.34	.25	.20
3-224	.22	.34	.25	.20
3-244	.24	.36	.26	.21
3-254	.25	.36	.26	.21
3-274	.27	.36	.26	.21
3-304	.3	.40	.28	.22
4-334	.33	.40	.28	.22
4-394	.39	.44	.30	.25
4-474	.47	.44	.30	.25
4-504	.5	.47	.33	.27
4-564	.56	.47	.33	.27
5-624	.62	.49	.35	.30
5-684	.68	.49	.35	.30
5-754	.75	.54	.38	.33
5-824	.82	.54	.38	.33
5-105	1.0	.60	.44	.38

TYPE 2MPD—200 WVDC

Arco No. 2MPD-	Cap., μF	Net Each, Lots of 5-95	100-499	500-999
3-104	.1	$0.31	$0.22	$0.17
3-124	.12	.34	.23	.18
3-154	.15	.38	.26	.20
3-184	.18	.39	.27	.21
4-204	.2	.40	.29	.22
4-224	.22	.44	.30	.23
4-254	.25	.46	.31	.24
4-274	.27	.47	.34	.26
5-304	.3	.52	.36	.28
5-334	.33	.52	.36	.28
5-394	.39	.57	.40	.31
5-474	.47	.62	.44	.34
5-504	.5	.64	.46	.35

ASK FOR STOCK VALUES AND PRICES ON 400 AND 600 WVDC UNITS

Arco Dur-Mica Capacitors

TYPE ADM DIPPED SILVERED MICA CAPACITORS

Highly reliable, compact silvered mica capacitors coated for maximum protection against moisture and temperature extremes. Meet or exceed MIL-C-5D and EIA standards for fixed mica capacitors. **Operating Temperature Range:** −55° C to +150° C. **Type DM:** Per MIL-C-5D. **Type SCDM:** Single coat of resin; thinner than regular DM-10's and DM-15's. To order, use prefix **SC. Tolerances Available:** ±10%, ±5%, ±2%, ±1%, ±½%, ±0.5 pF and ±1.0 pF. Prices are for ±5% tolerance (suffix **J**) unless otherwise noted. **Working Voltage:** As shown; MIL-C-5D indicated by sixth character in MIL number (e.g., CM05CD060D03): A=100, C=300, and D=500 WVDC.

TYPE ADM-5—50 WVDC

Arco Number ADM-	Cap., pF	Net Each, Lots of 10-490	500-990	1000-1990
5EY680	68	$0.20	$0.18	$0.17
5EY750	75	.21	.19	.17
5EY820	82	.21	.19	.17
5FY910	91	.22	.20	.18
5FY101	100	.23	.21	.19
5FY111	110	.24	.22	.20
5FY121	120	.25	.23	.21
5FY131	130	.25	.23	.21
5FY151	150	.28	.25	.23
5FY161	160	.29	.26	.24
5FY181	180	.33	.30	.26
5FY201	200	.35	.32	.29
5FY221	220	.37	.34	.31
5FY241	240	.40	.36	.33
5FY251	250	.41	.37	.34
5FY271	270	.43	.39	.35
5FY301	300	.47	.43	.39
5FY331	330	.51	.46	.42
5FY361	360	.55	.50	.44
5FY391	390	.58	.53	.48

TYPE ADM-5—300 WVDC

Arco Number ADM-	Cap., pF	Net Each, Lots of 10-490	500-990	1000-1990
5CC010A*	1	$0.23	$0.21	$0.19
5CC020A*	2	.23	.21	.19
5CC030A*	3	.23	.21	.19
5CC040A*	4	.23	.21	.19
5CC050A*	5	.23	.21	.19
5CC060A*	6	.24	.22	.20
5CC070A*	7	.24	.22	.20
5CC080A*	8	.24	.22	.20
5CC100J	10	.28	.25	.23
5CC120J	12	.25	.23	.21
5CC150J	15	.25	.23	.21
5CC180J	18	.25	.23	.21
5CC200J	20	.17	.15	.14
5CC220J	22	.19	.17	.15
5CC240J	24	.19	.17	.15
5EC270J	27	.19	.17	.15
5EC300J	30	.19	.17	.15
5EC330J	33	.20	.18	.15
5EC360J	36	.21	.19	.17
5EC390J	39	.21	.19	.17
5EC430J	43	.21	.19	.17
5EC470J	47	.21	.19	.17
5EC500J	50	.21	.19	.17
5EC510J	51	.22	.20	.18
5EC560J	56	.23	.21	.19
5EC620J	62	.24	.22	.20
5EC680J	68	.25	.23	.21
5EC750J	75	.25	.23	.21
5EC820J	82	.28	.25	.23
5FC910J	91	.31	.28	.25
5FC101J	100	.32	.29	.26
5FC111J	110	.34	.31	.28
5FC121J	120	.36	.33	.30
5FA131J†	130	.31	.28	.25
5FA151J†	150	.34	.31	.28
5FA161J†	160	.35	.32	.29
5FA181J†	180	.39	.35	.32
5FA201J†	200	.43	.39	.34

TYPE ADM-10—500 WVDC

(SCDM-10 values and prices the same.) **C** characteristic 1–18 pF; **E** characteristic 20–82 pF; **F** characteristic 91 pF and up.

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-1990
10-101D‡	CM04CD010D03‡	1	$0.18	$0.17	$0.15	$0.140
10-020D‡		2	.18	.17	.15	.140
10-030D‡		3	.18	.17	.15	.140
10-050D‡	CM04CD050D03‡	5	.18	.17	.15	.140
10-100J	CM04CD100J03	10	.18	.17	.15	.140
10-120J	CM04CD120J03	12	.19	.17	.15	.143
10-150J	CM04CD150J03	15	.19	.17	.15	.143
10-180J	CM04CD180J03	18	.19	.17	.15	.143
10-200J	CM04ED200J03	20	.14	.13	.12	.110
10-220J	CM04ED220J03	22	.14	.13	.12	.110
10-240J	CM04ED240J03	24	.14	.13	.12	.110
10-270J	CM04ED270J03	27	.14	.13	.12	.110
10-300J	CM04ED300J03	30	.14	.13	.12	.110
10-330J	CM04ED330J03	33	.14	.13	.12	.110
10-360J	CM04ED360J03	36	.15	.14	.13	.121
10-390J	CM04ED390J03	39	.15	.14	.13	.121

*Tolerance, ±1 pF. †100 WVDC. ‡Tolerance, ±0.5 pF. §300 WVDC.

TYPE ADM-10—500 WVDC (CONT'D)

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-1990
10-430J	CM04ED430J03	43	$0.15	$0.14	$0.13	$0.121
10-470J	CM04ED470J03	47	.15	.14	.13	.121
10-500J		50	.14	.13	.12	.110
10-501J	CM04ED510J03	51	.15	.14	.13	.121
10-560J	CM04ED560J03	56	.15	.14	.13	.121
10-620J	CM04ED620J03	62	.15	.14	.13	.121
10-680J	CM04ED680J03	68	.17	.15	.13	.121
10-750J	CM04ED750J03	75	.17	.15	.13	.121
10-820J	CM04ED820J03	82	.15	.14	.13	.132
10-910J	CM04FD910J03	91	.17	.15	.14	.132
10-101J	CM04FD101J03	100	.17	.15	.14	.132
10-111J	CM04FD111J03	110	.17	.15	.14	.132
10-121J	CM04FD121J03	120	.18	.17	.15	.143
10-131J	CM04FD131J03	130	.17	.15	.14	.132
10-151J	CM04FD151J03	150	.18	.17	.15	.143
10-161J	CM04FD161J03	160	.19	.18	.17	.149
10-181J	CM04FD181J03	180	.21	.19	.18	.161
10-201J	CM04FD201J03	200	.22	.20	.19	.173
10-221J	CM04FD221J03	220	.23	.21	.20	.179
10-241J	CM04FD241J03	240	.24	.22	.21	.191
10-251J		250	.24	.22	.21	.188
10-271J§	CM04FC271J03§	270	.23	.21	.20	.184
10-301J§	CM04FC301J03§	300	.25	.23	.22	.201
10-331J†	CM04FA331J03†	330	.24	.22	.21	.191
10-361J†	CM04FA361J03†	360	.25	.23	.22	.201
10-391J†	CM04FA391J03†	390	.28	.25	.23	.216

TYPE ADM-15—500 WVDC

(SCDM-15 values and prices are the same.)

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-1990
15-010D‡	CM05CD010D03‡	1	$0.14	$0.13	$0.12	$0.110
15-020D‡		2	.14	.13	.12	.110
15-030D‡		3	.14	.13	.12	.110
15-040D‡		4	.14	.13	.12	.110
15-050D‡	CM05CD050D03‡	5	.14	.13	.12	.110
15-060D‡	CM05CD060D03‡	6	.14	.13	.12	.110
15-070D‡	CM05CD070D03‡	7	.14	.13	.12	.110
15-080D‡	CM05CD080D03‡	8	.14	.13	.12	.110
15-100J	CM05CD100J03	10	.14	.13	.12	.110
15-120J	CM05CD120J03	12	.13	.12	.11	.100
15-150J	CM05CD150J03	15	1.3	.12	.11	.100
15-180J	CM05CD180J03	18	.13	.12	.11	.100
15-200J	CM05ED200J03	20	.12	.11	.10	.090
15-220J	CM05ED220J03	22	.12	.11	.10	.090
15-240J	CM05ED240J03	24	.12	.11	.10	.090
15-270J	CM05ED270J03	27	.12	.11	.10	.090
15-300J	CM05ED300J03	30	.12	.11	.10	.090
15-330J	CM05ED330J03	33	.12	.11	.10	.090
15-360J	CM05ED360J03	36	.12	.11	.10	.090
15-390J	CM05ED390J03	39	.12	.11	.10	.090
15-430J	CM05ED430J03	43	.12	.11	.10	.090
15-470J	CM05ED470J03	47	.12	.11	.10	.090
15-500J		50	.12	.11	.10	.090
15-510J	CM05ED510J03	51	.12	.11	.10	.090
15-560J	CM05ED560J03	56	.12	.11	.10	.090
15-620J	CM05ED620J03	62	.12	.11	.10	.090
15-680J	CM05ED680J03	68	.12	.11	.10	.090
15-750J	CM05ED750J03	75	.12	.11	.10	.090
15-820J	CM05ED820J03	82	.12	.11	.10	.090
15-910J	CM05FD910J03	91	.12	.11	.10	.090
15-101J	CM05FD101J03	100	.12	.11	.10	.090
15-111J	CM05FD111J03	110	.12	.11	.10	.090
15-121J	CM05FD121J03	120	.12	.11	.10	.090
15-131J	CM05FD131J03	130	.13	.12	.11	.100
15-151J	CM05FD151J03	150	.13	.12	.11	.100
15-161J	CM05FD161J03	160	.13	.12	.11	.100
15-181J	CM05FD181J03	180	.13	.12	.11	.106
15-201J	CM05FD201J03	200	.13	.12	.11	.106
15-221J	CM05FD221J03	220	.14	.13	.12	.112
15-241J	CM05FD241J03	240	.15	.14	.13	.120
15-251J		250	.15	.14	.13	.121
15-271J	CM05FD271J03	270	.15	.14	.13	.125
15-301J	CM05FD301J03	300	.16	.15	.14	.132
15-331J	CM05FD331J03	330	.18	.16	.15	.146
15-361J	CM05FD361J03	360	.18	.17	.16	.152
15-391J	CM05FD391J03	390	.19	.17	.16	.158
15-431J		430	.20	.18	.17	.164
15-471J		470	.21	.19	.18	.168
15-501J		500	.21	.19	.18	.175
15-511J		510	.22	.20	.19	.182
15-561J§		560	.22	.20	.19	.183
15-621J§		620	.24	.21	.20	.198
15-681J§		680	.26	.23	.22	.215
15-751J§		750	.28	.25	.23	.228
15-821J§		820	.30	.27	.26	.244
15-911J†		910	.26	.23	.22	.215
15-102J†		1000	.28	.25	.24	.233
15-112J†		1100	.34	.30	.29	.280
15-122J†		1200	.36	.33	.31	.300

TYPE ADM-19—500 WVDC

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-1990
19-101J		100	$0.14	$0.14	$0.12	$0.11
19-111J		110	.14	.14	.12	.11
19-121J		120	.14	.14	.12	.11
19-131J		130	.14	.14	.12	.11
19-151J		150	.14	.14	.12	.11
19-161J		160	.14	.14	.12	.11
19-181J		180	.14	.14	.12	.11
19-201J		200	.14	.14	.12	.11
19-221J		230	.14	.14	.12	.11

(CONTINUED ON FOLLOWING PAGE)

DIPPED MICA CAPACITORS (CONT'D)

TYPE ADM-19—500 WVDC (CONT'D)

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	100-1990
19-241J		240	$0.14	$0.14	$0.12	$0.11
19-251J		250	.14	.14	.12	.11
19-271J		270	.16	.16	.14	.13
19-301J		300	.16	.16	.14	.13
19-331J		330	.16	.16	.14	.13
19-361J		360	.17	.17	.15	.14
19-391J		390	.17	.17	.15	.14
19-431J	CM06FD431J03	430	.17	.17	.15	.14
19-471J	CM06FD471J03	470	.19	.19	.17	.15
19-501J		500	.19	.19	.17	.15
19-511J	CM06FD511J03	510	.18	.18	.16	.15
19-561J	CM06FD561J03	560	.18	.18	.16	.15
19-621J	CM06FD621J03	620	.21	.21	.19	.17
19-681J	CM06FD681J03	680	.21	.21	.19	.17
19-751J	CM06FD751J03	750	.23	.23	.20	.19
19-821J	CM06FD821J03	820	.24	.24	.21	.20
19-911J	CM06FD911J03	910	.24	.24	.21	.20
19-102J	CM06FD102J03	1000	.24	.24	.21	.20
19-112J	CM06FD112J03	1100	.28	.28	.25	.23
19-122J	CM06FD122J03	1200	.29	.29	.26	.24
19-132J	CM06FD132J03	1300	.32	.32	.28	.26
19-152J	CM06FD152J03	1500	.35	.35	.31	.30
19-162J	CM06FD162J03	1600	.35	.35	.31	.30
19-182J	CM06FD182J03	1800	.35	.35	.33	.32
19-202J	CM06FD202J03	2000	.41	.41	.36	.34
19-222J	CM06FD222J03	2200	.45	.45	.40	.37
19-242J	CM06FD242J03	2400	.46	.46	.41	.39
19-252J		2500	.48	.48	.43	.41
19-272J	CM06FD272J03	2700	.52	.52	.46	.44
19-302J	CM06FD302J03	3000	.57	.57	.51	.47
19-332J	CM06FD332J03	3300	.61	.61	.54	.51
19-362J	CM06FD362J03	3600	.65	.65	.58	.55
19-392J	CM06FD392J03	3900	.70	.70	.62	.57
19-432J	CM06FD432J03	4300	.77	.77	.68	.62
19-472J	CM06FD472J03	4700	.82	.82	.73	.66
19-502J		5000	.87	.87	.77	.72
19-512J		5100	.89	.89	.79	.73
19-562J*		5600	.84	.84	.75	.68
19-622J*		6200	.90	.90	.80	.74
19-682J†		6800	.81	.81	.72	.66
19-752J†		7500	.89	.89	.79	.73
19-822J†		8200	.97	.97	.86	.79

*300 WVDC. †100 WVDC. **Note:** Values listed in DM-30 and -42 cases are "F" characteristic.

TYPE ADM-30—500 WVDC

Arco Number ADM-	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-4990
30-432J		4300	$0.66	$0.66	$0.55	*
30-472J		4700	.72	.72	.60	*
30-502J		5000	.74	.74	.62	*
30-512J	CM07FD512J03	5100	.74	.74	.62	*
30-562J	CM07FD562J03	5600	.80	.80	.67	*
30-622J	CM07FD622J03	6200	.86	.86	.72	*
30-682J	CM07FD682J03	6800	.96	.96	.80	*
30-752J	CM07FD752J03	7500	1.02	1.02	.85	*
30-822J	CM07FD822J03	8200	1.10	1.10	.92	*
30-912J	CM07FD912J03	9100	1.20	1.20	1.00	*
30-103J	CM07FD013J03	10000	1.32	1.32	1.10	*
30-113J	CM07FD113J03	11000	1.42	1.42	1.18	*
30-123J	CM07FD123J03	12000	1.54	1.54	1.28	*
30-133J	CM07FD133J03	13000	1.66	1.66	1.38	*
30-153J	CM07FD153J03	15000	1.87	1.87	1.56	*
30-163J	CM07FD163J03	16000	1.99	1.99	1.66	*
30-183J	CM07FD183J03	18000	2.21	2.21	1.84	*
30-203J	CM07FD203J03	20000	2.45	2.45	2.04	*
30-223J*		22000	2.26	2.26	1.86	*
30-243J*		24000	2.45	2.45	2.04	*
30-253J*		25000	2.57	2.57	2.14	*
30-273J*		27000	2.75	2.75	2.29	*
30-303J*		30000	3.02	3.02	2.52	*
30-333J†		33000	2.68	2.68	2.23	*
30-363J†		36000	2.90	2.90	2.42	*

*Prices on request.

TYPE ADM-42—500 WVDC

42-203J		20000	
42-223J	CM08FD223J03	22000	
42-243J	CM08FD243J03	24000	
42-253J		25000	
42-273J	CM08FD273J03	27000	
42-303J	CM08FD303J03	30000	
42-333J	CM08FD333J03	33000	Prices
42-363J	CM08FD363J03	36000	Available
42-393J	CM08FD393J03	39000	on
42-433J	CM08FD433J03	43000	Request
42-473J	CM08FD473J03	47000	
42-503J		50000	
42-513J	CM08FD513J03	51000	
42-563J*	CM08FC563J03*	56000	
42-623J*	CM08FC623J03*	62000	
42-683J*	CM08FC683J03*	68000	
42-753J†	CM08FA753J03†	75000	
42-823J†	CM08FA823J03†	82000	

TRIMMER AND PADDER CAPACITORS

TRIMMERS

All types 175 WVDC, 350 VDCT.

Type 40: Miniature, ⅜" x ⅛". **Type 42:** Midget, ⅜" x ¾". **Type 46:** Standard, ¾" x ⅝". India ruby mica. Ceramic base.

Note: Type 46 trimmer assembly with mtg. bracket and adjusting shaft for ease of tuning is also available. Add prefix **"S"** to trimmer number; prices on request. Type 40, 42 and 46 also available as printed circuit trimmers. Add prefix **"PC"** to trimmer number; prices available on request.

PADDERS

Type 30, 30-M: ⅞" x 15/16". "30" is 250 WVDC, 500 VDCT; "30-M", 500 WVDC, 1000 VDCT.

Note: Type 30 (300 series) or Type 30-M (300-M series) padders are available with special adjusting screw to accommodate a tuning knob. Add prefix **"L"** to padder number. Prices available on request.

TYPE 40, 42, 46 TRIMMERS (FIG. A)

Arco No.	No. of Plates	Guar. Cap., pF Tight (Min.)	Open* (Max.)	Net Each, Lots of 1-24	25-99*
400	1⅛	7	0.9	$0.55	$0.48
402	2	20	1.5	.55	.48
403	3	35	3	.67	.60
404	4	60	8	.81	.72
405	5	80	10	1.01	.89
406	6	115	15	1.04	.95
420	1⅛	12	1	.58	.53
421	1¾	25	2	.55	.48
422	2	40	4	.55	.48
423	3	100	7	.64	.57
424	4	150	14	.80	.71
425	5	200	24	.85	.78
426	6	250	37	1.01	.89
427	7	300	55	1.12	1.02
428	8	350	70	1.26	1.11
429	9	400	90	1.26	1.11
4210	10	450	110	1.41	1.27
4211	11	500	130	1.59	1.42
4212	12	550	150	1.63	1.47
4213	13	600	170	1.77	1.60
4214	14	650	190	1.89	1.71
4215	15	700	210	1.99	1.76
460	1¼	15	1.5	.65	.56
461	1¾	30	2.7	.70	.60
462	2	80	5	.70	.60
463	3	180	9	.70	.60
464	4	280	25	.80	.69
465	5	380	50	1.03	.88
466	6	480	80	1.15	.99
467	7	580	110	1.15	.99
468	8	680	140	1.40	1.20
469	9	780	170	1.40	1.20
4610	10	900	190	1.68	1.44
4611	11	1000	210	1.80	1.55
4612	12	1100	240	1.95	1.68
4613	13	1200	300	2.10	1.81
4614	14	1300	340	2.20	1.89
4615	15	1400	390	2.35	2.02

TYPES 30 AND 30-M (FIG. B) PADDERS

Arco No.	No. of Plates	Guar. Cap., pF 1¾" lbs. (Min.)	Open* (Max.)	Net Each, Lots of 1-24	25-99*
302	2	130	15	$1.45	$1.30
303	3	340	65	1.67	1.50
304	4	550	100	1.67	1.50
305	5	760	190	1.79	1.60
306	6	970	275	1.79	1.60
307	7	1180	350	1.85	1.68
308	8	1390	450	2.13	1.92
309	9	1600	550	2.13	1.92
310	10	1890	650	2.36	2.14
311	11	2110	780	2.36	2.14
312	12	2330	880	2.58	2.34
313	13	2605	1150	2.74	2.46
314	14	2830	1300	2.87	2.60
315	15	3055	1400	2.87	2.60
302-M	2	120	15	1.59	1.42
303-M	3	320	65	1.69	1.52
304-M	4	500	100	1.77	1.58
305-M	5	690	180	1.83	1.66
306-M	6	880	265	1.95	1.76
307-M	7	1070	340	2.09	1.88
308-M	8	1260	425	2.21	1.98
309-M	9	1415	525	2.31	2.06
310-M	10	1600	615	2.45	2.20
311-M	11	1785	730	2.57	2.32
312-M	12	1970	800	2.68	2.42
313-M	13	2155	1000	2.79	2.54
314-M	14	2340	1100	2.98	2.68
315-M	15	2525	1200	3.18	2.86

*At 3 turns.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

Arco PRECISION POLYSTYRENE CAPACITORS

TYPE ARC COMPUTER GRADE ELECTROLYTIC CAPACITORS

Designed for use in computers, power supply filters, industrial controls, welders, photo flash energy storage, or any other application where high reliability, heavy duty electrolytic capacitors are required. Type ARC capacitors are designed to operate at full rated voltage in ambient temperatures of 85° C continuously with maximum AC ripple current applied. Connections are two aluminum terminals molded in place and tapped for 10-32 screws. The cover is sealed with a rubber gasket crimped in place. A PVC sleeve rated at over 3000 volts insulates the outer shell. **Operating Temperature:** −40° C to +85° C. **Storage Temperature:** −60° C to +85° C. **DC Leakage Current:** Less than .005 x CV. **Tolerance:** 5 to 50 VDCW, −10% +100%; 51 to 100 VDCW, −10% +75%.

6 VDCW (8 V Surge)

Arco No.	Cap., μF	Size, Inches Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249
ARC6AA73	7,000	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC6AB143	14,000	1⅜ x 3⅛	2.80	2.45	1.89
ARC6AC213	21,000	1⅜ x 4⅛	3.28	2.87	2.21
ARC6BB333	33,000	2 x 3⅛	4.14	3.62	2.79
ARC6BC54	50,000	2 x 4⅛	4.90	4.29	3.31
ARC6CB573	57,000	2½ x 3⅛	5.62	4.92	3.79
ARC6CC863	86,000	2½ x 4⅛	7.12	6.23	4.81
ARC6DC124	120,000	3 x 4⅛	10.04	8.79	6.78

10 VDCW (12 V Surge)

ARC10AA63	6,000	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC10AB123	12,000	1⅜ x 3⅛	2.80	2.45	1.89
ARC10AC183	18,000	1⅜ x 4⅛	3.28	2.87	2.21
ARC10BB283	28,000	2 x 3⅛	4.14	3.62	2.79
ARC10CB483	48,000	2½ x 3⅛	5.62	4.92	3.79
ARC10CC723	72,000	2½ x 4⅛	7.12	6.23	4.81
ARC10DC15	100,000	3 x 4⅛	10.04	8.79	6.78

15 VDCW (20 V Surge)

ARC15AA462	4,600	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC15AB922	9,200	1⅜ x 3⅛	2.80	2.45	1.89
ARC15AC133	13,000	1⅜ x 4⅛	3.28	2.87	2.21
ARC15BB213	21,000	2 x 3⅛	4.14	3.62	2.79
ARC15BC313	31,000	2 x 4⅛	4.90	4.29	3.31
ARC15CB363	36,000	2½ x 3⅛	5.62	4.92	3.79
ARC15CC543	54,000	2½ x 4⅛	7.12	6.23	4.81
ARC15DC84	80,000	3 x 4⅛	10.04	8.79	6.78

25 VDCW (30 V Surge)

ARC25AA272	2,700	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC25AB552	5,500	1⅜ x 3⅛	2.80	2.45	1.89
ARC25AC822	8,200	1⅜ x 4⅛	3.28	2.87	2.21
ARC25BC183	18,000	2 x 4⅛	4.90	4.29	3.31
ARC25CB213	21,000	2½ x 3⅛	5.62	4.92	3.79
ARC25CC323	32,000	2½ x 4⅛	7.12	6.23	4.81
ARC25DC473	47,000	3 x 4⅛	10.04	8.79	6.78
ARC25DC553	55,000	3 x 4⅛	11.34	9.92	7.65

30 VDCW (40 V Surge)

ARC30DC363	36,000	3 x 4⅛	$10.04	$8.79	$6.78
ARC30DC423	42,000	3 x 4⅛	11.34	9.92	7.65

40 VDCW (50 V Surge)

ARC40AA182	1,800	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC40AB362	3,600	1⅜ x 3⅛	2.80	2.45	1.89
ARC40AC552	5,500	1⅜ x 4⅛	3.28	2.87	2.21
ARC40BB842	8,400	2 x 3⅛	4.14	3.62	2.79
ARC40BC123	12,000	2 x 4⅛	4.90	4.29	3.31
ARC40CC213	21,000	2½ x 4⅛	7.12	6.23	4.81
ARC40CC253	25,000	2½ x 4⅛	7.86	6.88	5.31
ARC40DC313	31,000	3 x 4⅛	10.04	8.79	6.78

50 VDCW (65 V Surge)

ARC50AA132	1,300	1⅜ x 2⅛	$ 2.32	$2.03	$1.57
ARC50AB262	2,600	1⅜ x 3⅛	2.80	2.45	1.89
ARC50AC392	3,900	1⅜ x 4⅛	3.28	2.87	2.21
ARC50BB63	6,000	2 x 3⅛	4.14	3.62	2.79
ARC50BC93	9,000	2 x 4⅛	4.90	4.29	3.31
ARC50CC153	15,000	2½ x 4⅛	7.12	6.23	4.81
ARC50DC223	22,000	3 x 4⅛	10.04	8.79	6.78

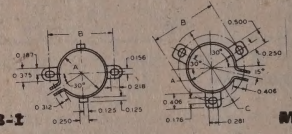
75 VDCW (95 V Surge)

ARC75AA851	850	1⅜ x 2⅛	$ 2.46	$ 2.15	$1.66
ARC75AB172	1,700	1⅜ x 3⅛	3.02	2.64	2.04
ARC75AC252	2,500	1⅜ x 4⅛	3.54	3.10	2.39
ARC75BB392	3,900	2 x 3⅛	4.32	3.78	2.92
ARC75BC592	5,900	2 x 4⅛	5.44	4.76	3.67
ARC75CB672	6,700	2½ x 3⅛	6.78	5.93	4.58
ARC75CC14	10,000	2½ x 4⅛	8.54	7.47	5.76
ARC75CC113	11,000	2½ x 4⅛	9.46	8.28	6.39
ARC75DC143	14,000	3 x 4⅛	12.08	10.57	8.15

100 VDCW (125 V Surge)

ARC100AA451	450	1⅜ x 2⅛	$ 2.46	$ 2.15	$1.66
ARC100AB92	900	1⅜ x 3⅛	3.02	2.64	2.04
ARC100AC132	1,300	1⅜ x 4⅛	3.54	3.10	2.39
ARC100BC33	3,000	2 x 4⅛	5.44	4.76	3.67
ARC100CB352	3,500	2½ x 3⅛	6.78	5.93	4.58
ARC100CC532	5,300	2½ x 4⅛	8.54	7.47	5.76
ARC100DB73	7,000	3 x 3⅛	9.46	8.28	6.39
ARC100DC782	7,800	3 x 4⅛	12.08	10.57	8.15

CAPACITOR MOUNTING HARDWARE

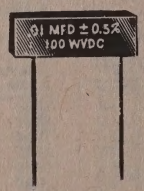


MB-1 MB-2

Arco No.	Flg.	Cap. Dia.	Net Each	Arco No.	Flg.	Cap. Dia.	Net Each
MB-1	A	1⅜"	$0.23	MB-3	B	2½"	$0.38
MB-2	B	2"	.38	MB-4	B	3"	.38

TYPE PE POLYSTYRENE CAPACITORS

Capacitance Range: .001–.01 μF (lower and higher values available). **Tolerance:** ±1% and ±5%. **Voltage Rating:** 100 WVDC. **Insulation Resistance:** 10^{13} ohms min. at 25° C. -10^{12} ohms min. at 85° C. **Dissipation Factor:** .0001% max. at 25° C; −.02% max. at 85° C. **Dielectric Absorption:** 0.05% max. at all temperatures. **Temperature Coefficient:** −190, ±30 ppm/° C. **Stability:** ±0.1% max. drift under fixed or variable operating conditions within specified max. limits.



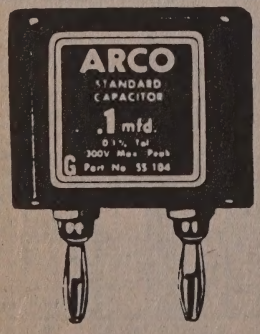
These capacitors are available in any capacitance value from 1000 to 10,000 pF, and any tolerances as close as ±0.1% can be supplied. Consult factory for availability and prices.

.001 THRU .01 μF STOCK VALUES

Tolerance	Net Each, Lots of 1-9	10-24	25-49	50-99
±1%	$2.32	$1.62	$1.25	$1.03
±5%	1.67	1.20	.88	.83

ALSO AVAILABLE IN POLYCARBONATE TYPE LE AND POLYESTER TYPE EE. PRICES ON REQUEST.

LABORATORY STANDARDS



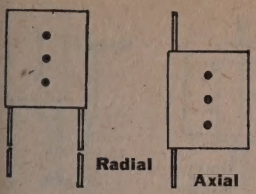
Accuracy of Calibration: ±0.1% +0.5 pF of nominal printed on capacitor at 1000 cycles frequency and 23° C. **Long Term Stability:** ±0.05% +0.1 pF.

Arco No.	Cap. μF	Max. Diss. Factor	Min. Leak. Resist. Megohms	Net Each	Arco No.	Cap. μF	Max. Diss. Factor	Min. Leak. Resist. Megohms	Net Each
SS-101	.0001	.0015	50,000	$19.00	SS-203	.02	.0005	50,000	$23.00
SS-201	.0002	.0015	50,000	19.00	SS-303	.03	.0005	50,000	23.00
SS-301	.0003	.0015	50,000	19.00	SS-403	.04	.0005	50,000	25.00
SS-401	.0004	.0015	50,000	19.00	SS-503	.05	.0005	50,000	25.00
SS-501	.0005	.001	50,000	19.00	SS-603	.06	.0005	50,000	27.00
SS-601	.0006	.001	50,000	19.00	SS-703	.07	.0005	50,000	29.00
SS-701	.0007	.001	50,000	19.00	SS-803	.08	.0005	50,000	31.00
SS-801	.0008	.001	50,000	19.00	SS-903	.09	.0005	50,000	33.00
SS-901	.0009	.001	50,000	19.00	SS-104	.1	.0005	50,000	35.00
SS-102	.001	.001	50,000	19.00	SS-204	.2	.0005	25,000	37.00
SS-202	.002	.0005	50,000	19.00	SS-304	.3	.0005	17,000	39.00
SS-302	.003	.0005	50,000	19.00	SS-404	.4	.0005	12,500	42.00
SS-402	.004	.0005	50,000	20.00	SS-504	.5	.0005	10,000	45.00
SS-502	.005	.0005	50,000	20.00	SS-604	.6	.0005	10,000	58.00
SS-602	.006	.0005	50,000	20.00	SS-704	.7	.0005	10,000	65.00
SS-702	.007	.0005	50,000	20.00	SS-804	.8	.0005	10,000	70.00
SS-802	.008	.0005	50,000	21.00	SS-904	.9	.0005	10,000	75.00
SS-902	.009	.0005	50,000	21.00	SS-105	1.0	.0005	10,000	85.00
SS-103	.01	.0005	50,000	21.00					

NOTE: Peak voltage for capacity values from .0001 μF to .04 μF is 500 volts. From .05 μF to 1.0 μF is 300 volts.

Tantalum Capacitors

MINITAN® MODULAR MM SERIES SUBMINIATURE SOLID TANTALUM CAPACITORS



Precision subminiature polar capacitors suitable for general filtering, coupling, bypassing and non-critical RC timing applications. Very favorable capacitance-to-volume ratio makes units ideal for use in high-density applications such as found in avionics systems, subminiature communications equipment and thick-film circuitry. **Temperature Range:** −55° C to +85° C without derating; to +125° C if WVDC derated to ⅔. **ORDERING INFORMATION:** Price table below is keyed to case size; also see Part Number Breakdown Chart. **Lead Configuration:** Add suffix **A** for axial leads; add suffix **R** for radial leads. **Tolerance:** Add suffix **-20** for ±20%; suffix **-10** for ±10%; suffix **-05** for ±5%. Only standard tolerance capacitors are stock items, others are special order only; 10% decade values are available in ±5% and ±10% tolerances. **Example:** Part No. **MMF-035-104-A-10** indicates a 35 V, 0.1 μF axial capacitor, case F, ±10% tolerance; complete Part No. must include Basic Part No. and both Lead and Tolerance suffixes. Capacitance and dissipation factor (DF) measured at 25° C, 120 Hz; DC leakage measured at 25° C.

W CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA. Gold-plated leads.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMW-020-472*	.0047	20	10
MMW-020-682*	.0068	20	10
MMW-020-103	.010	20	10
MMW-020-153	.015	20	10
MMW-020-223	.022	20	10
MMW-020-333	.033	20	10
MMW-020-473	.047	20	10
MMW-020-683	.068	20	10
MMW-015-104	.10	15	10
MMW-010-154	.15	10	10
MMW-006-224	.22	6	10
MMW-004-334	.33	4	10
MMW-002-474	.47	2	10

*Not available in ±10% or ±5% tolerances.

U CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMU-020-102	.0010	20	6
MMU-020-152	.0015	20	6
MMU-020-222	.0022	20	6
MMU-020-332	.0033	20	6
MMU-020-472	.0047	20	6
MMU-020-682	.0068	20	6
MMU-020-103	.010	20	6
MMU-020-153	.015	20	6
MMU-020-223	.022	20	6
MMU-020-333	.033	20	6
MMU-020-473	.047	20	6
MMU-020-683	.068	20	6
MMU-020-104	.10	20	6
MMU-020-154	.15	20	6
MMU-020-224	.22	20	6
MMU-015-334	.33	15	6
MMU-010-474	.47	10	6
MMU-006-684	.68	6	6
MMU-004-105	1.0	4	8
MMU-003-155	1.5	3	10
MMU-002-225	2.2	2	10

F CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMF-035-472	.0047	35	6
MMF-035-682	.0068	35	6
MMF-035-103	.010	35	6
MMF-035-153	.015	35	6
MMF-035-223	.022	35	6
MMF-035-333	.033	35	6
MMF-035-473	.047	35	6
MMF-035-683	.068	35	6
MMF-035-104	.10	35	6
MMF-035-154	.15	35	6
MMF-035-224	.22	35	6
MMF-035-334	.33	35	6
MMF-035-474	.47	35	6
MMF-025-684	.68	25	6
MMF-020-105	1.0	20	6
MMF-015-155	1.5	15	6
MMF-010-225	2.2	10	6
MMF-006-335	3.3	6	6
MMF-004-475	4.7	4	8
MMF-003-685	6.8	3	10
MMF-002-106	10	2	10

M CASE

Standard tolerance, ±20%; max. DC leakage, 1.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMM-035-684	.68	35	6
MMM-035-105	1.0	35	6
MMM-035-155	1.5	35	6
MMM-025-225	2.2	25	6
MMM-020-335	3.3	20	6
MMM-020-475	4.7	20	6
MMM-010-685	6.8	10	6
MMM-006-106	10	6	6
MMM-004-156	15	4	8
MMM-003-226	22	3	10

L CASE

Standard tolerance, ±20%; max. DC leakage, 2.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MML-035-225	2.2	35	6
MML-035-335	3.3	35	6
MML-035-475	4.7	35	6

L CASE (CONT'D)

Basic Part No.	Cap., μF	WV DC	Max. DF
MML-025-685	6.8	25	6
MML-020-106	10	20	6
MML-015-156	15	15	6
MML-010-226	22	10	6
MML-006-336	33	6	6
MML-004-476	47	4	8

S CASE

Standard tolerance, ±20%; max. DC leakage, 3.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMS-035-685	6.8	35	6
MMS-025-106	10	25	6
MMS-020-156	15	20	6
MMS-015-226	22	15	6
MMS-010-336	33	10	6
MMS-006-476	47	6	6
MMS-004-686	68	4	8

J CASE

Standard tolerance, ±20%; max. DC leakage, 9.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MMJ-035-106	10	35	6
MMJ-035-156	15	35	6
MMJ-035-226	22	35	6
MMJ-025-336	33	25	6
MMJ-020-476	47	20	8
MMJ-015-686	68	15	8
MMJ-010-107	100	10	8
MMJ-006-157	150	6	10
MMJ-003-227	220	3	15

CASE SIZES

Case	Size, Inches W. x D. x H.
W	.050 x .040 x .100
U	.070 x .040 x .125
F	.120 x .070 x .165
M	.185 x .075 x .225
L	.220 x .110 x .290
S	.230 x .130 x .310
J	.375 x .150 x .475

PRICING

W CASE

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
20%	$1.04	$0.83	$0.68	$0.61	$0.52
10%*	1.25	1.00	.82	.74	.62
5%*	2.08	1.66	1.36	1.21	1.04

U CASE

20%	$0.92	$0.74	$0.61	$0.54	$0.47
10%*	1.16	.94	.78	.67	.59
5%*	1.72	1.38	1.15	1.00	.86

F CASE

20%	$0.87	$0.70	$0.58	$0.50	$0.44
10%*	1.09	.87	.74	.64	.56
5%*	1.63	1.31	1.10	.95	.80

M CASE

20%	$1.08	$0.86	$0.72	$0.63	$0.54
10%*	1.30	1.03	.87	.76	.66
5%*	2.16	1.72	1.44	1.18	.95

L AND S CASES

20%	$1.21	$0.98	$0.81	$0.70	$0.61
10%*	1.45	1.18	.96	.84	.71
5%*	2.42	1.96	1.61	1.31	1.07

J CASE

20%	$2.58	$2.06	$1.72	$1.52	$1.29
10%*	3.10	2.47	2.05	1.83	1.50
5%*	5.16	4.12	3.41	2.62	1.97

*Non-stock tolerances; special order items only.

PART NUMBER BREAKDOWN CHART

MMF -035 -105 -A -10

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Ⓐ **Case Size**—W, U, F, M L, S or J as required; pricing is keyed to case size.

Ⓑ **Rated Voltage**—voltage preceded by number of zeros to total three digits.

Ⓒ **Capacitance**—First two digits are significant figures, last digit is the power of 10 (or the number of zeros) of the multiplier; all values measured in pF.

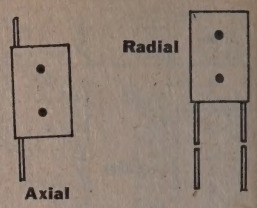
Ⓓ **Lead Configuration**—"A" indicates axial leads, "R" indicates radial leads.

Ⓔ **Tolerance**—Suffix "-20" for ±20%; "-10" for ±10%; "-05" for ±5%. Only indicated standard tolerances are stock items; all others are special order only.

Tantalum Capacitors

MINITAN® CORDWOOD MZ SERIES SUBMINIATURE SOLID TANTALUM CAPACITORS

Precision subminiature polar capacitors suitable for general filtering, coupling, bypassing and non-critical RC timing applications. Very favorable capacitance-to-volume ratio makes units especially well suited to high-density applications such as found in avionics systems, subminiature communications equipment and thick-film circuitry. **Temperature Range:** −55° C to +85° C without derating; derate WVDC linearly to ⅔ at +125° C. **ORDERING INFORMATION:** Price table below is keyed to case size; also see Part Number Breakdown Chart. **Lead Configuration:** Add suffix **A** for axial leads; add suffix **R** for radial leads. **Tolerance:** Add suffix **-20** for ±20%; suffix **-10** for ±10%; suffix **-05** for ±5%. Only standard tolerance capacitors are stock items, others are special order only; 10% decade values available in ±5% and ±10% tolerances. **Example:** Part No. **MZA-010-475-A-10** indicates a 10 V, 4.7 μF axial capacitor, case A, ±10% tolerance; complete Part No. must include Basic Part No. and both Lead and Tolerance suffixes. Capacitance and dissipation factor (DF) measured at 25° C, 120 Hz; DC leakage measured at 25° C.



Y CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MZY-020-102	.0010	20	6
MZY-020-152	.0015	20	6
MZY-020-222	.0022	20	6
MZY-020-332	.0033	20	6
MZY-020-472	.0047	20	6
MZY-020-682	.0068	20	6
MZY-020-103	.010	20	6
MZY-020-153	.015	20	6
MZY-020-223	.022	20	6
MZY-020-333	.033	20	6
MZY-020-473	.047	20	6
MZY-020-683	.068	20	6
MZY-020-104	.10	20	6
MZY-020-154	.15	20	6
MZY-020-224	.22	20	6
MZY-015-334	.33	15	6
MZY-010-474	.47	10	6
MZY-006-684	.68	6	6
MZY-004-105	1.0	4	8
MZY-003-155	1.5	3	10
MZY-002-225	2.2	2	10

P CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MZP-050-102	.0010	50	6
MZP-050-152	.0015	50	6
MZP-050-222	.0022	50	6
MZP-050-332	.0033	50	6
MZP-050-472	.0047	50	6
MZP-050-682	.0068	50	6

P CASE (CONT'D)

Basic Part No.	Cap., μF	WV DC	Max. DF
MZP-050-103	.010	50	6
MZP-035-153	.015	35	6
MZP-035-223	.022	35	6
MZP-035-333	.033	35	6
MZP-035-473	.047	35	6
MZP-035-683	.068	35	6
MZP-035-104	.10	35	6
MZP-035-154	.15	35	6
MZP-035-224	.22	35	6
MZP-020-334	.33	20	6
MZP-020-474	.47	20	6
MZP-015-684	.68	15	6
MZP-010-105	1.0	10	6
MZP-006-155	1.5	6	6
MZP-004-225	2.2	4	8
MZP-003-335	3.3	3	10
MZP-002-475	4.7	2	10

B CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MZB-035-334	.33	35	6
MZB-035-474	.47	35	6
MZB-020-684	.68	20	6
MZB-020-105	1.0	20	6
MZB-015-155	1.5	15	6
MZB-010-225	2.2	10	6
MZB-006-335	3.3	6	6
MZB-004-475	4.7	4	8
MZB-003-685	6.8	3	10
MZB-002-106	10	2	10

A CASE

Standard tolerance, ±20%; max. DC leakage, 1.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MZA-035-684	.68	35	6
MZA-035-105	1.0	35	6
MZA-020-155	1.5	20	6
MZA-020-225	2.2	20	6
MZA-015-335	3.3	15	6
MZA-010-475	4.7	10	6
MZA-006-685	6.8	6	6
MZA-004-106	10	4	8
MZA-003-156	15	3	10
MZA-002-226	22	2	10

G CASE

Standard tolerance, ±20%; max. DC leakage, 1.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MZG-035-155	1.5	35	6
MZG-035-225	2.2	35	6
MZG-020-335	3.3	20	6
MZG-020-475	4.7	20	6
MZG-020-685	6.8	20	6
MZG-015-106	10	15	6
MZG-010-156	15	10	6
MZG-006-226	22	6	6
MZG-004-336	33	4	8
MZG-003-476	47	3	10

CASE SIZES

Case	Max. Size, Inches Length x Diameter
Y	.125 x .070
P	.160 x .070
B	.200 x .080
A	.225 x .100
G	.250 x .150

PRICING

Y AND P CASES

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
20%	$0.86	$0.68	$0.57	$0.49	$0.43
10%*	1.08	.86	.73	.62	.53
5%*	1.60	1.30	1.07	.95	.82

A CASE

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
20%	$1.01	$0.78	$0.61	$0.54	$0.47
10%*	1.20	.94	.74	.64	.54
5%*	2.02	1.56	1.23	1.07	.87

B CASE

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
20%	$0.87	$0.70	$0.58	$0.50	$0.42
10%*	1.04	.84	.70	.61	.51
5%*	1.74	1.40	1.17	1.01	.84

*Non-stock tolerances; special order items only.

G CASE

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
20%	$1.17	$0.94	$0.78	$0.66	$0.60
10%*	1.38	1.12	.94	.80	.69
5%*	2.34	1.88	1.57	1.32	1.03

*Non-stock tolerances; special order items only.

PART NUMBER BREAKDOWN CHART

MZA	-010	-047	-A	-10
(A)	(B)	(C)	(D)	(E)

(A) **Case Size**—Y, P, B, A or G as required; pricing is keyed to case size.

(B) **Voltage Rating**—voltage preceded by number of zeros to total three digits.

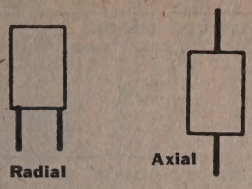
(C) **Capacitance**—First two digits are significant figures, last digit is number of zeros that follow (or the power of 10 of the multiplier); all values measured in pF.

(D) **Lead Configuration**—"A" indicates axial leads, "R" indicates radial leads.

(E) **Tolerance**—Suffix "-20" for ±20%; "-10" for ±10%; "-05" for ±5%. Only indicated standard tolerances are stock items; all others are special order only.

Tantalum Capacitors

MINITAN® MN SERIES SUBMINIATURE NONPOLAR SOLID TANTALUM CAPACITORS



Precision subminiature nonpolar capacitors suitable for general filtering, coupling, bypassing and noncritical RC timing applications. Specifically intended for those circuits where occasional or continuous voltage reversals occur. Very favorable capacitance-to-volume ratio makes them ideal for use in high-density applications such as found in avionics systems, subminiature communications equipment and thick-film circuitry. **Temperature Range:** −55° C to +85° C without derating; to +125° C if WVDC derated to ⅔. **ORDERING INFORMATION:** Price table below is keyed to case size; also see Part Number Breakdown Chart. **Lead Configuration:** Add suffix **A** for axial leads; add suffix **R** for radial leads. **Tolerance:** Add suffix **-20** for ±20%; suffix **-10** for ±20%; suffix **-05** for ±5%. Only standard tolerance capacitors are stock items; others are special order only; 10% decade values available in ±5% and ±10% tolerances. **Example:** Part No. **MNF-105-A-10** indicates a 1.0 μF axial capacitor, case F, ±10% tolerance; complete Part No. must include Basic Part No. and both Lead and Tolerance suffixes. Capacitance and dissipation factor (DF) measured at 25° C, 120 Hz; DC leakage measured at 25° C.

Y CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNY-020-102	.0010	20	6
MNY-020-152	.0015	20	6
MNY-020-222	.0022	20	6
MNY-020-332	.0033	20	6
MNY-020-472	.0047	20	6
MNY-020-682	.0068	20	6
MNY-020-103	.010	20	6
MNY-020-153	.015	20	6
MNY-020-223	.022	20	6
MNY-020-333	.033	20	6
MNY-020-473	.047	20	6
MNY-020-683	.068	20	6
MNY-020-104	.10	20	6
MNY-015-154	.15	15	6
MNY-010-224	.22	10	6
MNY-006-334	.33	6	6
MNY-004-474	.47	4	8
MNY-003-684	.68	3	10
MNY-002-105	1.0	2	10

P CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNP-050-102	.0010	50	6
MNP-050-152	.0015	50	6
MNP-050-222	.0022	50	6
MNP-050-332	.0033	50	6
MNP-050-472	.0047	50	6
MNP-035-682	.0068	35	6
MNP-035-103	.010	35	6
MNP-035-153	.015	35	6
MNP-035-223	.022	35	6
MNP-035-333	.033	35	6
MNP-035-473	.047	35	6
MNP-035-683	.068	35	6
MNP-035-104	.10	35	6
MNP-020-154	.15	20	6
MNP-020-224	.22	20	6
MNP-015-334	.33	15	6
MNP-010-474	.47	10	6
MNP-006-684	.68	6	6
MNP-004-105	1.0	4	8
MNP-003-155	1.5	3	10
MNP-002-225	2.2	2	10

B CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNB-035-154	.15	35	6
MNB-035-224	.22	35	6
MNB-020-334	.33	20	6
MNB-020-474	.47	20	6
MNB-015-684	.68	15	6
MNB-010-105	1.0	10	6
MNB-006-155	1.5	6	6
MNB-004-225	2.2	4	8
MNB-003-335	3.3	3	10
MNB-002-475	4.7	2	10

A CASE

Standard tolerance, ±20%; max. DC leakage, 1.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNA-035-334	.33	35	6
MNA-035-474	.47	35	6
MNA-020-684	.68	20	6
MNA-020-105	1.0	20	6
MNA-015-155	1.5	15	6
MNA-010-225	2.2	10	6
MNA-006-335	3.3	6	6
MNA-004-475	4.7	4	8
MNA-003-685	6.8	3	10
MNA-002-106	10	2	10

G CASE

Standard tolerance, ±20%; max. DC leakage, 1.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNG-035-684	.68	35	6
MNG-035-105	1.0	35	6
MNG-020-155	1.5	20	6
MNG-020-225	2.2	20	6
MNG-020-335	3.3	20	6
MNG-015-475	4.7	15	6
MNG-010-685	6.8	10	6
MNG-006-106	10	6	6
MNG-004-156	15	4	8
MNG-003-226	22	3	10

F CASE

Standard tolerance, ±20%; max. DC leakage, 0.5 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNF-035-104	.1	35	6
MNF-035-154	.15	35	6
MNF-035-224	.22	35	6
MNF-025-334	.33	25	6
MNF-020-474	.47	20	6
MNF-015-684	.68	15	6
MNF-010-105	1.0	10	6
MNF-006-155	1.5	6	6
MNF-004-225	2.2	4	8
MNF-003-335	3.3	3	10
MNF-002-475	4.7	2	10

M CASE

Standard tolerance, ±20%; max. DC leakage, 1.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNM-035-334	.33	35	6
MNM-035-474	.47	35	6
MNM-035-684	.68	35	6
MNM-025-105	1.0	25	6
MNM-020-155	1.5	20	6
MNM-020-225	2.2	20	6
MNM-010-335	3.3	10	6
MNM-006-475	4.7	6	6
MNM-004-685	6.8	4	8
MNM-003-106	10	3	10

L CASE

Standard tolerance, ±20%; max. DC leakage, 2.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNL-035-105	1.0	35	6
MNL-035-155	1.5	35	6
MNL-035-225	2.2	35	6
MNL-025-335	3.3	25	6
MNL-020-475	4.7	20	6
MNL-015-685	6.8	15	6
MNL-010-106	10	10	6
MNL-006-156	15	6	6
MNL-004-226	22	4	8

S CASE

Standard tolerance, ±20%; max. DC leakage, 3.0 μA.

Basic Part No.	Cap., μF	WV DC	Max. DF
MNS-035-335	3.3	35	6
MNS-025-475	4.7	25	6
MNS-020-685	6.8	20	6
MNS-015-106	10	15	6
MNS-010-156	15	10	6
MNS-006-226	22	6	6
MNS-004-336	33	4	8

PRICING

Tolerance	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
Y, F, B, P CASES					
±20%	$2.02	$1.63	$1.36	$1.19	$1.06
±10%	2.63	2.11	1.77	1.54	1.38
± 5%	4.05	3.26	2.73	2.38	2.11
A CASE					
±20%	$2.42	$1.93	$1.63	$1.41	$1.27
±10%	3.15	2.51	2.11	1.83	1.65
± 5%	4.84	3.85	3.26	2.82	2.53
M CASE					
±20%	$2.82	$2.27	$1.91	$1.63	$1.50
±10%	3.66	2.95	2.49	2.11	1.95
± 5%	5.63	4.53	3.83	3.26	2.99
G CASE					
±20%	$3.08	$2.44	$2.07	$1.79	$1.61
±10%	4.00	3.18	2.68	2.33	2.09
± 5%	6.16	4.88	4.14	3.59	3.21
L AND S CASES					
±20%	$3.30	$2.66	$2.24	$1.91	$1.76
±10%	4.29	3.47	2.92	2.49	2.29
± 5%	6.60	5.32	4.49	3.83	3.52

PART NUMBER BREAKDOWN CHART

MNF -010 -105 -A -10

(A) (B) (C) (D) (E)

(A) **Case Size**—Y, P, B, A, G, F, M, L or S as required; pricing keyed to case size.

(B) **Voltage Rating**—voltage preceded by number of zeros to total three digits.

(C) **Capacitance**—First two digits are significant figures, last digit is number of zeros (or the power of 10 of the multiplier); all values measured in pF.

(D) **Lead Configuration**—"A" indicates axial leads; "R" indicates radial leads.

(E) **Tolerance**—Suffix "-20" for ±20%; "-10" for ±10%; "-05" for ±5%. Only indicated tolerances are stock items; all others are special order only.

TYPE FAH COMPUTAMITE® COMPUTER GRADE CAPACITORS

Reliable, long-life units for power supply filtering, charge-discharge applications, and others requiring high mfd x volts per cubic inch. Hermetically sealed construction. High-gain, etched-foil sections easily meet shock and vibration tests of MIL-STD-202. Screw terminals. Plastic sleeve. **Operating Temperature:** −40° C to +85° C. **Tolerance:** 3–50 WVDC, −10% +100%; 51–350 WVDC, −10% +75%; 351–450 WVDC, −10 +50%.

CDE Number	Cap., µF†	Size, In.* D. x L.	Price Code
3 VDC RATED—4 VDC SURGE			
FAH270000-3-D6	270,000	3 x 5⅝	A
6 VDC RATED—8 VDC SURGE			
FAH120000-6-D3	120,000	3 x 4⅛	B
FAH190000-6-D6	190,000	3 x 5⅝	A
10 VDC RATED—12 VDC SURGE			
FAH6000-10-A1	6,000	1⅜ x 2⅛	C
FAH12000-10-A2	12,000	1⅜ x 3⅛	D
FAH18000-10-A3	18,000	1⅜ x 4⅛	E
FAH28000-10-B2	28,000	2 x 3⅛	F
FAH42000-10-B3	42,000	2 x 4⅛	G
FAH48000-10-B3	48,000	2 x 4⅛	G
FAH100000-10-C6	100,000	2½ x 5⅝	R
FAH160000-10-D6	160,000	3 x 5⅝	A
15 VDC RATED—18 VDC SURGE			
FAH4600-15-A1	4,600	1⅜ x 2⅛	C
FAH9200-15-A2	9,200	1⅜ x 3⅛	D
FAH13000-15-A3	13,000	1⅜ x 4⅛	E
FAH21000-15-B2	21,000	2 x 3⅛	F
FAH31000-15-B3	31,000	2 x 4⅛	G
FAH36000-15-B3	36,000	2 x 4⅛	G
FAH54000-15-C3	54,000	2½ x 4⅛	H
FAH63000-15-C3	63,000	2½ x 4⅛	H
FAH80000-15-D3	80,000	3 x 4⅛	B
25 VDC RATED—30 VDC SURGE			
FAH2700-25-A1	2,700	1⅜ x 2⅛	C
FAH5500-25-A2	5,500	1⅜ x 3⅛	D
FAH8200-25-A3	8,200	1⅜ x 4⅛	E
FAH18000-25-B3	18,000	2 x 4⅛	G
FAH32000-25-C3	32,000	2½ x 4⅛	H
FAH47000-25-D3	47,000	3 x 4⅛	B
FAH55000-25-D3	55,000	3 x 4⅛	B
FAH71000-25-D6	71,000	3 x 5⅝	A
30 VDC RATED—40 VDC SURGE			
FAH36000-30-D3	36,000	3 x 4⅛	B
FAH42000-30-D3	42,000	3 x 4⅛	B
40 VDC RATED—50 VDC SURGE			
FAH5500-40-A3	5,500	1⅜ x 4⅛	E
FAH8400-40-B2	8,400	2 x 3⅛	F
FAH12000-40-B3	12,000	2 x 4⅛	G
FAH21000-40-C3	21,000	2½ x 4⅛	H
50 VDC RATED—65 VDC SURGE			
FAH1300-50-A1	1,300	1⅜ x 2⅛	C
FAH2600-50-A2	2,600	1⅜ x 3⅛	D
FAH3900-50-A3	3,900	1⅜ x 4⅛	E
FAH6000-50-B2	6,000	2 x 3⅛	F
FAH9000-50-B3	9,000	2 x 4⅛	G
FAH15000-50-C3	15,000	2½ x 4⅛	H
FAH22000-50-D3	22,000	3 x 4⅛	B
FAH34000-50-D6	34,000	3 x 5⅝	A
75 VDC RATED—90 VDC SURGE			
FAH2500-75-A3	2,500	1⅜ x 4⅛	I
FAH3900-75-B2	3,900	2 x 3⅛	J
FAH14000-75-D3	14,000	3 x 4⅛	K
FAH22000-75-D6	22,000	3 x 5⅝	L
100 VDC RATED—125 VDC SURGE			
FAH450-100-A1	450	1⅜ x 2⅛	M
FAH1300-100-A3	1,300	1⅜ x 4⅛	I
FAH3000-100-B3	3,000	2 x 4⅛	N
FAH5300-100-C3	5,300	2½ x 4⅛	O
FAH7800-100-C6	7,800	2½ x 5⅝	P
150 VDC RATED—175 VDC SURGE			
FAH300-150-A1	300	1⅜ x 2⅛	M
FAH900-150-A3	900	1⅜ x 4⅛	I
FAH1400-150-B2	1,400	2 x 3⅛	J
FAH2100-150-B3	2,100	2 x 4⅛	N
FAH3600-150-C3	3,600	2½ x 4⅛	O
FAH5300-150-D3	5,300	3 x 4⅛	K
FAH7800-150-D6	7,800	3 x 5⅝	L
200 VDC RATED—250 VDC SURGE			
FAH250-200-A1	250	1⅜ x 2⅛	M
FAH430-200-A2	430	1⅜ x 3⅛	Q
FAH640-200-A3	640	1⅜ x 4⅛	I
FAH1400-200-B3	1,400	2 x 4⅛	N
FAH3700-200-D3	3,700	3 x 4⅛	K
FAH5500-200-D6	5,500	3 x 5⅝	L
250 VDC RATED—300 VDC SURGE			
FAH530-250-A3	530	1⅜ x 4⅛	I
FAH1200-250-B3	1,200	2 x 4⅛	N
FAH3000-250-C6	3,000	2½ x 5⅝	P
300 VDC RATED—350 VDC SURGE			
FAH240-300-A2	240	1⅜ x 3⅛	Q
FAH820-300-B3	820	2 x 4⅛	N
FAH2100-300-D3	2,100	3 x 4⅛	K
350 VDC RATED—400 VDT SURGE			
FAH95-350-A1	95	1⅜ x 2⅛	M
FAH190-350-A2	190	1⅜ x 3⅛	Q
FAH420-350-B2	420	2 x 3⅛	J
FAH650-350-B3	650	2 x 4⅛	N
FAH1100-350-C3	1,100	2½ x 4⅛	O
FAH1600-350-D3	1,600	3 x 4⅛	K
FAH2500-350-D6	2,500	3 x 5⅝	L
400 VDC RATED—475 VDC SURGE			
FAH420-400-B3	420	2 x 4⅛	N
450 VDC RATED—525 VDC SURGE			
FAH50-450-A1	50	1⅜ x 2⅛	M
FAH140-450-A3	140	1⅜ x 4⅛	I
FAH220-450-B2	220	2 x 3⅛	J
FAH330-450-B3	330	2 x 4⅛	N
FAH860-450-D3	860	3 x 4⅛	K

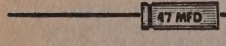
*Sizes are for uninsulated case. For insulated, add 1/16" to dia. and 3/8" to length for size including sleeves.

†Only preferred values listed; additional values available.

FAH-M types which have greater capacity per case size than the standard FAH are also available.

Price Code	Net Each, Lots of 1-24	25-49	50-99	100-Up
A	$18.17	$14.53	$12.72	$ 9.81
B	13.21	10.57	9.25	7.13
C	2.92	2.29	2.00	1.59
D	3.50	2.78	2.46	1.88
E	4.08	3.29	2.87	2.24
F	5.79	4.64	4.06	3.13
G	6.17	4.93	4.27	3.30
H	8.92	7.14	6.27	4.83
I	4.42	3.57	3.14	2.41
J	6.61	5.28	4.62	3.57
K	15.08	12.07	10.60	8.18
L	19.75	15.79	13.80	10.65
M	3.25	2.60	2.28	1.76
N	7.42	5.93	5.19	4.01
O	10.77	8.62	7.54	5.82
P	14.48	11.58	10.14	7.82
Q	3.83	3.07	2.66	2.06
R	12.27	9.81	8.59	6.63

TYPE UHL EXTENDED TEMPERATURE RANGE ALUMINUM ELECTROLYTICS



All-welded, polarized, etched foil aluminum electrolytic capacitors operate over temperature range of −55° to +125° C without derating. All aluminum for minimum weight, ideal for airborne and space applications. Dual voltage rated, allowing higher voltage operation at lower ambient temperature of +85° C. Maximum capacitance change at −55° C is −30%; at +125° C, +25%. Leads are #20 AWG, 1½" minimum. **Tolerance:** +75%, −10%. Also available to MIL-C-39018/01 spec., MIL styles CU12 and CU13.

5 WVDC AT 125° C—7 WVDC AT 85° C

CDE Number	Cap. µF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 100-5	100	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 1086	120	9/32 x 15/16	2.19	1.47	1.28	.92	.84
UHL 140-5	140	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 220-5	220	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 270-5	270	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 390-5	390	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 560-5	560	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 820-5	820	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 1000-5	1000	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

7 WVDC AT 125° C—10 WVDC AT 85° C

CDE Number	Cap. µF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 1088	100	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 100-7	100	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 180-7	180	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 220-7	220	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 330-7	330	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 470-7	470	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 680-7	680	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 820-7	820	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

LISTING CONTINUED ON FOLLOWING PAGE

TYPE UHL EXTENDED TEMPERATURE RANGE ALUMINUM ELECTROLYTICS (CONT'D)

10 WVDC AT 125° C—15 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 68-10	68	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 82-10	82	9/32 x 15/16	2.19	1.47	1.28	.92	.84
UHL 95-10	95	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 150-10	150	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 180-10	180	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 270-10	270	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 390-10	390	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 560-10	560	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 680-10	680	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

20 WVDC AT 125° C—30 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 33-20	33	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 47-20	47	9/32 x 15/16	2.19	1.47	1.28	.92	.84
UHL 50-20	50	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 82-20	82	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 100-20	100	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 120-20	120	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 150-20	150	3/8 x 1 3/8	4.57	3.08	2.68	1.92	1.75
UHL 220-20	220	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 330-20	330	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 390-20	390	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

40 WVDC AT 125° C—50 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 22-40	22	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 20-40	20	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 33-40	33	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 47-40	47	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 56-40	56	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 68-40	68	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 100-40	100	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 150-40	150	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 180-40	180	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

60 WVDC AT 125° C—75 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 12-60	12	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 15-60	15	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 22-60	22	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 33-60	33	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 47-60	47	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 68-60	68	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 100-60	100	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 120-60	120	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

75 WVDC AT 125° C—100 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 8.2-75	8.2	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 8-75	8	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 12-75	12	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 15-75	15	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 22-75	22	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 33-75	33	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 47-75	47	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 68-75	68	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

100 WVDC AT 125° C—150 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 4.7-100	4.7	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 5.6-100	5.6	9/32 x 15/16	2.19	1.47	1.28	.92	.84
UHL 6-100	6	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 8.2-100	8.2	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 12-100	12	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 18-100	18	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 22-100	22	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 33-100	33	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 56-100	56	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

150 WVDC AT 125° C—200 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 3.9-150	3.9	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 4-150	4	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 6-150	6	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 8-150	8	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 13-150	13	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 17-150	17	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 26-150	26	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 39-150	39	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

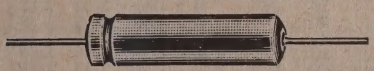
*Add 1/32" to dia. and 3/32" to length for overall size.

200 WVDC AT 125° C—250 WVDC AT 85° C

CDE Number	Cap. μF	Size*, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
UHL 1096	3.3	9/32 x 15/16	$2.19	$1.47	$1.28	$0.92	$0.84
UHL 3.3-200	3.3	3/8 x 13/16	2.19	1.47	1.28	.92	.84
UHL 5.6-200	5.6	3/8 x 15/16	2.33	1.57	1.36	.98	.89
UHL 6.8-200	6.8	3/8 x 1 1/8	3.02	2.03	1.77	1.27	1.15
UHL 10-200	10	3/8 x 1 3/8	4.67	3.08	2.68	1.92	1.75
UHL 12-200	12	3/8 x 1 5/8	4.65	3.13	2.73	1.95	1.78
UHL 22-200	22	3/8 x 2 3/16	5.02	3.38	2.95	2.11	1.92
UHL 27-200	27	3/8 x 2 11/16	6.58	4.43	3.86	2.77	2.51

*Add 1/32" to dia. and 3/32" to length for overall size.

TYPE NLW SUBMINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



Smallest subminiature electrolytic capacitors. Welded construction, hermetically sealed in an aluminum case and provided with plastic insulating sleeve. **Operating Range:** −40° to +105°C. **Tolerance:** −10%, +75%.

CDE No.†	Cap. μF	Size, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 25-3	25	1/4 x 1/2	$0.591	$0.403	$0.322	$0.251	$0.206
NLW 35-3	35	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 75-3	75	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 100-3	100	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 125-3	125	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 150-3	150	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 175-3	175	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 200-3	200	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 250-3	250	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 300-3	300	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 350-3	350	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 400-3	400	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 450-3	450	3/8 x 7/8	.954	.650	.520	.405	.332
NLW 500-3	500	3/8 x 1	.954	.650	.520	.405	.332
NLW 1000-3	1000	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 10-6	10	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 20-6	20	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 30-6	30	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 35-6	35	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 40-6	40	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 50-6	50	1/4 x 5/8	.667	.455	.364	.283	.232
NLW 100-6	100	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 150-6	150	5/16 x 3/4	.878	.599	.479	.372	.306
NLW 175-6	175	5/16 x 3/4	.878	.599	.479	.372	.306
NLW 200-6	200	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 250-6	250	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 300-6	300	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 350-6	350	3/8 x 7/8	.954	.650	.520	.405	.332
NLW 500-6	500	3/8 x 1 1/4	.990	.675	.540	.420	.345
NLW 600-6	600	3/8 x 1 1/4	1.013	.691	.553	.430	.353
NLW 800-6	800	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 8-10	8	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 40-10	40	1/4 x 5/8	.591	.403	.322	.251	.206
NLW 50-10	50	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 75-10	75	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 125-10	125	5/16 x 3/4	.878	.599	.479	.372	.306
NLW 150-10	150	3/8 x 3/4	.914	.623	.499	.388	.319
NLW 225-10	225	3/8 x 7/8	.954	.650	.520	.405	.332
NLW 450-10	450	3/8 x 1 1/4	1.013	.691	.553	.430	.353
NLW 15-12	15	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 25-12	25	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 30-12	30	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 35-12	35	1/4 x 5/8	.591	.403	.322	.251	.206
NLW 40-12	40	1/4 x 5/8	.667	.455	.364	.283	.232
NLW 75-12	75	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 100-12	100	5/16 x 3/4	.878	.599	.479	.372	.306
NLW 125-12	125	3/8 x 5/8	.878	.599	.479	.372	.306
NLW 175-12	175	3/8 x 3/4	.914	.623	.499	.388	.319
NLW 200-12	200	3/8 x 7/8	.954	.650	.520	.405	.332
NLW 250-12	250	3/8 x 7/8	.954	.650	.520	.405	.332
NLW 300-12	300	3/8 x 1	.954	.650	.520	.405	.332
NLW 400-12	400	3/8 x 1 1/4	1.013	.691	.553	.430	.353
NLW 500-12	500	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 4-16	4	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 5-16	5	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 6-16	6	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 10-16	10	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 15-16	15	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 20-16	20	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 25-16	25	1/4 x 5/8	.591	.403	.322	.251	.206
NLW 30-16	30	1/4 x 5/8	.667	.455	.364	.283	.232
NLW 40-16	40	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 50-16	50	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 75-16	75	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 100-16	100	5/16 x 3/4					
NLW 125-16	125	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 150-16	150	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 175-16	175	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 200-16	200	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 250-16	250	3/8 x 1	.954	.650	.520	.405	.332
NLW 300-16	300	3/8 x 1 1/4	.954	.650	.520	.405	.332
NLW 350-16	350	3/8 x 1 1/4	.990	.675	.540	.420	.345
NLW 400-16	400	3/8 x 1 1/2	.990	.675	.540	.420	.345
NLW 450-16	450	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 600-16	600	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 1-25	1	1/4 x 1/2	1.089	.743	.594	.462	.380
NLW 2-25	2	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 3-25	3	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 5-25	5	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 6-25	6	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 8-25	8	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 10-25	10	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 15-25	15	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 20-25	20	1/4 x 5/8	.591	.403	.322	.251	.206
NLW 25-25	25	5/16 x 5/8	.667	.455	.364	.283	.232

LISTING CONTINUED ON FOLLOWING PAGE

CDE CORNELL-DUBILIER Electrolytic Capacitors

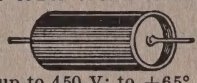
TYPE NLW SUBMINIATURE ALUMINUM ELECTROLYTIC CAPACITORS (CONT'D)

CDE No.†	Cap. μF	Size*, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 30-25	30	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 35-25	35	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 40-25	40	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 50-25	50	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 75-25	75	3/8 x 3/4	.838	.572	.457	.356	.292
NLW 100-25	100	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 125-25	125	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 150-25	150	3/8 x 1	.914	.623	.499	.388	.319
NLW 175-25	175	3/8 x 1 1/4	.954	.650	.520	.405	.332
NLW 200-25	200	3/8 x 1 1/4	1.013	.691	.553	.430	.353
NLW 250-25	250	3/8 x 1 1/2	1.013	.691	.553	.430	.353
NLW 300-25	300	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 1-50	1	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 2-50	2	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 3-50	3	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 4-50	4	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 5-50	5	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 6-50	6	1/4 x 1/2	.591	.403	.322	.251	.206
NLW 8-50	8	1/4 x 5/8	.591	.403	.322	.251	.206
NLW 10-50	10	1/4 x 5/8	.667	.455	.364	.283	.232
NLW 15-50	15	5/16 x 5/8	.667	.455	.364	.283	.232
NLW 20-50	20	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 25-50	25	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 30-50	30	3/8 x 5/8	.878	.599	.479	.372	.306
NLW 35-50	35	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 40-50	40	3/8 x 3/4	.914	.623	.499	.388	.319
NLW 50-50	50	3/8 x 7/8	.914	.623	.499	.388	.319

CDE No.†	Cap. μF	Size*, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 75-50	75	3/8 x 1	.954	.650	.520	.405	.332
NLW 100-50	100	3/8 x 1 1/4	.990	.675	.540	.420	.345
NLW 125-50	125	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 2-100	2	1/4 x 1/2	.667	.455	.364	.283	.232
NLW 4-100	4	5/16 x 5/8	.746	.509	.407	.316	.260
NLW 5-100	5	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 6-100	6	5/16 x 5/8	.838	.572	.457	.356	.292
NLW 8-100	8	3/8 x 5/8	.878	.599	.479	.372	.306
NLW 10-100	10	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 15-100	15	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 20-100	20	3/8 x 1	.954	.650	.420	.405	.332
NLW 25-100	25	3/8 x 1	.990	.675	.540	.420	.345
NLW 30-100	30	3/8 x 1 1/4	1.013	.691	.553	.430	.353
NLW 40-100	40	3/8 x 1 1/2	1.089	.743	.594	.462	.380
NLW 1-150	1	1/4 x 1/2	.667	.455	.364	.283	.232
NLW 2-150	2	1/4 x 5/8	.667	.455	.364	.283	.232
NLW 3-150	3	5/16 x 5/8	.746	.509	.407	.316	.260
NLW 4-150	4	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 5-150	5	5/16 x 3/4	.838	.572	.457	.356	.292
NLW 6-150	6	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 8-150	8	3/8 x 3/4	.878	.599	.479	.372	.306
NLW 10-150	10	3/8 x 7/8	.914	.623	.499	.388	.319
NLW 12-150	12	3/8 x 1	.954	.650	.520	.405	.332
NLW 15-150	15	3/8 x 1 1/4	.954	.650	.520	.405	.332
NLW 18-150	18	3/8 x 1 1/4	.990	.675	.540	.420	.345
NLW 20-150	20	3/8 x 1 1/2	1.013	.691	.553	.430	.353
NLW 25-150	25	3/8 x 1 1/2	1.089	.743	.594	.462	.380

TYPE WBR WIDE-RANGE TUBULAR ELECTROLYTICS

Aluminum electrolytic capacitors feature welded termination; hermetically sealed, with highly etched cathode and anode foil. With flexible plastic sleeve. **Operating Temperature:** −40° C to +85° C, up to 450 V; to +65° C, up to 700 V.

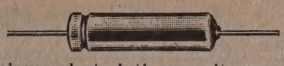


CDE No. WBR-	Cap., μF	WV DC	Size, In.* Dia. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249
1000-6	1000	6	5/8 x 1 7/16	$1.69	$1.30	$0.94	$0.71
2000-6	2000	6	3/4 x 1 7/16	1.83	1.40	1.02	.76
3000-10	3000	10	3/4 x 1 11/16	2.03	1.55	1.13	.85
4000-10	4000	10	7/8 x 1 11/16	2.20	1.68	1.22	.92
5000-10	5000	10	7/8 x 2	2.87	2.20	1.60	1.20
10000-10	10,000	10	1 x 2 11/16	3.21	2.46	1.79	1.34
100-16	100	16	5/16 x 3/4	.95	.73	.53	.40
250-16	250	16	3/8 x 1	1.15	.88	.64	.48
500-16	500	16	1/2 x 1 7/16	1.35	1.04	.75	.56
1000-16	1000	16	5/8 x 1 11/16	1.69	1.30	.94	.71
2000-16	2000	16	3/4 x 2	2.03	1.55	1.13	.85
3000-16	3000	16	3/4 x 2 1/2	2.37	1.81	1.32	.99
4000-16	4000	16	7/8 x 2 1/2	2.70	2.07	1.50	1.13
5000-16	5000	16	1 x 2 3/16	3.04	2.33	1.69	1.27
10000-16	10,000	16	1 1/8 x 3 9/16	3.88	2.59	1.88	1.41
10-25	10	25	1/4 x 1/2	.78	.60	.43	.33
25-25	25	25	5/16 x 5/8	.85	.65	.47	.35
50-25	50	25	5/16 x 3/4	.88	.67	.49	.37
100-25	100	25	3/8 x 3/4	1.08	.83	.60	.45
250-25	250	25	1/2 x 1 7/16	1.52	1.17	.85	.64
500-25	500	25	5/8 x 1 7/16	1.98	1.51	1.10	.83
1000-25	1000	25	3/4 x 1 11/16	3.27	2.55	1.82	1.36
2000-25	2000	25	3/4 x 2 1/2	4.03	3.08	2.24	1.68
100-35	100	35	3/8 x 1	1.08	.83	.60	.45
150-35	150	35	1/2 x 1 1/16	1.83	.91	.66	.49
300-35	300	35	5/8 x 1 1/16	1.59	1.22	.88	.66
500-35	500	35	5/8 x 1 7/16	1.98	1.51	1.10	.83
1000-35	1000	35	3/4 x 1 11/16	3.27	2.55	1.82	1.36
2000-35	2000	35	7/8 x 2 1/2	4.03	3.08	2.24	1.68
3000-35	3000	35	1 x 2 1/2	4.62	3.53	2.56	1.92
5500-35	5500	35	1 1/8 x 3 9/16	5.75	4.40	3.20	2.40
1-50	1	50	1/4 x 1/2	.71	.54	.40	.30
2-50	2	50	1/4 x 1/2	.71	.54	.40	.30
5-50	5	50	1/4 x 1/2	.78	.60	.43	.33
10-50	10	50	3/8 x 5/8	.78	.60	.43	.33
25-50	25	50	3/8 x 5/8	.85	.65	.47	.35
35-50	35	50	3/8 x 3/4	.91	.70	.51	.38
50-50	50	50	3/8 x 7/8	.98	.75	.55	.41
100-50	100	50	1/2 x 1 7/16	1.08	.83	.60	.45
125-50	125	50	1/2 x 1 7/16	1.15	.88	.64	.48
150-50	150	50	5/8 x 1 1/16	1.23	.94	.68	.51
250-50	250	50	5/8 x 1 7/16	1.55	1.19	.86	.65
500-50	500	50	3/4 x 1 11/16	2.06	1.57	1.14	.86
1000-50	1000	50	7/8 x 2	3.45	2.64	1.92	1.44
1500-50	1500	50	1 x 2 3/16	4.24	3.24	2.36	1.77
2000-50	2000	50	1 x 2 11/16	4.79	3.66	2.66	2.00
3000-50	3000	50	1 x 4 1/16	5.40	4.12	3.00	2.25
5000-50	5000	50	1 3/8 x 3 5/8	6.40	4.89	3.55	2.67
150-75	150	75	5/8 x 1 7/16	1.49	1.14	.83	.62
275-75	275	75	3/4 x 1 11/16	1.76	1.35	.98	.73
500-75	500	75	7/8 x 2	2.87	2.20	1.60	1.20
1000-75	1000	75	1 x 2 1/2	3.45	2.64	1.92	1.44
2000-75	2000	75	1 3/8 x 2 9/16	5.75	4.40	3.20	2.40
400-100	400	100	7/8 x 2 1/2	2.70	2.07	1.50	1.13
600-100	600	100	1 x 2 11/16	3.04	2.33	1.69	1.27
1000-100	1000	100	1 x 4 1/16	3.45	2.64	1.92	1.44
1500-100	1500	100	1 3/8 x 3 5/8	4.40	3.37	2.44	1.83
16-150	16	150	3/8 x 1	1.12	.86	.62	.47
20-150	20	150	3/8 x 1 1/4	1.18	.91	.66	.49
30-150	30	150	3/8 x 1 1/2	1.28	.98	.71	.54
40-150	40	150	5/8 x 1 7/16	1.59	1.22	.88	.66
50-150	50	150	5/8 x 1 7/16	1.69	1.30	.94	.71

CDE No. WBR-	Cap., μF	WV DC	Size, In.* Dia. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249
60-150	60	150	5/8 x 1 7/16	$1.79	$1.37	$1.00	$0.75
80-150	80	150	3/4 x 1 7/16	1.89	1.45	1.05	.79
100-150	100	150	3/4 x 1 11/16	1.96	1.50	1.09	.82
150-150	150	150	7/8 x 1 11/16	2.06	1.58	1.15	.86
160-150	160	150	7/8 x 1 11/16	2.129	1.63	1.18	.89
200-150	200	150	7/8 x 2	2.60	1.99	1.45	1.09
250-150	250	150	1 x 1 11/16	2.74	2.10	1.52	1.14
300-150	300	150	1 x 2 3/16	2.87	2.20	1.60	1.20
350-150	350	150	1 x 2 3/16	2.97	2.28	1.65	1.24
500-150	500	150	1 1/8 x 2 1/2	4.05	3.11	2.25	1.69
125-180	125	180	3/4 x 2 1/2	2.63	2.02	1.47	1.10
225-180	225	180	7/8 x 2 1/2	2.84	2.17	1.58	1.18
260-180	260	180	1 x 2 3/16	3.17	2.43	1.77	1.32
400-180	400	180	1 1/8 x 2 1/2	4.23	3.24	2.35	1.76
4-250	4	250	1/2 x 1 1/16	.88	.67	.49	.37
8-250	8	250	1/2 x 1 7/16	1.35	1.04	.75	.56
12-250	12	250	1/2 x 1 7/16	1.39	1.06	.77	.58
16-250	16	250	5/8 x 1 1/16	1.52	1.17	.85	.64
20-250	20	250	3/4 x 1 1/16	1.69	1.30	.94	.71
30-250	30	250	3/4 x 1 7/16	1.76	1.35	.98	.73
40-250	40	250	5/8 x 1 11/16	1.86	1.43	1.03	.78
50-250	50	250	3/4 x 1 11/16	1.93	1.48	1.07	.80
60-250	60	250	3/4 x 2	1.99	1.53	1.11	.83
80-250	80	250	7/8 x 1 11/16	2.30	1.76	1.28	.96
100-250	100	250	7/8 x 2	2.54	1.94	1.41	1.06
160-250	160	250	1 x 2 3/16	2.74	2.10	1.52	1.14
225-250	225	250	1 x 2 11/16	2.84	2.17	1.58	1.18
300-250	300	250	1 x 3 9/16	4.09	3.13	2.28	1.71
450-250	450	250	1 3/8 x 3 1/16	4.70	3.60	2.61	1.96
4-350	4	350	1/2 x 1 1/16	1.35	1.04	.75	.56
8-350	8	350	5/8 x 1 1/16	1.39	1.06	.77	.58
20-350	20	350	3/4 x 1 7/16	1.79	1.37	1.00	.75
40-350	40	350	3/4 x 1 11/16	1.96	1.50	1.09	.82
60-350	60	350	3/4 x 2 1/2	2.37	1.81	1.32	.99
100-350	100	350	1 x 2	2.87	2.20	1.60	1.20
160-350	160	350	1 1/8 x 2 1/2	3.04	2.33	1.69	1.27
200-350	200	350	1 x 4 1/16	3.89	2.98	2.16	1.62
250-350	250	350	1 1/8 x 3 9/16	4.39	3.37	2.44	1.83
1-450	1	450	5/8 x 1 1/16	1.42	1.09	.79	.59
2-450	2	450	5/8 x 1 1/16	1.42	1.09	.79	.59
4-450	4	450	5/8 x 1 1/16	1.45	1.11	.81	.61
5-450	5	450	5/8 x 1 1/16	1.45	1.11	.81	.61
8-450	8	450	3/4 x 1 1/16	1.59	1.22	.88	.66
10-450	10	450	3/4 x 1 1/16	1.59	1.22	.88	.66
12-450	12	450	3/4 x 1 1/16	1.62	1.24	.90	.68
16-450	16	450	3/4 x 1 7/16	1.66	1.27	.92	.69
20-450	20	450	3/4 x 1 11/16	1.69	1.30	.94	.71
30-450	30	450	7/8 x 1 11/16	2.37	1.81	1.32	.99
40-450	40	450	7/8 x 2	2.54	1.94	1.41	1.06
50-450	50	450	7/8 x 2 1/2	2.74	2.10	1.52	1.14
60-450	60	450	1 x 2 3/16	2.81	2.15	1.56	1.17
80-450	80	450	1 x 2 11/16	2.87	2.20	1.60	1.20
100-450	100	450	1 x 3 9/16	3.89	2.98	2.16	1.62
120-450	120	450	1 1/8 x 3	4.23	3.24	2.35	1.76
160-450	160	450	1 1/8 x 4 1/16	4.39	3.37	2.44	1.83
225-450	225	450	1 3/8 x 3 5/8	5.24	4.02	2.91	2.19
1-500	1	500	1/2 x 1 1/16	1.35	1.04	.75	.56
3-500	3	500	1/2 x 1 7/16	1.42	1.09	.79	.59
5-500	5	500	5/8 x 1 1/16	1.52	1.17	.85	.64
8-500	8	500	3/4 x 1 1/16	1.69	1.30	.94	.71
10-500	10	500	5/8 x 1 11/16	1.69	1.30	.94	.71
16-500	16	500	3/4 x 1 11/16	1.86	1.43	1.03	.78
20-500	20	500	3/4 x 2	2.03	1.55	1.13	.85
10-600	10	600	13/16 x 3 3/16†	3.08	2.36	1.71	1.28
16-600	16	600	15/16 x 3 3/16†	3.21	2.46	1.79	1.34
20-600	20	600	15/16 x 3 11/16†	3.38	2.59	1.88	1.41
10-700	10	700	15/16 x 3 3/16†	3.17	2.43	1.77	1.32
16-700	16	700	15/16 x 4 5/16†	3.38	2.59	1.88	1.41

*Uninsulated case size; add 1/16" to dia. and 3/16" to lgth. for size including insulating sleeve. †Overall size, including sleeve.

TYPE WHB COMPUTAMITE® COMPUTER GRADE CAPACITORS



All welded, aluminum electrolytic capacitors are miniature size and computer quality. Feature unique anode terminal and seal design. Long life, highly vibration resistant with low leakage current, high 120 Hz ripple currents. Standard WHB capacitors are polarized; semi-polarized or non-polarized available on request. Operating temperature −40° C to +85° C. **Tolerance:** Up to 75 WVDC, −10 +75%; above 75 WVDC, −10 +50%; closer tolerances available on request.

3 WVDC—4 VS

CDE No.	Cap., µF	Size, In.* Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100 Up
WHB1300-3	1300	½ x 2⅛	$1.79	$1.07	$0.86	$0.72
WHB2100-3	2100	⅞ x 1⅛	1.97	1.18	.95	.79
WHB3000-3	3000	1 x 1⅛	2.02	1.22	.97	.81
WHB5700-3	5700	¾ x 2⅝	2.13	1.28	1.02	.85
WHB10000-3	10000	⅞ x 3⅛	2.68	1.61	1.29	1.07
WHB18000-3	18000	1 x 3⅝	3.36	2.02	1.61	1.35

6 WVDC—8 VS

WHB600-6	600	½ x 1⅝	$1.73	$1.04	$0.83	$0.69
WHB1000-6	1000	¾ x 1⅛	1.81	1.09	.87	.73
WHB2000-6	2000	¾ x 1⅝	2.02	1.22	.97	.81
WHB4000-6	4000	¾ x 2⅝	2.13	1.28	1.02	.85
WHB6000-6	6000	⅞ x 2⅝	2.55	1.53	1.22	1.02
WHB10000-6	10000	1 x 3⅛	3.10	1.86	1.49	1.24

10 WVDC—15 VS

WHB500-10	500	½ x 1⅝	$1.73	$1.04	$0.83	$0.69
WHB1000-10	1000	⅝ x 1⅝	1.81	1.09	.87	.73
WHB1600-10	1600	⅝ x 2⅛	1.97	1.18	.95	.79
WHB2500-10	2500	¾ x 2⅛	2.10	1.26	1.01	.84
WHB5000-10	5000	⅞ x 2⅝	2.55	1.53	1.22	1.02
WHB10000-10	10000	1 x 3⅝	3.36	2.02	1.61	1.35

16 WVDC—20 VS

WHB600-16	600	½ x 2⅛	$1.79	$1.07	$0.86	$0.72
WHB1200-16	1200	⅝ x 2⅛	1.97	1.18	.95	.79
WHB2500-16	2500	¾ x 2⅝	2.13	1.28	1.02	.85
WHB4000-16	4000	1 x 2⅛	2.63	1.58	1.26	1.05
WHB8000-16	8000	1 x 3⅝	3.36	2.02	1.61	1.35

25 WVDC—40 VS

WHB200-25	200	½ x 1⅝	$1.73	$1.04	$0.83	$0.69
WHB500-25	500	⅞ x 1⅛	1.97	1.18	.95	.79
WHB1000-25	1000	¾ x 2⅛	2.10	1.26	1.01	.84
WHB2200-25	2200	⅞ x 2⅝	2.55	1.53	1.22	1.02
WHB4000-25	4000	1 x 3⅛	3.10	1.86	1.49	1.24

30 WVDC—45 VS

WHB75-30	75	½ x 1⅛	$1.68	$1.01	$0.81	$0.67
WHB150-30	150	½ x 1⅝	1.73	1.04	.83	.69
WHB250-30	250	½ x 2⅛	1.79	1.07	.86	.72
WHB500-30	500	⅝ x 2⅛	1.97	1.18	.95	.79
WHB1100-30	1100	¾ x 2⅝	2.13	1.28	1.02	.85
WHB2100-30	2100	⅞ x 3⅛	2.68	1.61	1.29	1.07
WHB3000-30	3000	1 x 3⅛	3.10	1.86	1.49	1.24

50 WVDC—75 VS

WHB50-50	50	½ x 1⅛	$1.68	$1.01	$0.81	$0.67
WHB100-50	100	½ x 1⅝	1.73	1.04	.83	.69
WHB150-50	150	½ x 2⅛	1.79	1.07	.86	.72
WHB250-50	250	⅞ x 1⅛	1.97	1.18	.95	.79
WHB500-50	500	¾ x 2⅛	2.10	1.26	1.01	.84
WHB1100-50	1100	⅞ x 2⅝	2.55	1.53	1.22	1.02
WHB2300-50	2300	1 x 3⅝	3.36	2.02	1.61	1.35

150 WVDC—200 VS

WHB25-150	25	½ x 1⅝	$1.73	$1.04	$0.83	$0.69
WHB50-150	50	⅝ x 1⅝	1.81	1.09	.87	.73
WHB100-150	100	⅝ x 2⅝	2.10	1.26	1.01	.84
WHB250-150	250	⅞ x 2⅝	2.55	1.53	1.22	1.02
WHB530-150	530	1 x 3⅝	3.36	2.02	1.61	1.35

250 WVDC—300 VS

WHB20-250	20	½ x 2⅛	$1.79	$1.07	$0.86	$0.72
WHB50-250	50	1 x 1⅛	2.02	1.22	.97	.81
WHB100-250	100	⅞ x 2⅛	2.50	1.50	1.20	1.00
WHB200-250	200	1 x 2⅝	2.71	1.62	1.30	1.08
WHB300-250	300	1 x 3⅝	3.36	2.02	1.61	1.35

350 WVDC—400 VS

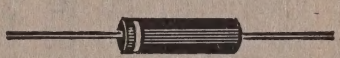
WHB20-350	20	⅝ x 2⅛	$1.97	$1.18	$0.95	$0.79
WHB30-350	30	⅝ x 2⅝	2.10	1.26	1.01	.84
WHB40-350	40	¾ x 2⅛	2.10	1.26	1.01	.84
WHB50-350	50	¾ x 2⅝	2.13	1.28	1.02	.85
WHB100-350	100	⅞ x 3⅛	2.68	1.61	1.29	1.07
WHB160-350	160	1 x 3⅝	3.36	2.02	1.61	1.35

450 WVDC—525 VS

WHB5-450	5	½ x 2⅛	$1.79	$1.07	$0.86	$0.72
WHB10-450	10	⅝ x 2⅛	1.97	1.18	.95	.79
WHB20-450	20	¾ x 2⅛	2.10	1.26	1.01	.84
WHB50-450	50	1 x 2⅝	2.71	1.62	1.30	1.08
WHB75-450	75	1 x 3⅝	3.36	2.02	1.61	1.35

*Uninsulated case size. Add 0.010″ to diameter and 0.036″ to length for dimensions including insulating sleeve.

TYPE MPY TRI-CLAD® METALLIZED PAPER CAPACITORS



High quality metallized paper dielectric capacitor enclosed in CDE's Tri-Cad case: Cardboard backed with film and aluminum foil. Insures maximum moisture and humidity resistance and minimum size. Solid resin impregnated for optimum performance. Wax-free, non-leaking. Ideal replacement for metal or non-metal case tubular metallized capacitors. **Temperature Range:** −55° C to +125° C. **Tolerance:** ±20%.

200 WVDC

CDE Number	Cap., µF	Size, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MPY2S22	.022	¼ x ⅝	$0.51	$0.38	$0.30	$0.255	$0.213
MPY2S33	.033	¼ x ⅝	.51	.38	.30	.255	.213
MPY2S47	.047	¼ x ⅝	.51	.38	.30	.255	.213
MPY2S68	.068	5/16 x ⅝	.54	.41	.32	.27	.225
MPY2P1	.1	⅜ x ⅝	.60	.45	.35	.30	.25
MPY2P15	.15	⅜ x ⅝	.63	.47	.37	.32	.263
MPY2P22	.22	15/32 x ⅝	.69	.52	.40	.35	.288
MPY2P33	.33	⅜ x 1⅛	.75	.56	.44	.38	.313
MPY2P47	.47	7/16 x 1⅛	.84	.63	.49	.42	.35
MPY2P68	.68	15/32 x 1⅛	.99	.74	.58	.50	.413
MPY2W1	1.0	9/16 x 1⅛	1.20	.90	.70	.60	.50
MPY2W1P5	1.5	9/16 x 1 1/16	1.38	1.04	.81	.69	.575
MPY2W2	2.0	⅝ x 1 1/16	1.62	1.22	.95	.81	.675

400 WVDC

MPY4S15	.015	¼ x ⅝	$0.51	$0.38	$0.30	$0.255	$0.213
MPY4S22	.022	5/16 x ⅝	.51	.38	.30	.255	.213
MPY4S33	.033	⅜ x ⅝	.54	.41	.32	.27	.225
MPY4S47	.047	7/16 x ⅝	.57	.43	.33	.285	.238
MPY4S68	.068	15/32 x ⅝	.60	.45	.35	.30	.250
MPY4P1	.1	⅜ x 1⅛	.63	.47	.37	.315	.263
MPY4P15	.15	7/16 x 1⅛	.69	.52	.40	.345	.288
MPY4P22	.22	15/32 x 1⅛	.81	.61	.47	.405	.338
MPY4P33	.33	⅝ x 1⅛	.93	.70	.54	.465	.388
MPY4P47	.47	⅝ x 1 1/16	1.05	.79	.61	.525	.438
MPY4P68	.68	⅝ x 1 13/16	1.26	.95	.74	.63	.525
MPY4W1	1.0	11/16 x 1 13/16	1.47	1.10	.86	.735	.613
MPY4W1P5	1.5	35/64 x 2⅜	1.68	1.26	.98	.84	.703
MPY4W2	2.0	11/16 x 2⅜	1.92	1.44	1.12	.96	.80

600 WVDC

CDE Number	Cap., µF	Size, In. Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MPY6S1	.01	¼ x ⅝	$0.51	$0.38	$0.30	$0.255	$0.213
MPY6S15	.015	5/16 x ⅝	.54	.41	.32	.27	.225
MPY6S22	.022	⅜ x ⅝	.54	.41	.32	.27	.225
MPY6S33	.033	⅜ x ⅝	.57	.43	.33	.285	.238
MPY6S47	.047	15/32 x ⅝	.60	.45	.35	.30	.25
MPY6S68	.068	⅜ x 1⅛	.63	.47	.37	.32	.263
MPY6P1	.1	⅜ x 1⅛	.66	.50	.39	.33	.275
MPY6P15	.15	15/32 x 1⅛	.84	.63	.49	.42	.35
MPY6P22	.22	9/16 x 1⅛	.93	.70	.54	.47	.388
MPY6P33	.33	⅝ x 1⅛	1.17	.88	.68	.59	.488
MPY6P47	.47	⅝ x 1 1/16	1.26	.95	.74	.63	.525
MPY6P68	.68	⅝ x 1 13/16	1.38	1.04	.81	.69	.575
MPY6W1	1.0	35/64 x 1 13/16	1.59	1.19	.93	.80	.663
MPY6W1P5	1.5	11/16 x 2⅜	1.98	1.49	1.16	.99	.825
MPY6W2	2.0	39/64 x 2⅜	2.55	1.91	1.49	1.28	1.063

OUR STOCKS ARE ALWAYS KEPT COMPLETE AND UP TO DATE.

ASK FOR INFORMATION ON ANY NEW OR UNLISTED PRODUCTS.

TYPE WMF POLYESTER DIELECTRIC FILM-ENCASED CAPACITORS

Ultra-compact polyester dielectric in film wrap; thermosetting epoxy end seals. High resistance to humidity. Excellent stability.

Temp: −55° C to +85° C at full voltage: derate 10% at 100° C; 50% at 125° C. **Tol.:** ±10%. Other tolerances also available; prices on request.

CDE No. WMF	Cap., µF	WV DC	Size, In. Dia. x Lg.	Net Each, Lots of 1-24	25-49	50-99	200-499	500-999*
05P1	.1	50	.250 x .812	$0.39	$0.298	$0.231	$0.195	$0.163
05P12	.12	50	.275 x .812	.396	.302	.235	.198	.165
05P15	.15	50	.285 x .812	.399	.305	.237	.200	.166
05P18	.18	50	.315 x .812	.408	.311	.242	.204	.170
05P22	.22	50	.330 x .812	.423	.323	.251	.212	.176
05P27	.27	50	.390 x .812	.462	.353	.274	.231	.193
05P33	.33	50	.400 x .812	.501	.382	.297	.251	.209
05P39	.39	50	.375 x 1.062	.555	.424	.329	.278	.231
05P47	.47	50	.375 x 1.062	.615	.469	.365	.308	.256
05P5	.50	50	.395 x 1.062	.624	.476	.370	.312	.260
05P56	.56	50	.450 x 1.062	.732	.559	.434	.366	.305
05P68	.68	50	.490 x 1.062	.783	.598	.465	.392	.326
05P82	.82	50	.505 x 1.062	.963	.735	.571	.482	.401
05W1	1.0	50	.500 x 1.375	1.092	.834	.648	.546	.455
05W2	2.0	50	.600 x 1.625	1.809	1.381	1.073	.905	.754
05W3	3.0	50	.730 x 1.625	2.535	1.935	1.504	1.268	1.056
05W4	4.0	50	.760 x 1.875	2.991	2.283	1.775	1.496	1.246
05W5	5.0	50	.850 x 1.875	3.729	2.846	1.213	1.865	1.554
1D1	.001	100	.156 x .50	.318	.243	.189	.159	.133
1D12	.0012	100	.156 x .50	.318	.243	.189	.159	.133
1D15	.0015	100	.156 x .50	.318	.243	.189	.159	.133
1D18	.0018	100	.156 x .50	.318	.243	.189	.159	.133
1D22	.0022	100	.156 x .50	.318	.243	.189	.159	.133
1D27	.0027	100	.156 x .50	.318	.243	.189	.159	.133
1D33	.0033	100	.156 x .50	.318	.243	.189	.159	.133
1D39	.0039	100	.156 x .50	.318	.243	.189	.159	.133
1D47	.0047	100	.156 x .50	.318	.243	.189	.159	.133
1D5	.0050	100	.156 x .50	.318	.243	.189	.159	.133
1D56	.0056	100	.156 x .50	.318	.243	.189	.159	.133
1D68	.0068	100	.175 x .50	.318	.243	.189	.159	.133
1D82	.0082	100	.175 x .50	.318	.243	.189	.159	.133
1S1	.01	100	.200 x .50	.318	.243	.189	.159	.133
1S12	.012	100	.215 x .50	.318	.243	.189	.159	.133
1S15	.015	100	.235 x .50	.318	.243	.189	.159	.133
1S18	.018	100	.255 x .50	.318	.243	.189	.159	.133
1S22	.022	100	.275 x .625	.318	.243	.189	.159	.133
1S27	.027	100	.300 x .625	.318	.243	.189	.159	.133
1S33	.033	100	.300 x .625	.318	.243	.189	.159	.133
1S39	.039	100	.245 x .75	.318	.243	.189	.159	.133
1S47	.047	100	.265 x .75	.327	.250	.194	.164	.136
1S5	.050	100	.270 x .75	.327	.250	.194	.164	.136
1S56	.056	100	.270 x .75	.339	.259	.201	.170	.141
1S68	.068	100	.280 x .75	.348	.266	.206	.174	.145
1S82	.082	100	.270 x .875	.351	.268	.208	.176	.146
1P1	.1	100	.290 x .875	.354	.270	.210	.177	.148
1P12	.12	100	.315 x .875	.357	.273	.212	.179	.149
1P15	.15	100	.335 x .875	.360	.275	.214	.180	.150
1P18	.18	100	.350 x 1.0	.369	.282	.219	.185	.154
1P22	.22	100	.385 x 1.0	.384	.293	.228	.192	.160
1P27	.27	100	.380 x 1.125	.423	.323	.251	.212	.176
1P33	.33	100	.415 x 1.125	.456	.348	.271	.228	.190
1P39	.39	100	.460 x 1.125	.504	.385	.299	.252	.210
1P47	.47	100	.475 x 1.125	.549	.419	.326	.275	.229
1P5	.50	100	.495 x 1.25	.564	.431	.335	.282	.235
1P56	.56	100	.520 x 1.25	.660	.504	.392	.330	.275
1P68	.68	100	.570 x 1.25	.711	.543	.422	.356	.296
1P82	.82	100	.585 x 1.375	.867	.662	.514	.434	.361
1W1	1.0	100	.625 x 1.50	.987	.753	.586	.494	.411
1W1P25	1.25	100	.690 x 1.50	1.131	.863	.671	.566	.471
1W1P5	1.5	100	.715 x 1.625	1.344	1.026	.797	.672	.560
1W2	2.0	100	.800 x 1.625	1.626	1.241	.965	.813	.678
1W3	3.0	100	1.100 x 2.312	2.280	1.740	1.353	1.140	.950
1W4	4.0	100	1.250 x 2.50	2.685	2.050	1.593	1.343	1.119
2D1	.001	200	.156 x .50	.318	.243	.189	.159	.133
2D15	.0015	200	.156 x .50	.318	.243	.189	.159	.133
2D22	.0022	200	.156 x .50	$0.318	$0.243	$0.189	$0.159	$0.133
2D33	.0033	200	.160 x .50	.318	.243	.189	.159	.133
2D47	.0047	200	.170 x .50	.318	.243	.189	.159	.133
2D68	.0068	200	.200 x .50	.318	.243	.189	.159	.133
2S1	.01	200	.230 x .50	.318	.243	.189	.159	.133
2S15	.015	200	.290 x .50	.318	.243	.189	.159	.133
2S22	.022	200	.275 x .625	.318	.243	.189	.159	.133
2S33	.033	200	.270 x .75	.318	.243	.189	.159	.133
2S47	.047	200	.320 x .75	.327	.250	.194	.164	.136
2S68	.068	200	.350 x .75	.348	.266	.206	.174	.145
2P1	.1	200	.410 x .875	.423	.323	.251	.212	.176
2P15	.15	200	.500 x .875	.441	.337	.262	.221	.184
2P22	.22	200	.500 x 1.125	.471	.360	.279	.236	.196
2P33	.33	200	.550 x 1.125	.534	.408	.317	.267	.223
2P47	.47	200	.600 x 1.25	.606	.463	.360	.303	.253
2P68	.68	200	.650 x 1.625	.711	.543	.422	.356	.296
2W1	1.0	200	.750 x 1.75	.987	.753	.586	.494	.411
2W1P25	1.25	200	.825 x 1.75	1.131	.863	.671	.566	.471
2W1P5	1.5	200	.900 x 1.75	1.344	1.026	.797	.672	.560
2W2	2.0	200	.980 x 1.875	1.626	1.241	.965	.813	.678
4D1	.001	400	.156 x .625	.357	.273	.212	.179	.148
4D15	.0015	400	.156 x .625	.357	.273	.212	.179	.148
4D22	.0022	400	.156 x .625	.357	.273	.212	.179	.148
4D33	.0033	400	.190 x .625	.357	.273	.212	.179	.148
4D47	.0047	400	.200 x .625	.357	.273	.212	.179	.148
4D68	.0068	400	.250 x .625	.357	.273	.212	.179	.148
4S1	.01	400	.300 x .625	.357	.273	.212	.179	.148
4S15	.015	400	.360 x .625	.357	.273	.212	.179	.148
4S22	.022	400	.320 x .75	.357	.273	.212	.179	.148
4S33	.033	400	.350 x .875	.357	.273	.212	.179	.148
4S47	.047	400	.400 x .875	.369	.282	.219	.185	.154
4S68	.068	400	.390 x 1.0	.399	.305	.237	.200	.166
4P1	.1	400	.465 x 1.0	.405	.309	.240	.203	.169
4P15	.15	400	.515 x 1.25	.423	.323	.251	.212	.176
4P22	.22	400	.565 x 1.375	.486	.371	.288	.243	.203
4P33	.33	400	.600 x 1.625	.792	.605	.470	.396	.330
4P47	.47	400	.700 x 1.625	.942	.719	.559	.471	.393
4P68	.68	400	.790 x 1.75	1.152	.879	.684	.576	.480
4W1	1.0	400	.875 x 2.0	1.371	1.047	.813	.686	.571
4W1P25	1.25	400	.950 x 2.0	1.503	1.147	.892	.752	.626
4W1P5	1.5	400	.975 x 2.25	1.704	1.301	1.011	.852	.710
4W2	2.0	400	1.250 x 2.25	2.235	1.706	1.326	1.118	.931
6D1	.001	600	.170 x .75	.408	.311	.242	.204	.170
6D15	.0015	600	.170 x .75	.408	.311	.242	.204	.170
6D22	.0022	600	.187 x .75	.408	.311	.242	.204	.170
6D33	.0033	600	.203 x .75	.408	.311	.242	.204	.170
6D47	.0047	600	.234 x .75	.408	.311	.242	.204	.170
6D68	.0068	600	.265 x .75	.408	.311	.242	.204	.170
6S1	.01	600	.290 x .75	.408	.311	.242	.204	.170
6S15	.015	600	.312 x .875	.408	.311	.242	.204	.170
6S22	.022	600	.335 x .875	.408	.311	.242	.204	.170
6S33	.033	600	.350 x 1.0	.408	.311	.242	.204	.170
6S47	.047	600	.415 x 1.0	.408	.311	.242	.204	.170
6S68	.068	600	.500 x 1.0	.429	.327	.255	.215	.179
6P1	.1	600	.520 x 1.375	.531	.405	.315	.266	.221
6P15	.15	600	.625 x 1.375	.555	.424	.329	.278	.231
6P22	.22	600	.660 x 1.625	.630	.481	.374	.315	.263
6P33	.33	600	.687 x 2.0	1.080	.824	.641	.540	.450
6P47	.47	600	.855 x 2.0	1.383	1.056	.821	.692	.576
6P68	.68	600	.970 x 2.0	1.854	1.415	1.100	.927	.773
6W1	1.0	600	1.165 x 2.50	2.925	2.233	1.736	1.463	1.219
6W1P25	1.25	600	1.340 x 2.50	3.159	2.411	1.874	1.580	1.316
6W1P5	1.5	600	1.275 x 3.0	3.828	2.922	2.271	1.914	1.595
6W2	2.0	600	1.460 x 3.0	4.785	3.653	2.839	2.393	1.994

*Larger Quantity Prices on Request

TYPE MFP FLAT POLYESTER® WRAP CAPACITORS

Similar to type WMF capacitors but designed with a flat, pressed section to give an oval configuration. Polyester dielectric, tough outer film wrap and epoxy end seals. High resistance to humidity.

Operating Temperature: −55° C to +125° C; no derating at 85° C; derate 10% at 100° C; 50% at 125° C. **Tolerance:** ±10%, 50 WVDC; ±20%, all others. Other tolerances also available; prices on request.

50 WVDC, ±10% TOL.

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MFP05S1-10	.01	$0.432	$0.324	$0.252	$0.216	$0.18
MFP05S12-10	.012	.432	.324	.252	.216	.18
MFP05S15-10	.015	.432	.324	.252	.216	.18
MFP05S18-10	.018	.432	.324	.252	.216	.18
MFP05S22-10	.022	.468	.351	.273	.234	.195
MFP05S27-10	.027	.468	.351	.273	.234	.195
MFP05S33-10	.033	.468	.351	.273	.234	.195
MFP05S39-10	.039	.468	.351	.273	.234	.195
MFP05S47-10	.047	.468	.351	.273	.234	.195
MFP05S5-10	.050	.468	.351	.273	.234	.195
MFP05S56-10	.056	.468	.351	.273	.234	.195
MFP05S68-10	.068	.468	.351	.273	.234	.195
MFP05S82-10	.082	.504	.378	.294	.252	.21
MFP05P1-10	.10	.54	.405	.315	.27	.225
MFP05P15-10	.15	.576	.432	.336	.288	.24
MFP05P18-10	.18	.612	.459	.357	.306	.255
MFP05P22-10	.22	.612	.459	.357	.306	.255
MFP05P27-10	.27	.648	.486	.378	.324	.27
MFP05P33-10	.33	.684	.513	.399	.342	.285
MFP05P39-10	.39	.72	.54	.42	.36	.30
MFP05P47-10	.47	.756	.567	.441	.378	.315
MFP05P5-10	.50	.756	.567	.441	.378	.315
MFP05P56-10	.56	.792	.594	.462	.396	.33
MFP05P68-10	.68	.828	.621	.483	.414	.345
MFP05P82-10	.82	.90	.675	.525	.45	.375
MFP05W1-10	1.0	1.152	.864	.672	.576	.48
MFP05W1P25-10	1.25	1.332	.999	.777	.666	.555
MFP05W1P5-10	1.5	1.512	1.134	.882	.756	.63
MFP05W2-10	2.0	1.836	1.377	1.071	.918	.765
MFP05W3-10	3.0	2.52	1.89	1.47	1.26	1.05
MFP05W4-10	4.0	3.204	2.403	1.869	1.602	1.335
MFP05W5-10	5.0	3.708	2.781	2.163	1.854	1.545

100 WVDC, ±20% TOL.

MFP1S22	.022	$0.33	$0.248	$0.193	$0.165	$0.138
MFP1S33	.033	.375	.281	.219	.188	.156
MFP1S47	.047	.375	.281	.219	.188	.156
MFP1S68	.068	.375	.281	.219	.188	.156
MFP1P1	.10	.435	.326	.254	.218	.181
MFP1P15	.15	.474	.356	.277	.237	.198

CONTINUED ON FOLLOWING PAGE

TYPE MFP FLAT POLYESTER® WRAP CAPACITORS (CONT'D)

100 WVDC, ±20% TOL.

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MFP1P22	.22	.516	.387	.301	.258	.215
MFP1P33	.33	.555	.416	.324	.278	.231
MFP1P47	.47	.594	.446	.347	.297	.248
MFP1P68	.68	.672	.504	.392	.336	.28
MFP1W1	1.0	.906	.68	.529	.453	.378
MFP1W1P25	1.25	1.08	.81	.63	.54	.45
MFP1W1P5	1.5	1.224	.918	.714	.612	.51
MFP1W2	2.0	1.476	1.107	.861	.738	.615

200 WVDC, ±20% TOL.

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MFP2S15	.015	$0.33	$0.248	$0.193	$0.165	$0.138
MFP2S22	.022	.33	.248	.193	.165	.138
MFP2S33	.033	.375	.281	.219	.188	.156
MFP2S47	.047	.375	.281	.219	.188	.156
MFP2S68	.068	.375	.281	.219	.188	.156
MFP2P1	.10	.435	.326	.254	.218	.181
MFP2P15	.15	.474	.356	.277	.237	.198
MFP2P22	.22	.516	.387	.301	.258	.215
MFP2P33	.33	.555	.416	.324	.278	.231
MFP2P47	.47	.594	.446	.347	.297	.248

200 WVDC, ±20% TOL.

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MFP2P68	.68	.672	.504	.392	.336	.28
MFP2W1	1.0	.906	.68	.529	.453	.378
MFP2W1P25	1.25	1.08	.81	.63	.54	.45
MFP2W1P5	1.5	1.224	.918	.714	.612	.51
MFP2W2	2.0	1.476	1.107	.861	.738	.615

400 WVDC, ±20% TOL.

MFP4S15	.015	$0.375	$0.281	$0.219	$0.188	$0.156
MFP4S22	.022	.375	.281	.219	.188	.156
MFP4S33	.033	.375	.281	.219	.188	.156
MFP4S47	.047	.414	.311	.242	.207	.173
MFP4S68	.068	.414	.311	.242	.207	.173
MFP4P1	.10	.435	.326	.254	.218	.181
MFP4P15	.15	.435	.326	.254	.218	.181
MFP4P22	.22	.516	.387	.301	.258	.215
MFP4P33	.33	.753	.565	.439	.377	.314
MFP4P47	.47	.912	.684	.532	.456	.38
MFP4P68	.68	1.08	.81	.63	.54	.45
MFP4W1	1.0	1.248	.936	.728	.624	.52

TYPE MCR NON-INDUCTIVE FILM-WRAP METALLIZED POLYCARBONATE CAPACITORS

The film wrap epoxy end seal encasement offer superior moisture resistance and high operating temperature capacitance stability. Operating Temperature: −55° C to +125° C without voltage derating. Tolerance: ±20%. Capacitance Change: −2.5% +2% with reference to +25° C. Non-inductively wound.

DUAL RATED 50-100 WVDC

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MCR-1P1	.1	$1.089	$0.817	$0.635	$0.545	$0.454
MCR-1P1-10*	.1	1.221	.916	.712	.611	.509
MCR-1P15	.15	1.188	.891	.963	.594	.495
MCR-1P15-10*	.15	1.320	.990	.770	.660	.550
MCR-1P22	.22	1.320	.990	.770	.660	.550
MCR-1P22-10*	.22	1.452	1.089	.847	.726	.605
MCR-1P33	.33	1.452	1.089	.847	.726	.605
MCR-1P33-10*	.33	1.584	1.188	.924	.792	.660
MCR-1P47	.47	1.683	1.262	.982	.842	.701
MCR-1P47-10*	.47	1.848	1.386	1.078	.924	.770
MCR-1P68	.68	1.881	1.411	1.097	.941	.784
MCR-1P68-10*	.68	2.079	1.559	1.213	1.040	.866
MCR-1W1	1.0	2.211	1.658	1.290	1.106	.921
MCR-1W1-10*	1.0	2.442	1.832	1.425	1.221	1.018
MCR-1W1P5	1.5	2.739	2.054	1.598	1.370	1.141
MCR-1W1P5-10*	1.5	3.003	2.252	1.752	1.502	1.251
MCR-1W2	2	3.102	2.327	1.810	1.551	1.293
MCR-1W2-10*	2	3.432	2.574	2.002	1.716	1.430
MCR-1W3	3	3.828	2.871	2.233	1.914	1.595
MCR-1W3-10*	3	4.224	3.168	2.464	2.112	1.760
MCR-1W4	4	4.719	3.539	2.753	2.360	1.966
MCR-1W4-10*	4	5.214	3.911	3.042	2.607	2.173
MCR-1W5	5	5.577	4.183	3.253	2.789	2.324
MCR-1W5-10*	5	6.138	4.604	3.581	3.069	2.558

*±10% tolerance.

600 WVDC

MCR-6S1	.01	$0.858	$0.644	$0.501	$0.429	$0.358
MCR-6S15	.015	.924	.693	5.39	.462	.385
MCR-6S22	.022	1.023	.767	.597	.512	.426
MCR-6S33	.033	1.122	.842	.655	.561	.468
MCR-6S47	.047	1.254	.941	.732	.627	.523
MCR-6S68	.068	1.386	1.040	.809	.693	.578
MCR-6P1	.1	1.518	1.139	.886	.759	.633
MCR-6P15	.15	1.683	1.262	.982	.842	.701
MCR-6P22	.22	1.914	1.436	1.117	.957	.798
MCR-6P33	.33	2.277	1.708	1.328	1.139	.949
MCR-6P47	.47	2.838	2.129	1.656	1.419	1.183
MCR-6P68	.68	3.399	2.549	1.983	1.700	1.416
MCR-6W1	1	4.554	3.416	2.657	2.277	1.898

200 WVDC

CDE No.	Cap., µF	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
MCR-2S1	.01	$0.792	$0.594	$0.462	$0.396	$0.330
MCR-2S15	.015	.792	.594	.462	.396	.330
MCR-2S22	.022	.792	.594	.462	.396	.330
MCR-2S33	.033	.792	.594	.462	.396	.330
MCR-2S47	.047	.891	.668	.520	.446	.371
MCR-2S68	.068	.957	.718	.558	.479	.399
MCR-2P1	.1	.990	.743	.578	.495	.413
MCR-2P15	.15	1.089	.817	.635	.545	.454
MCR-2P22	.22	1.188	.891	.693	.594	.495
MCR-2P33	.33	1.320	.990	.770	.660	.550
MCR-2P47	.47	1.518	1.139	.886	.759	.633
MCR-2P68	.68	1.716	1.287	1.001	.858	.715
MCR-2W1	1	2.013	1.510	1.174	1.007	.839
MCR-2W1P5	1.5	2.475	1.856	1.444	1.238	1.031
MCR-2W2	2	2.838	2.129	1.656	1.419	1.183
MCR-2W3	3	3.498	2.624	2.041	1.749	1.458
MCR-2W4	4	4.290	3.218	2.503	2.145	1.788
MCR-2W5	5	5.082	3.812	2.965	2.541	2.118

400 WVDC

MCR-4S1	.01	$0.792	$0.594	$0.462	$0.396	$0.330
MCR-4S15	.015	.792	.594	.462	.396	.330
MCR-4S22	.022	.858	.644	.501	.429	.358
MCR-4S33	.033	.891	.668	.520	.446	.371
MCR-4S47	.047	.990	.743	.578	.495	.413
MCR-4S68	.068	1.056	.792	.616	.528	.440
MCR-4P1	.1	1.155	.866	.674	.578	.481
MCR-4P15	.15	1.320	.990	.770	.660	.550
MCR-4P22	.22	1.518	1.139	.886	.759	.633
MCR-4P33	.33	1.782	1.337	1.040	.891	.743
MCR-4P47	.47	2.178	1.634	1.271	1.089	.908
MCR-4P68	.68	2.541	1.096	1.482	1.271	1.059
MCR-4W1	1.0	3.102	2.327	1.810	1.551	1.293
MCR-4W1P5	1.5	3.894	2.921	2.272	1.947	1.623
MCR-4W2	2	5.148	3.861	3.003	2.574	2.145
MCR-4W3	3	6.237	4.678	3.638	3.119	2.599

TYPE NFR PI CIRCUIT—TUBULAR STYLE FILTERS

NFR tubular PI filters are designed for high attenuation of EMI over the ranges of 150 kHz to 10 GHz. Meet the performance requirements of MIL-F-15733. Can be used for a wide variety of EMC specifications. Designed for bulkhead, panel or chassis shielded mounting. When properly mounted, mutual coupling is eliminated. Case is grounded. Either terminal can be used for input or output connection.

CDE Number	Amps	Volts AC	Volts DC	Line Frequency Hz	Overall Size, In. Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50-99	100-499	500 Up
NFR113-9	0.5	. . . . .	100	. . . . .	0.671 x 1.781	$16.47	$10.98	$ 8.24	$ 7.41	$ 5.49
NFR113-1A	0.5	125	400	0–400	1.000 x 2.873	12.70	8.47	6.35	5.72	5.08
NFR100-6	1.0	. . . . .	100	. . . . .	1.000 x 3.686	13.85	9.24	6.93	6.23	5.54
NFR119-1	1.0	125	400	0–400	1.000 x 3.373	15.23	10.15	7.61	6.85	6.09
NFR100-8A*	1.0	250	600	0–60	1.000 x 3.811	12.00	8.00	6.00	5.40	4.80
NFR110-4A*	3.0	250	600	0–60	1.125 x 4.624	18.53	12.35	9.26	8.34	7.41
NFR101-8	5.0	. . . . .	100	. . . . .	1.250 x 4.436	17.65	11.77	8.83	7.94	7.06
NFR121-1	5.0	125	400	0–400	1.250 x 3.841	20.53	13.69	10.26	9.24	8.21
NFR101-4A*	5.0	250	600	0–60	1.125 x 4.661	19.90	13.27	9.95	8.96	7.96
NFR136-1	10.0	. . . . .	100	. . . . .	1.375 x 3.935	23.05	15.37	11.53	10.37	9.22
NFR122-1	10.0	125	400	0–400	1.250 x 5.062	24.95	16.64	12.48	11.23	9.98
NFR102-6A*	10.0	250	600	0–60	1.500 x 4.874	24.45	16.30	12.23	11.00	9.78
NFR137-1	20.0	. . . . .	100	. . . . .	1.500 x 5.374	30.13	20.08	15.06	13.56	12.05
NFR123-1	20.0	125	400	0–400	1.500 x 5.280	32.55	21.70	16.28	14.65	13.02
NFR111-2A*	20.0	250	600	0–60	1.750 x 6.562	34.75	23.17	17.38	15.64	13.90
NFR112-7	30.0	125	400	0–400	2.250 x 6.249	65.35	43.57	32.68	29.41	26.14
NFR112-1A*	30.0	250	600	0–60	2.250 x 6.155	56.85	37.90	28.43	25.58	22.74
NFR103-15	50.0	125	400	0–400	2.250 x 6.093	73.25	48.84	36.63	32.96	29.30
NFR103-5A*	50.0	250	600	0–60	2.250 x 6.155	76.90	51.27	38.45	34.61	30.76

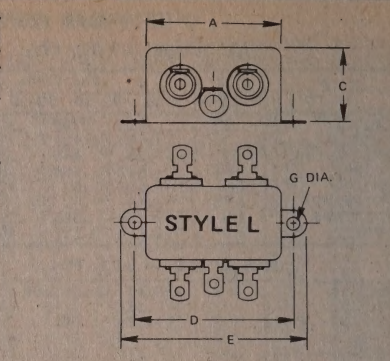
*UL Listed.

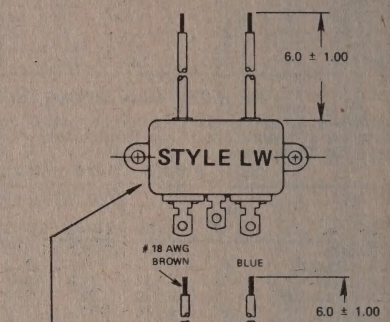
CORNELL-DUBILIER APF Power Line Filters

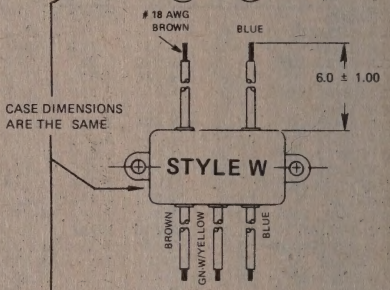
A line of stock filters for most electro-magnetic interference (EMI) applications. For line-to-line and line-to-ground uses. **Rated Voltage:** 115–250 VAC, 50–60 Hz. **Tested Dielectric Strength:** 2100 VDC. **Leakage Current:** 0.5 mA at 115 VAC; 1.0 mA at 250 VAC. **Insertion Loss Curves:** Measured in 50-ohm system per MIL-STD-220. UL recognition for data processing. **Applications include:** business machines, office machines, copy machines, computer systems, calculators, disc drives, printers, tape drives, microwave ovens, plus other major uses.

Rating (A.)	Part* No. APF-	A ± .031	B ± .031	C ± .031	D ± .016	E ± .031	F ± .016	G ± .005	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	1000-Up
	110L	1.81	1.00	1.00	2.12	2.50	....	.187	$6.12	$5.49	$4.88	$4.27	$3.66	$3.07
1	110LW	1.81	1.00	1.00	2.12	2.50	....	.187	6.22	5.60	4.97	4.35	3.73	3.14
	110W	1.81	1.00	1.00	2.12	2.50	....	.187	6.33	5.70	5.05	4.43	3.79	3.19
	120L	1.81	1.00	1.00	2.12	2.50	....	.187	7.16	6.03	5.47	4.92	4.37	3.82
1	120LW	1.81	1.00	1.00	2.12	2.50	....	.187	7.27	6.13	5.56	4.94	4.43	3.87
	120W	1.81	1.00	1.00	2.12	2.50	....	.187	7.37	6.22	5.64	5.07	4.49	3.92
	130L	2.00	2.00	1.12	2.38	2.75	....	.187	10.16	9.13	8.10	7.10	6.09	5.11
1	130LW	2.00	2.00	1.12	2.38	2.75	....	.187	10.25	9.22	8.19	7.16	6.15	5.18
	130W	2.00	2.00	1.12	2.38	2.75	....	.187	10.35	9.32	8.28	7.25	6.21	5.22
	140L	2.00	2.00	1.12	2.38	2.75	....	.187	11.29	10.14	9.00	7.89	6.76	5.68
1	140LW	2.00	2.00	1.12	2.38	2.75	....	.187	11.39	10.24	9.10	7.96	6.83	5.75
	140W	2.00	2.00	1.12	2.38	2.75	....	.187	11.50	10.35	9.20	8.05	6.90	5.80
	150L*	2.00	2.00	1.12	2.38	2.75	....	.187	8.95	7.54	6.83	6.15	5.46	4.77
1	150LW*	2.00	2.00	1.12	2.38	2.75	....	.187	9.08	7.66	6.95	6.17	5.53	4.83
	150W*	2.00	2.00	1.12	2.38	2.75	....	.187	9.21	7.77	7.05	6.33	5.61	4.90
	210L	1.81	1.00	1.00	2.12	2.50	....	.187	5.54	4.97	4.42	3.87	3.32	2.79
2	210LW	1.81	1.00	1.00	2.12	2.50	....	.187	5.60	5.03	4.47	3.92	3.35	2.82
	210W	1.81	1.00	1.00	2.12	2.50	....	.187	5.64	5.07	4.50	3.95	3.38	2.84
	220L	1.81	1.00	1.00	2.12	2.50	....	.187	6.58	5.55	5.05	4.56	4.05	3.55
2	220LW	1.81	1.00	1.00	2.12	2.50	....	.187	6.64	5.60	5.10	4.59	4.09	3.58
	220W	1.81	1.00	1.00	2.12	2.50	....	.187	6.69	5.65	5.14	4.63	4.11	3.61
	230L	2.00	2.00	1.12	2.38	2.75	....	.187	10.72	9.62	8.55	7.49	6.41	5.40
2	230LW	2.00	2.00	1.12	2.38	2.75	....	.187	10.82	9.69	8.61	7.53	6.46	5.43
	230W	2.00	2.00	1.12	2.38	2.75	....	.187	10.93	9.72	8.64	7.58	6.48	5.45
	240L	2.00	2.00	1.12	2.38	2.75	....	.187	11.89	10.67	9.49	8.31	7.11	5.99
2	240LW	2.00	2.00	1.12	2.38	2.75	....	.187	12.00	10.77	9.58	8.39	7.18	6.05
	240W	2.00	2.00	1.12	2.38	2.75	....	.187	12.06	10.82	9.63	8.43	7.21	6.08
	250L*	2.00	2.00	1.12	2.38	2.75	....	.187	8.22	6.94	6.31	5.70	5.06	4.43
2	250LW*	2.00	2.00	1.12	2.38	2.75	....	.187	8.30	7.00	6.37	5.74	5.11	4.47
	250W*	2.00	2.00	1.12	2.38	2.75	....	.187	8.36	7.06	6.43	5.78	5.14	4.51
	310L	1.75	1.25	1.12	2.12	2.50	....	.187	6.33	5.70	5.05	4.42	3.80	3.20
3	310LW	1.75	1.25	1.12	2.12	2.50	....	.187	6.43	5.80	5.15	4.50	3.87	3.25
	310W	1.75	1.25	1.12	2.12	2.50	....	.187	6.69	6.01	5.34	4.67	4.00	3.36
	320L	1.75	1.25	1.12	2.12	2.50	....	.187	7.37	6.22	5.64	5.07	4.49	3.92
3	320LW	1.75	1.25	1.12	2.12	2.50	....	.187	7.48	6.31	5.73	5.14	4.56	3.97
	320W	1.75	1.25	1.12	2.12	2.50	....	.187	7.73	6.50	5.89	5.29	4.68	4.08
	330L	2.00	2.00	1.12	2.38	2.75	....	.187	9.87	8.33	7.67	6.88	6.01	5.25
3	330LW	2.00	2.00	1.12	2.38	2.75	....	.187	9.96	8.41	7.74	6.95	6.07	5.30
	330W	2.00	2.00	1.12	2.38	2.75	....	.187	10.01	8.45	7.78	6.98	6.10	5.33
	340L	2.00	2.00	1.12	2.38	2.75	....	.187	11.50	10.35	9.20	8.05	6.90	5.80
3	340LW	2.00	2.00	1.12	2.38	2.75	....	.187	11.60	10.45	9.29	8.39	6.97	5.86
	340W	2.00	2.00	1.12	2.38	2.75	....	.187	11.81	10.03	8.92	7.81	6.69	5.62
	350L*	2.00	2.00	1.50	2.38	2.75	....	.187	9.21	7.77	7.05	6.33	5.61	4.90
3	350LW*	2.00	2.00	1.50	2.38	2.75	....	.187	9.35	7.88	7.16	6.43	5.70	4.96
	350W*	2.00	2.00	1.50	2.38	2.75	....	.187	9.66	8.12	7.36	6.61	5.85	5.10
	510L	1.75	1.25	1.12	2.12	2.50	....	.187	5.64	5.07	4.50	3.96	3.38	2.84
5	510LW	1.75	1.25	1.12	2.12	2.50	....	.187	5.80	5.23	4.66	4.08	3.49	2.94
	510W	1.75	1.25	1.12	2.12	2.50	....	.187	5.96	5.38	4.79	4.18	3.58	3.02
	520L	1.75	1.25	1.12	2.12	2.50	....	.187	6.69	5.65	5.14	4.63	4.11	3.61
5	520LW	1.75	1.25	1.12	2.12	2.50	....	.187	6.85	5.79	5.26	4.65	4.21	3.69
	520W	1.75	1.25	1.12	2.12	2.50	....	.187	7.00	5.94	5.40	4.85	4.30	3.76
	530L	2.00	2.00	1.12	2.38	2.75	....	.187	10.82	9.73	8.65	7.56	6.49	5.45
5	530LW	2.00	2.00	1.12	2.38	2.75	....	.187	10.93	9.89	8.79	7.70	6.59	5.55
	530W	2.00	2.00	1.12	2.38	2.75	....	.187	11.13	10.03	8.92	7.81	6.69	5.62
	540L	2.00	2.00	1.12	2.38	2.75	....	.187	12.01	10.80	9.60	8.39	7.20	6.05
5	540LW	2.00	2.00	1.12	2.38	2.75	....	.187	12.13	10.90	9.70	8.47	7.27	6.11
	540W	2.00	2.00	1.12	2.38	2.75	....	.187	12.19	10.95	9.75	8.51	7.31	6.14
	550L*	2.00	2.00	1.50	2.38	2.75	....	.187	8.36	7.06	6.43	5.78	5.13	4.55
5	550LW*	2.00	2.00	1.50	2.38	2.75	....	.187	8.56	7.23	6.57	5.81	5.26	4.61
	550W*	2.00	2.00	1.50	2.38	2.75	....	.187	8.75	7.43	6.75	6.06	5.37	4.70
	1010L	1.75	1.25	1.12	2.12	2.50	....	.187	6.22	5.60	4.97	4.35	3.73	3.14
10	1010LW	1.75	1.25	1.12	2.12	2.50	....	.187	6.33	5.70	5.05	4.43	3.79	3.20
	1010W	1.75	1.25	1.12	2.12	2.50	....	.187	6.43	5.80	5.15	4.50	3.87	3.25
	1020L	1.75	1.25	1.12	2.12	2.50	....	.187	7.27	6.13	5.56	5.00	4.43	3.87
10	1020LW	1.75	1.25	1.12	2.12	2.50	....	.187	7.37	6.22	5.64	5.07	4.49	3.92
	1020W	1.75	1.25	1.12	2.12	2.50	....	.187	7.48	6.31	5.73	5.14	4.56	3.97
	1030L	2.00	2.00	1.50	2.38	2.78	....	.187	11.39	10.24	9.10	7.96	6.83	5.75
10	1030LW	2.00	2.00	1.50	2.38	2.78	....	.187	11.50	10.35	9.20	8.05	6.90	5.80
	1030W	2.00	2.00	1.50	2.38	2.78	....	.187	11.60	10.45	9.29	8.13	6.97	5.86
	1040L	2.00	2.00	1.50	2.38	2.78	....	.187	12.64	11.36	10.10	9.02	7.58	6.38
10	1040LW	2.00	2.00	1.50	2.38	2.78	....	.187	12.77	11.47	10.20	9.11	7.66	6.44
	1040W	2.00	2.00	1.50	2.38	2.78	....	.187	12.83	11.53	10.25	9.15	7.69	6.47
	1050L*	2.00	2.00	1.50	2.38	2.78	....	.187	9.08	7.66	6.95	6.25	5.53	4.83
10	1050LW*	2.00	2.00	1.50	2.38	2.78	....	.187	9.21	7.77	7.05	6.33	5.61	4.90
	1050W*	2.00	2.00	1.50	2.38	2.78	....	.187	9.35	7.88	7.16	6.42	5.70	4.96
	2010S	2.50	2.00	1.75	2.94	3.31	....	.178	11.76	10.49	9.34	8.19	6.90	5.80
20	2020S	2.50	2.00	1.75	2.94	3.31	....	.178	12.49	11.20	10.05	8.90	7.61	6.51
	2030S	2.88	2.25	2.00	3.38	3.88	1.75	.203	25.08	22.60	20.05	17.55	15.04	12.64
	2040S	2.88	2.25	2.00	3.38	3.88	1.75	.203	27.83	25.09	22.26	19.48	16.70	14.03
20	2050S*	2.88	2.25	2.00	3.38	3.88	1.75	.203	15.62	14.00	12.56	11.13	9.51	8.13
	3010S	2.50	2.00	1.75	2.94	3.31	....	.178	20.90	18.67	16.64	14.58	12.28	10.33
	3020S	2.50	2.00	1.75	2.94	3.31	....	.178	21.85	19.62	17.59	15.53	13.23	11.28
30	3030S	2.88	2.25	2.00	3.38	3.88	1.75	.203	23.82	21.38	19.17	16.94	14.42	12.29
	3040S	2.88	2.25	2.00	3.38	3.88	1.75	.203	26.44	23.13	21.27	18.80	16.00	13.64

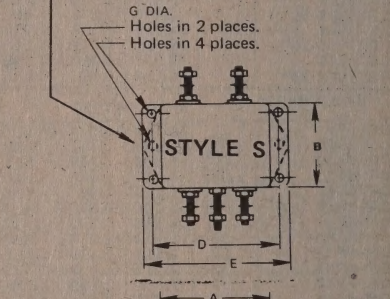
*For low-frequency applications.

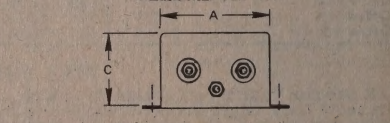




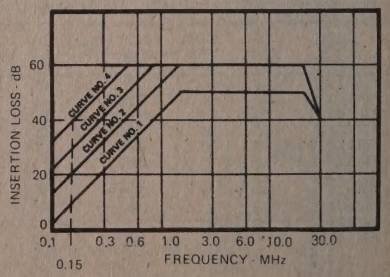


CASE DIMENSIONS ARE THE SAME





TYPICAL INSERTION LOSS



APF FILTERS ALSO ARE STOCKED IN AC POWER LINE CONNECTOR SERIES FOR USE WITH DETACHABLE THREE CONDUCTOR LINE CORDS.

CD6—CD42 DIPPED SILVERED MICAS

Range: −55° C to +125° C. **Temp. Characteristic:** Indicated by 3rd letter in number (e.g., CD10CD050D): C, ±200 ppm/° C (drift, ±0.5%); E, −20 to +100 ppm/° C (drift, ±sum of 0.1% and .1 pF); F, 0 to +70 ppm/° C (drift, ±sum of 0.05% and .1 pF). **Tolerance:** ±5% unless otherwise noted (many values available in ±20%, ±2%, ±1%). **Voltage:** 500 WVDC unless otherwise noted. For applications that need high stability, high Q, reliability, small size, protection against moisture and temperature extremes. **Note:** CD6 and CD7 types not available in MIL version.

CDE No.*	MIL No.	Cap., pF	Net Each, Lots of 1-24	25-99	100-499
CD6CD010§		1	$0.36	$0.24	$0.18
CD6CD020C§		2	.36	.24	.18
CD6CD030C§		3	.36	.24	.18
CD6CD040C§		4	.36	.24	.18
CD6CD050C§		5	.36	.24	.18
CD6CD060C§		6	.36	.24	.18
CD6CD070C§		7	.36	.24	.18
CD6CD080C§		8	.36	.24	.18
CD6CD090C§		9	.36	.24	.18
CD6CD100K†		10	.36	.24	.18
CD6CD110K†		11	.36	.24	.18
CD6CD120K†		12	.37	.25	.19
CD6CD150K†		15	.37	.25	.19
CD6CD180K†		18	.37	.25	.19
CD6CD200J		20	.41	.27	.21
CD6CD220J		22	.43	.29	.22
CD6ED240J		24	.43	.29	.22
CD6ED270J		27	.43	.29	.22
CD6ED300J		30	.43	.29	.22
CD6ED330J		33	.45	.30	.23
CD6ED360J		36	.45	.30	.23
CD6ED390J		39	.45	.30	.23
CD6ED430J		43	.45	.30	.23
CD6ED470J		47	.45	.30	.23
CD6ED500J		50	.48	.32	.24
CD6ED510J		51	.48	.32	.24
CD6ED560J		56	.48	.32	.24
CD6ED620J		62	.48	.32	.24
CD6ED680J		68	.52	.35	.26
CD6ED750J		75	.52	.35	.26
CD6ED820J‡		82	.54	.36	.27
CD6EC910J‡		91	.54	.36	.27
CD6FC101J‡		100	.54	.36	.27
CD6FC111J‡		110	.56	.37	.28
CD6FC121J‡		120	.56	.37	.28
CD6CA010C#		1	.28	.18	.14
CD6CA020§#		2	.28	.18	.14
CD6CA030C§#		3	.28	.18	.14
CD6CA040C§#		4	.28	.18	.14
CD6CA050C§#		5	.28	.18	.14
CD6CA060C§#		6	.28	.18	.14
CD6CA070C§#		7	.28	.18	.14
CD6CA080C§#		8	.28	.18	.14
CD6CA090C§#		9	.28	.18	.14
CD6CA100K†#		10	.28	.18	.14
CD6CA100K†#		11	.28	.18	.14
CD6CA120J#		12	.32	.21	.16
CD6CA150J#		15	.32	.22	.16
CD6CA180J#		18	.32	.22	.16
CD6CA200J#		20	.32	.22	.16
CD6CA220J#		22	.33	.22	.17
CD6EA240J#		24	.33	.22	.17
CD6EA270J#		27	.33	.22	.17
CD6EA300J#		30	.33	.22	.17
CD6EA330J#		33	.33	.22	.17
CD6EA360J#		36	.34	.23	.17
CD6EA390J#		39	.34	.23	.17
CD6EA390J#		39	.34	.23	.17
CD6EA430J#		43	.35	.23	.18
CD6EA470J#		47	.35	.23	.18
CD6EA500J#		50	.36	.24	.18
CD6EA510J#		51	.36	.24	.18
CD6EA560J#		56	.36	.24	.18
CD6EA620J#		62	.37	.25	.19
CD6EA680J#		68	.38	.26	.19
CD6EA750J#		75	.40	.27	.20
CD6EA820J#		82	.43	.29	.21
CD6EA910J#		91	.45	.30	.23
CD6EA101J#		100	.45	.30	.23
CD6EA111J#		110	.50	.33	.25
CD6EA121J#		120	.50	.33	.25
CD7FD131J		130	.56	.38	.28
CD7FD151J		150	.56	.38	.28
CD7FD161J		160	.58	.39	.29
CD7FD181J		180	.59	.39	.29
CD7FC201J‡		200	.62	.41	.31
CD7FC221J‡		220	.65	.43	.33
CD7FC241J‡		240	.67	.45	.34
CD7FC271J‡		270	.72	.48	.36
CD7FC301J‡		300	.74	.49	.37
CD7FA331J#		330	.80	.54	.40
CD7FA361J#		360	.84	.56	.42
CD7FA391J#		390	.84	.56	.42
CD7FA431J#		430	.84	.56	.42
CD7FA471J#		470	.88	.59	.44
CD7FA511J#		510	.92	.62	.46
CD7FA561J#		560	.96	.64	.48
CD7FA621J#		620	1.01	.67	.50
CD7FA681J#		680	1.20	.80	.60
CD7FA751J#		750	1.28	.86	.64
CD7FA821J#		820	1.33	.88	.66
CD7FA911J#		910	1.41	.94	.70
CD7FA102J#		1000	$1.57	$1.04	$0.78
CD7FA112J#		1100	1.61	1.07	.80
CD7FA122J#		1200	1.65	1.10	.82
CD7FA132J#		1300	1.85	1.23	.92
CD7FA152J#		1500	2.05	1.37	1.02
CD10CD010D*	CM04CD10D	1	.37	.25	.19
CD10CD020D*		2	.37	.25	.19
CD10CD030D*		3	.37	.25	.19
CD10CD050D*	CM04CD050D	5	.37	.25	.19
CD10CD060D*	CM04CD060D	6	.37	.25	.19
CD10CD070D*	CM04CD070D	7	.37	.25	.19
CD10CD080D*	CM04CD080D	8	.37	.25	.19
CD10CD100J	CM04CD100D	10	.37	.25	.19
CD10CD120J	CM04CD120D	12	.26	.17	.13
CD10CD150J	CM04CD150D	15	.26	.17	.13
CD10CD180J	CM04CD180D	18	.26	.17	.13
CD10ED200J	CM04ED200J	20	.26	.17	.13
CD10ED220J	CM04ED220J	22	.26	.17	.13
CD10ED240J	CM04ED240J	24	.27	.18	.13
CD10ED270J	CM04ED270J	27	.27	.18	.13
CD10ED300J	CM04ED300J	30	.27	.18	.13
CD10ED330J	CM04ED330J	33	.27	.18	.13
CD10ED360J	CM04ED360J	36	.27	.18	.14
CD10ED390J	CM04ED390J	39	.27	.18	.14
CD10ED430J	CM04ED430J	43	.27	.18	.14
CD10ED470J	CM04ED470J	47	.28	.18	.14
CD10ED500J		50	.28	.18	.14
CD10ED510J	CM04ED510J	51	.28	.18	.14
CD10ED560J	CM04ED560J	56	.29	.19	.14
CD10ED620J	CM04ED620J	62	.29	.19	.14
CD10ED680J	CM04ED680J	68	.29	.20	.15
CD10ED750J	CM04ED750J	75	.29	.20	.15
CD10ED820J	CM04ED820J	82	.30	.20	.15
CD10FD910J	CM04FD910J	91	.31	.21	.15
CD10FD101J	CM04FD101J	100	.31	.21	.16
CD10FD111J	CM04FD111J	110	.31	.21	.16
CD10FD121J	CM04FD121J	120	.32	.22	.16
CD10FD131J	CM04FD131J	130	.35	.23	.17
CD10FD151J	CM04FD151J	150	.38	.26	.19
CD10FD161J	CM04FD161J	160	.40	.26	.20
CD10FD181J	CM04FD181J	180	.44	.29	.22
CD10FD210J	CM04FD210J	200	.47	.31	.23
CD10FD221J	CM04FD221J	220	.49	.33	.24
CD10FD242J	CM04FD242J	240	.52	.35	.26
CD10FD251J		250	.54	.36	.27
CD10FC271J‡		270	.50	.34	.25
CD10FC301J‡		300	.56	.37	.28
CD10FA331J#		330	.52	.35	.26
CD10FA361J#		360	.56	.37	.28
CD10FA391J#		390	.59	.39	.30
CD15CD010D*	CM05CD010D*	1	.29	.19	.14
CD15CD020D*		2	.29	.19	.14
CD15CD030D*		3	.29	.19	.14
CD15CD040D*		4	.29	.19	.14
CD15CD050D*	CM05CD050D*	5	.29	.19	.14
CD15CD060D*	CM05CD060D*	6	.29	.19	.14
CD15CD070D*	CM050D070D*	7	.29	.19	.14
CD15CD080D*	CM05CD080D*	8	.29	.19	.14
CD15CD100J	CM05CD100D*	10	.29	.19	.14
CD15CD120J	CM05CD120J	12	.29	.19	.14
CD15CD150J	CM05CD150J	15	.29	.19	.14
CD15CD180J	CM05CD180J	18	.29	.19	.14
CD15ED200J	CM05ED200J	20	.23	.16	.12
CD15ED220J	CM05ED220J	22	.23	.16	.12
CD15ED240J	CM05ED240J	24	.23	.16	.12
CD15ED270J	CM05ED270J	27	.23	.16	.12
CD15ED300J	CM05ED300J	30	.23	.16	.12
CD15ED330J	CM05ED330J	33	.23	.16	.12
CD15ED360J	CM05ED360J	36	.23	.16	.12
CD15ED390J	CM05ED390J	39	.23	.16	.12
CD15ED430J	CM05ED430J	43	.23	.16	12
CD15ED470J	CM05ED470J	47	.23	.16	.12
CD15ED500J		50	.23	.16	.12
CD15ED510J	CM05ED510J	51	.23	.16	.12
CD15ED560J	CM05ED560J	56	.23	.16	.12
CD15ED620J	CM05ED620J	62	.23	.16	.12
CD15ED680J	CM05ED680J	68	.23	.16	.12
CD15ED750J	CM05ED750J	75	.23	.16	.12
CD15ED820J	CM05ED820J	82	.23	.16	.12
CD15FD910J	CM05FD910J	91	.24	.16	.12
CD15FD101J	CM05FD101J	100	.24	.16	.12
CD15FD111J	CM05FD111J	110	.26	.17	.13
CD15FD121J	CM05FD121J	120	.26	.17	.13
CD15FD131J	CM05FD131J	130	.27	.18	.14
CD15FD151J	CM05FD151J	150	.27	.18	.14
CD15FD161J	CM05FD161J	160	.30	.20	.15
CD15FD181J	CM05FD181J	180	.32	.21	.16
CD15FD201J	CM05FD201J	200	.32	.21	.16
CD15FD221J	CM05FD221J	220	.34	.23	.17
CD15FD241J	CM05FD241J	240	.36	.24	.18
CD15FD251J		250	.36	.24	.18
CD15FD271J	CM05FD271J	270	.38	.26	.19
CD15FD301J	CM05FD301J	300	.40	.27	.20
CD15FD331J	CM05FD331J	330	.45	.30	.23
CD15FD361J	CM05FD361J	360	.47	.32	.24
CD15FD391J	CM05FD391J	390	.49	.33	.25
CD15FD431J		430	.53	.35	.27
CD15FD471J		470	.55	.37	.28

*Add final suffix **03** when ordering (e.g., CD10CD050D**03**). †Tol., ±10%. ‡300 WVDC. §Tol., ±1 pF. #100 WVDC.. *Tol., ±.5 pF

LARGER QUANTITY DISCOUNTS AVAILABLE ON REQUEST

TYPE CAC CERAMIC CAPACITORS

TYPE CAC__X7R

Miniature, axial-lead, monolithic ceramic capacitors designed for commercial and industrial applications where space and weight are at a premium. Ideally suited for automatic insertion. **Temp. Coef.:** ±15% from −55° C to +125° C. **Capacity Tolerance:** K = ±10%, M = ±20%. **Dissipation Factor:** 2.5% max. **Ins. Res.:** 100,000 megs or 1000 megohm-microfarads, whichever is less. **WVDC:** 50 and 100 volts.

TYPE CAC02X7R

Size: .100″ dia. x .190″ lg.

Cap., pF	CAC02-X7R-	Cap., pF	CAC02-X7R-	Cap., pF	CAC02-X7R-	Cap., pF	CAC02-X7R-
10	100	82	820	680	681	5600	562
12	120	100	101	820	821	5600*	562
1	150	120	121	1000	102	6800	682
18	180	150	151	1200	122	6800*	682
22	220	180	181	1500	152	8200*	822
27	270	220	221	1800	182	10,000*	103
33	330	270	271	2200	222	12,000*	123
39	390	330	331	2700	272	15,000*	153
47	470	390	391	3300	332	18,000*	183
56	560	470	471	3900	392	22,000*	223
68	680	560	561	4700	472		

*50 VDC; all others 100 VDC.

TYPE CAC03X7R

Size: .100″ dia. x .290″ lg.

Cap., pF	CAC03-X7R-	WV DC	Cap., pF	CAC03-X7R-	WV DC	Cap., pF	CAC03-X7R-	WV DC
5600	562	100	12,000	123	100	22,000	223	50
6800	682	100	12,000	123	50	27,000	273	50
8200	822	100	15,000	153	50	33,000	333	50
10,000	103	100	15,000	153	50	39,000	393	50
10,000	103	50	18,000	183	50	47,000	473	50

TYPE CAC04X7R

Size: .145″ dia. x .290″ lg.

Cap., pF	CAC04-X7R-	WV DC	Cap., pF	CAC04-X7R-	WV DC	Cap., pF	CAC04-X7R-	WV DC
10,000	103	100	27,000	273	100	56,000	563	50
12,000	123	100	33,000	333	100	68,000	683	50
15,000	153	100	39,000	393	100	82,000	823	50
18,000	183	100	47,000	473	100	100,000	104	50
22,000	223	100	47,000	473	50			

TYPE CAC05X7R

Size: .145″ dia. x .420″ lg.

Cap., pF	CAC05-X7R-	WV DC	Cap., pF	CAC05-X7R-	WV DC	Cap., pF	CAC05-X7R-	WV DC
10,000	103	100	47,000	473	100	100,000	104	100
12,000	123	100	47,000	473	50	100,000	104	50
15,000	153	100	56,000	563	100	120,000	124	50
18,000	183	100	56,000	563	50	150,000	154	50
22,000	223	100	68,000	683	100	180,000	184	50
27,000	273	100	68,000	683	50	220,000	224	50
33,000	333	100	82,000	823	100	270,000	274	50
39,000	393	100	82,000	823	50			

TYPE CAC__Z5U

Same as the preceding X7R type, but intended for general purpose use. **Temp. Coef.:** +22%, −56% from +10° C to +85° C. **Capacity Tolerance:** M = ±20%; Z = +80%, −20%. **Dissipation Factor:** 3% max. **Ins. Res.:** 10,000 megs or 100 megohm-microfarads, whichever is less. **WVDC:** 50 and 100 volts.

TYPE CAC02Z5U

Size: .100″ dia. x .190″ lg.

Cap., pF	CAC02-Z5U-	WV DC	Cap., pF	CAC02-Z5U-	WV DC	Cap., pF	CAC02-Z5U-	WV DC
1000	102	100	3900	392	100	15,000	153	100
1200	122	100	4700	472	100	18,000	183	100
1500	152	100	5600	562	100	22,000	223	100
1800	182	100	6800	682	100	27,000	273	50
2200	222	100	8200	822	100	33,000	333	50
2700	272	100	10,000	103	100	39,000	393	50
3300	332	100	12,000	123	100	47,000	473	50

TYPE CAC03Z5U

Size: .100″ dia. x .290″ lg.

Cap., pF	CAC03-Z5U-	WV DC	Cap., pF	CAC03-Z5U-	WV DC	Cap., pF	CAC03-Z5U-	WV DC
10,000	103	100	27,000	273	100	56,000	563	50
12,000	123	100	33,000	333	100	68,000	683	50
15,000	153	100	39,000	393	100	82,000	823	50
18,000	183	100	47,000	473	100	100,000	104	50
22,000	223	100	56,000	563	100	120,000	124	50

TYPE CAC04Z5U

Size: .145″ dia. x .290″ lg.

Cap., pF	CAC04-Z5U-	WV DC	Cap., pF	CAC04-Z5U-	WV DC	Cap., pF	CAC04-Z5U-	WV DC
68,000	683	100	120,000	124	100	220,000	224	50
82,000	823	100	120,000	124	50	270,000	274	50
100,000	104	100	150,000	154	50			
100,000	104	50	180,000	184	50			

PRICING

Series No.	Cap. Range pF	WV DC V.	Tolerance ±%	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
CAC02-X7R-	10–5600	100	10	$0.65	$0.51	$0.39	$0.345	$0.30
			20	.59	.46	.35	.315	.27
	5700–6800	100	10	.83	.64	.50	.44	.38
			20	.75	.59	.45	.40	.345
	5600–10,000	50	10	.73	.57	.44	.39	.335
			20	.65	.51	.39	.35	.30
	11,000–18,000	50	10	.89	.69	.53	.47	.41
			20	.81	.63	.49	.43	.375
	19,000–22,000	50	10	1.00	.78	.60	.53	.46
			20	.91	.71	.55	.485	.42
CAC03-X7R-	5600–10,000	100	10	.75	.59	.45	.40	.345
			20	.68	.53	.41	.36	.31
	10,000–15,000	100	10	.95	.74	.57	.505	.435
			20	.88	.68	.53	.465	.40
	10,000–22,000	50	10	.84	.65	.50	.45	.385
			20	.75	.59	.45	.40	.345
	23,000–33,000	50	10	.95	.74	.57	.505	.435
			20	.86	.67	.52	.46	.40
	34,000–47,000	50	10	1.10	.86	.66	.585	.505
			20	1.00	.78	.60	.53	.46
CAC04-X7R-	10,000–27,000	100	10	1.13	.88	.68	.60	.52
			20	1.03	.80	.62	.545	.47
	28,000–47,000	100	10	1.25	.98	.75	.665	.575
			20	1.13	.88	.68	.60	.52
	47,000	50	10	1.14	.89	.68	.605	.52
			20	1.05	.81	.62	.55	.48
	48,000–75,000	50	10	1.38	1.07	.83	.73	.63
			20	1.25	.98	.75	.665	.575
	76,000–100,000	50	10	1.55	1.21	.93	.825	.71
			20	1.40	1.09	.84	.745	.64
CAC05-X7R-	10,000–27,000	100	10	1.45	1.13	.87	.77	.68
			20	1.31	1.02	.79	.70	.61
	28,000–47,000	100	10	1.73	1.35	1.04	.92	.79
			20	1.55	1.21	.93	.83	.71
	48,000–100,000	100	10	2.10	1.64	1.26	1.12	.97
			20	1.90	1.48	1.14	1.01	.87
	47,000–75,000	50	10	1.90	1.48	1.14	1.01	.87
			20	1.73	1.35	1.04	.92	.79

Series No.	Cap. Range pF	WV DC V.	Tolerance ±%	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
CAC05-X7R-	76,000–100,000	50	10	2.03	1.58	1.22	1.08	.93
			20	1.83	1.42	1.10	.97	.84
	110,000–180,000	50	10	2.25	1.76	1.35	1.20	1.04
			20	2.05	1.60	1.23	1.09	.94
	190,000–270,000	50	10	2.43	1.89	1.46	1.29	1.12
			20	2.23	1.74	1.34	1.18	1.02
CAC02-Z5U-	1000–10,000	100	20	$0.59	$0.46	$0.35	$0.315	$0.27
			+80,−20	.54	.42	.32	.285	.245
	11,000–22,000	100	20	.65	.51	.39	.345	.30
			+80,−20	.59	.46	.35	.315	.27
	23,000–33,000	50	20	.81	.63	.49	.43	.375
			+80,−20	.75	.58	.45	.40	.345
	34,000–47,000	50	20	.93	.72	.56	.49	.425
			+80,−20	.84	.65	.50	.445	.385
CAC03-Z5U-	10,000–22,000	100	20	.69	.54	.41	.365	.315
			+80,−20	.63	.49	.37	.335	.29
	23,000–47,000	100	20	.76	.60	.46	.405	.35
			+80,−20	.69	.54	.41	.365	.315
	48,000–56,000	100	20	.93	.72	.56	.49	.425
			+80,−20	.84	.65	.51	.445	.385
	56,000–68,000	50	20	.88	.68	.53	.465	.405
			+80,−20	.80	.62	.48	.425	.37
	69,000–120,000	50	20	1.00	.78	.60	.53	.46
			+80,−20	.91	.71	.55	.485	.42
CAC04-Z5U-	68,000–100,000	100	20	1.14	.89	.68	.605	.525
			+80,−20	1.04	.81	.62	.55	.475
	110,000–120,000	100	20	1.26	.99	.76	.67	.58
			+80,−20	1.15	.90	.69	.61	.53
	100,000	50	20	1.08	.84	.65	.57	.495
			+80,−20	.96	.75	.58	.51	.445
	110,000–120,000	50	20	1.21	.95	.73	.645	.56
			+80,−20	1.10	.86	.66	.585	.505
	130,000–180,000	50	20	1.26	.99	.76	.67	.58
			+80,−20	1.15	.90	.69	.61	.53
	190,000–270,000	50	20	1.29	1.10	.85	.75	.65
			+80,−20	1.14	1.00	.77	.685	.59

CORNING® Glass Capacitors

TYPE CYR GLASS CAPACITORS

Fused monolithic construction provides excellent electrical performance, environmental immunity, stability and retraceability. Meets MIL-C-23269 requirements. Available in both axial and radial lead configurations. **WVDC:** 300 V and 500 V, −55° C to +125° C. **Temperature Coefficient:** +140 (±25) ppm/°C, max. deviation, 5 ppm. **Failure Rate (90% Confidence):** 2% in 1000 hours; 1% and .001% also available on request.

TYPE CYR10

Axial lead—.078″ th. x .172″ w. x .344″ lg.

Cap., pF	Part No. Suffixes ±.25pF	±.5pF	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
0.5	-001			22		-045	-046
1.0	-002			24		-047	-048
1.5	-003			27	-049	-050	-051
2.2	-004	-005		30	-052	-053	-054
2.7	-006			33	-055	-056	-057
3.0	-007	-008		36	-058	-059	-060
3.3	-009			39	-061	-062	-063
3.6	-010	-011		43	-064	-065	-066
3.9	-012			47	-067	-068	-069
4.3	-013	-014		51	-070	-071	-072
4.7	-015			56	-073	-074	-075
5.1	-016			62	-076	-077	-078
5.6	-017			68	-079	-080	-081
6.2	-019		-020	75	-082	-083	-084
6.8	-021		-022	82	-085	-086	-087
7.5	-023		-024	91	-088	-089	-090
8.2	-025		-026	100	-091	-092	-093
9.1	-027		-028	110	-094	-095	-096
10	-029		-030	120	-097	-098	-099
11	-031		-032	130	-100	-101	-102
12	-033		-034	150	-103	-104	-105
	±1%	±2%	±5%	160	-106	-107	-108
				180	-109	-110	-111
13		-035	-036	200	-112	-113	-114
15		-037	-038	220*	-115	-116	-117
16		-039	-040	240*	-118	-119	-120
18		-041	-042	270*	-121	-122	-123
20		-043	-044	300*	-124	-125	-126

TYPE CYR15

Axial lead—.109″ th. x .266″ w. x .469″ lg.

Cap., pF	Part No. Suffixes ±1%	±2%	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
220	-001	-002	-003	560*	-031	-032	-033
240	-004	-005	-006	620*	-034	-035	-036
270	-007	-008	-009	680*	-037	-038	-039
300	-010	-011	-012	750*	-040	-041	-042
330	-013	-014	-015	820*	-043	-044	-045
360	-016	-017	-018	910*	-046	-047	-048
390	-019	-020	-021	1000*	-049	-050	-051
430	-022	-023	-024	1100*	-052	-053	-054
470	-025	-026	-027	1200*	-055	-056	-057
510	-028	-029	-030				

TYPE CYR20

Axial lead—.141″ th. x .422″ w. x .734″ lg.

Cap., pF	Part No. Suffixes ±1%	±2%	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
560	-001	-002	-003	1800	-037	-038	-039
620	-004	-005	-006	2000	-040	-041	-042
680	-007	-008	-009	2200	-043	-044	-045
750	-010	-011	-012	2400	-046	-047	-048
820	-013	-014	-015	2700	-049	-050	-051
910	-016	-017	-018	3000	-052	-053	-054
1000	-019	-020	-021	3300	-055	-056	-057
1100	-022	-023	-024	3600*	-058	-059	-060
1200	-025	-026	-027	3900*	-061	-062	-063
1300	-028	-029	-030	4300*	-064	-065	-066
1500	-031	-032	-033	4700*	-067	-068	-069
1600	-034	-035	-036	5100*	-070	-071	-072

TYPE CYR30

Axial lead—.141″ th. x .750″ w. x .766″ lg.

Cap., pF	Part No. Suffixes ±1%	±2%	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
3600	-001	-002	-003	6200	-019	-020	-021
3900	-004	-005	-006	6800*	-022	-023	-024
4300	-007	-008	-009	7500*	-025	-026	-027
4700	-010	-011	-012	8200*	-028	-029	-030
5100	-013	-014	-015	9100*	-031	-032	-033
5600	-016	-017	-018	10,000*	-034	-035	-036

*300 V; all others 500 VDC.

PRICING ON TYPE CYR AXIAL LEAD

Series No.	Cap. Range, pF	Tolerance ±	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	1000-Up
CYR10-	0.5–12	.25pF	$ 5.55	$ 4.83	$ 3.85	$ 3.49	$ 2.60	$1.79
		.5pF	3.94	3.43	2.73	2.48	1.84	1.27
	5.6–12	5%	3.94	3.43	2.73	2.48	1.84	1.27
	13–24†	5%	3.94	3.43	2.73	2.48	1.84	1.27
	25–300†	1%	6.94	6.05	4.82	4.37	3.25	2.24
		5%	4.43	3.86	3.07	2.79	2.07	1.43
CYR15-	220–	1%	5.95	5.18	4.13	3.74	2.78	1.92
	430†	5%	4.43	3.86	3.07	2.79	2.07	1.43
	440–	1%	9.73	8.48	6.75	6.12	4.55	3.14
	1200†	5%	4.84	4.21	3.35	3.04	2.26	1.56
CYR20-	560–	1%	10.29	8.96	7.14	6.47	4.81	3.32
	910†	5%	5.98	5.21	4.15	3.76	2.80	1.93
	920–	1%	10.79	9.40	7.48	6.79	5.05	3.48
	2400†	5%	6.57	5.72	4.56	4.13	3.07	2.12
	2500–	1%	13.61	11.85	9.44	8.56	6.37	4.39
	3000†	5%	6.57	5.72	4.56	4.13	3.07	2.12
	3100–	1%	16.62	14.47	11.52	10.45	7.77	5.36
	5100†	5%	10.39	9.05	7.20	6.53	4.86	3.35
CYR30-	3600–	1%	22.79	19.85	15.80	14.33	10.66	7.35
	4300†	5%	13.76	11.99	9.55	8.66	6.44	4.44
	4400–	1%	25.20	21.95	17.48	15.85	11.79	8.13
	5600†	5%	16.40	14.28	11.37	10.32	7.67	5.29
	5700–	1%	25.79	22.46	17.89	16.22	12.06	8.32
	8200†	5%	17.24	15.01	11.95	10.84	8.06	5.56
	8300–	1%	27.65	24.08	19.18	17.39	12.93	8.92
	10,000†	5%	18.45	16.07	12.79	11.60	8.63	5.95

†Prices on 2% tolerance on request.

TYPE CYR51

Radial lead—.115″ th. x .200″ w. x .300″ lg. WVDC: 300 volts.

Cap., pF	Part No. Suffixes ±.25pF	±.5pF	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
1.0	-001			33	-058	-059	-060
1.5	-002			36	-061	-062	-063
2.2	-003			39	-064	-065	-066
2.7	-004			43	-067	-068	-069
3.0	-005			47	-070	-071	-072
3.3	-006			51	-073	-074	-075
3.6	-007			56	-076	-077	-078
3.9	-008			62	-079	-080	-081
4.3	-009			68	-082	-083	-084
4.7	-010			75	-085	-086	-087
5.1	-011		-012	82	-088	-089	-090
5.6	-013		-014	91	-091	-092	-093
6.2	-015		-016	100	-094	-095	-096
6.8	-017		-018	110	-097	-098	-099
7.5	-019		-020	120	-100	-101	-102
8.2	-021		-022	130	-103	-104	-105
9.1	-023		-024	150	-106	-107	-108
10	-025		-026	160	-109	-110	-111
11	-027		-028	180	-112	-113	-114
12	-029		-030	200	-115	-116	-117
13	-031	-032	-033	220	-118	-119	-120
15	-034	-035	-036	240	-121	-122	-123
16	-037	-038	-039	270	-124	-125	-126
18	-040	-041	-042	300	-127	-128	-129
20	-043	-044	-045	330	-130	-131	-132
22	-046	-047	-048	360	-133	-134	-135
24	-049	-050	-051	390	-136	-137	-138
	±1%	±2%	±5%	430	-139	-140	-141
				470	-142	-143	-144
27	-052	-053	-054	510	-145	-146	-147
30	-055	-056	-057	560	-148	-149	-150

TYPE CYR52

Radial lead—.115″ th. x .300″ w. x .300″ lg. WVDC: 300 volts.

Cap., pF	Part No. Suffixes ±1%	±2%	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
620	-201	-202	-203	820	-210	-211	-212
680	-204	-205	-206	910	-213	-214	-215
750	-207	-208	-209	1000	-216	-217	-218

TYPE CYR53

Radial lead—.115″ th. x .300″ w. x .500″ lg. WVDC: 300 volts.

Cap., pF	Part No. Suffixes ±1%	±2%	±5%	Cap., pF	Part No. Suffixes ±1%	±2%	±5%
1100	-301	-302	-303	1800	-316	-317	-318
1200	-304	-305	-306	2000	-319	-320	-321
1300	-307	-308	-309	2200	-322	-323	-324
1500	-310	-311	-312	2400	-325	-326	-327
1600	-313	-314	-315				

PRICING ON TYPE CYR RADIAL LEAD

Series No.	Cap. Range, pF	Tolerance ±	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	1000-Up
CYR51-	1–5	.25pF	$ 7.32	$ 6.37	$ 5.07	$ 4.60	$3.42	$2.36
	5.1–24	.25pF	7.32	6.37	5.07	4.60	3.42	2.36
		5%	5.27	3.91	3.66	3.32	2.47	1.70
	13–24	2%	6.36	5.54	4.41	4.00	2.97	2.05
	25–100†	1%	7.32	6.37	5.07	4.60	3.42	2.36
		5%	5.27	3.91	3.66	3.32	2.47	1.70
	110–	1%	7.44	6.48	5.16	4.68	3.48	2.40
	270†	5%	5.13	4.97	3.96	3.59	2.67	1.84
	280–	1%	9.02	7.86	6.26	5.67	4.22	2.91
	560†	5%	6.08	5.29	4.21	3.82	2.84	1.96
CYR52-	620–	1%	12.77	11.12	8.86	8.03	5.97	4.12
	1000†	5%	8.12	7.07	5.63	5.11	3.80	2.62
CYR53-	1100–	1%	13.52	11.77	9.37	8.50	6.32	4.36
	1500†	5%	8.12	7.07	5.63	5.11	3.80	2.62
	1600–	1%	14.97	13.04	10.38	9.42	7.00	4.83
	1800†	5%	9.41	8.21	6.54	5.93	4.41	3.04
	1900–	1%	16.34	14.23	11.33	10.28	7.64	5.27
	2400†	5%	10.08	8.78	6.99	6.34	4.71	3.25

†Prices on 2% tolerance on request.

CORNING® Glass-K™ Ceramic Capacitors

MINIATURE GLASS-K™ CERAMIC CAPACITORS

Smaller capacitance values suitable for more critical circuit functions. **Temp. Range:** −55° C to +125° C. **Ins. Res.:** 100,000 megs or 1,000 megs-μF, whichever is less. **Dissipation Factor:** Stability characteristic T less than 1%; U less than 1.5%; V less than 3%. **WVDC:** 50 V. **Size:** CYK01, 0.100″ dia. x 0.250″ lg.; CYK02, 0.140″ dia. x 0.250″ lg. **Note:** Prices apply to standard capacitance decade values only; non-standard value prices on request.

TYPE CYKO1

Corning No. CYKO1-	Cap., pF	Tolerance*	Stability Char.	Net Each, Lots of 1-24	25-99	100-499	500-999	1000 Up
BT271	270	J	T	$3.58	$3.31	$2.65	$1.99	$1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT301	300	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT331	330	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT361	360	J†	T	3.58	3.31	2.65	1.99	1.32
		K†	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT391	390	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT471	470	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT511	510	J†	T	3.58	3.31	2.65	1.99	1.32
		K†	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT561	560	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT621	620	J†	T	3.58	3.31	2.65	1.99	1.32
		K†	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT681	680	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT751	750	J†	T	3.58	3.31	2.65	1.99	1.32
		K†	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT821	820	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT102	1000	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT122	1200	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT152	1500	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT182	1800	J	T	3.58	3.31	2.65	1.99	1.32
		K	T	2.55	2.37	1.89	1.41	.94
		M†	T	2.29	2.13	1.69	1.29	.85
BT222	2200	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT272	2700	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT332	3300	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT392	3900	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT472	4700	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT562	5600	J	T	3.94	3.65	2.29	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT682	6800	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT822	8200	J	T	3.94	3.65	2.92	2.10	1.46
		K	T	2.82	2.61	2.09	1.58	1.05
		M†	T	2.52	2.32	1.86	1.40	.93
BT103	10,000	J	T	4.47	4.14	3.31	2.48	1.65
		K	T	3.20	2.97	2.37	1.77	1.17
		M†	T	2.34	2.65	2.12	1.59	1.06
BT123	12,000	K	U	5.06	4.69	3.76	2.82	1.87
		M	U	4.50	4.16	3.34	2.50	1.67
BT153	15,000	K	U	5.06	4.69	3.76	2.82	1.87
		M	U	4.50	4.16	3.34	2.50	1.67
BT183	18,000	K	U	5.06	4.69	3.76	2.82	1.87
		M	U	4.50	4.16	3.34	2.50	1.67
BT203	20,000	K	U	5.06	4.69	3.76	2.82	1.87
		M	U	4.50	4.16	3.34	2.50	1.67
BT223	22,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86
BT273	27,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86
BT333	33,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86
BT393	39,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86
BT473	47,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86
BT513	51,000	K	V	5.62	5.21	4.16	3.12	2.09
		M	V	5.03	4.66	3.71	2.79	1.86

*For desired tolerance, add **J** (±5%), **K** (±10%), or **M** (±20%) to Part No. †Not normally stocked; available on special order.

TYPE CYKO2

Corning No. CYKO2-	Cap., pF	Tolerance*	Stability Char.	Net Each, Lots of 1-24	25-99	100-499	500-999	1000 Up
BT123	12,000	J†	T	$7.61	$7.05	$5.64	$4.23	$2.82
		K	T	5.45	5.04	4.04	3.02	2.01
		M	T	4.83	4.49	3.59	2.70	1.78
BT153	15,000	J†	T	7.61	7.05	5.64	4.23	2.82
		K	T	5.45	5.04	4.04	3.02	2.01
		M	T	4.83	4.49	3.59	2.70	1.78
BT183	18,000	J†	T	7.61	7.05	5.64	4.23	2.82
		K	T	5.45	5.04	4.04	3.02	2.01
		M	T	4.83	4.49	3.59	2.70	1.78
BT203	20,000	J†	T	7.61	7.05	5.64	4.23	2.82
		K	T	5.45	5.04	4.04	3.02	2.01
		M	T	4.83	4.49	3.59	2.70	1.78
BU223	22,000	K	U	5.45	5.04	4.04	3.02	2.01
		M	U	4.83	4.49	3.59	2.70	1.78
BU273	27,000	K	U	5.45	5.04	4.04	3.02	2.01
		M	U	4.83	4.49	3.59	2.70	1.78
BU333	33,000	K	U	5.45	5.04	4.04	3.02	2.01
		M	U	4.83	4.49	3.59	2.70	1.78
BU393	39,000	K	U	5.45	5.04	4.04	3.02	2.01
		M	U	4.83	4.49	3.59	2.70	1.78
BV563	56,000	K	V	5.43	4.97	3.61	2.71	1.82
		M	V	4.83	4.43	3.23	2.42	1.61
BV683	68,000	K	V	5.43	4.97	3.61	2.71	1.82
		M	V	4.83	4.43	3.23	2.42	1.61
BV823	82,000	K	V	5.43	4.97	3.61	2.71	1.82
		M	V	4.83	4.43	3.23	2.42	1.61
BV104	100,000	K	V	7.50	6.88	5.00	3.76	2.50
		M	V	6.67	6.11	4.44	3.34	2.22

*For desired tolerance, add **J** (±5%), **K** (±10%), or **M** (±20%) to Part No. †Not normally stocked; available on special order.

MINIATURE BX CAPACITORS

Performance characteristics in accordance with MIL-C-11015. Exclusive glass-ceramic dielectric and unique manufacturing process assure true monolithic structure. Used in bypass, filter and coupling circuits, R-C networks; point of use filtering; suited for automatic insertion. **Temperature Range:** −55° C to +125° C. **Insulation Resistance:** 100,000 megohms or 1,000 megohm-microfarads, whichever is greater. **Dissipation Factor:** 2.5% max. **WVDC:** 50 and 100V. **Size:** CK12, .160″ lg. x .090″ dia.; CK13, .250″ lg. x .090″ dia.; CK14, .390″ lg. x .140″ dia. **Tolerance:** Suffix K, ±10%; M, ±20%.

TYPE CK12

Cap., pF	CK12 BX-	Cap., pF	CK12 BX-	Cap., pF	CK12 BX-	Cap., pF	CK12 BX-
10	100K,M	68	680K,M	470	471K,M	3300	332K,M
12	120K	82	820K	560	561K	3900	392K
15	150K,M	100	101K,M	680	681K,M	4700	472K,M
18	180K	120	121K	820	821K	5600*	562K
22	220K,M	150	151K,M	1000	102K,M	6800*	682K,M
27	270K	180	181K	1200	122K	8200*	822K
33	330K,M	220	221K,M	1500	152K,M	10000*	103K,M
39	390K	270	271K	1800	182K		
47	470K,M	330	331K,M	2200	222K,M		
56	560K	390	391K	2700	272K		

*50 VDC; all others 100 VDC.

TYPE CAMO3M

Cap., pF	CK13 BX-	Cap., pF	CK13 BX-	Cap., pF	CK13 BX-	Cap., pF	CK13 BX-
5600*	562	10,000*	103	18,000	183	33,000	333
6800*	682	12,000	123	22,000	223	39,000	393
8200*	822	15,000	153	27,000	273	47,000	473

*100 VDC; all others 50 VDC.

TYPE CAMO5M

Cap., pF	CK14 BX-	Cap., pF	CK14 BX-	Cap., pF	CK14 BX-	Cap., pF	CK14 BX-
12,000	123	22,000	223	39,000	393	68,000	683
15,000	153	27,000	273	47,000	473	82,000	823
18,000	183	33,000	333	56,000	563	100,000	104

PRICING FOR CK TYPES

Capacitance pF	Tolerance ±	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	1000-Up
CK12							
10–	10%	$0.73	$0.53	$0.41	$0.37	$0.32	$0.275
5600	20%	.67	.48	.37	.34	.29	.245
5700–	10%	.80	.58	.44	.40	.35	.305
10,000	20%	.74	.53	.40	.37	.32	.275
CK13							
5600–	10%	.87	.63	.49	.44	.38	.32
10,000	20%	.80	.57	.44	.41	.34	.29
11,000–	10%	.98	.76	.59	.52	.45	.39
22,000	20%	.88	.68	.53	.465	.40	.35
27,000–	10%	1.15	.90	.69	.61	.53	.46
47,000	20%	1.05	.82	.63	.56	.48	.42
CK14							
12,000–	10%	1.52	1.09	.85	.76	.68	.585
27,000	20%	1.39	1.01	.78	.70	.61	.53
28,000–	10%	1.85	1.33	1.03	.91	.80	.695
47,000	20%	1.64	1.20	.87	.82	.71	.62
56,000–	10%	2.03	1.45	1.14	1.05	.94	.815
100,000	20%	1.85	1.34	1.05	.96	.84	.73

CORNING® Glass Capacitors

CYFM GLASS CAPACITORS

Fusion-sealed, environment-proof capacitors have glass-to-metal seals at leads. Foil and glass element is frozen inside glass. Meet or exceed MIL-C-11272B requirements. Subjected to moisture resistance conditions of MIL-STD-202A, Method 106A for 1200 hours without failure or degradation. **WVDC:** 300 and 500 V, −55° C to +125° C. **Temperature Coefficient:** +140 (±25) ppm/° C at 100 kHz. Varies from +115 ppm/° C at −55° C to +165 ppm/° C at +125° C. Max. deviation, 5 ppm. Drift less than 0.1% or 0.1 pF, whichever is greater. **Tolerance:** Standard, ±5% or ±0.25 pF, whichever is greater; ±10%, ±2% and ±1% on request.

TYPE CYFM10

Size, Min.-Max.: .2969″–.3906″ lg. x .1406″–.2031″ w. x .0469″–.1093″ thick.

No. CYFM-10C-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999‡
0R5C†	0.5	$5.36	$4.67	$3.72	$3.37	$2.51
1R0C†	1.0	5.36	4.67	3.72	3.37	2.51
1R5C†	1.5	5.36	4.67	3.72	3.37	2.51
2R2C†	2.2	5.36	4.67	3.72	3.37	2.51
2R7C†	2.7	5.36	4.67	3.72	3.37	2.51
3R0C†	3.0	5.36	4.67	3.72	3.37	2.51
3R3C†	3.3	5.36	4.67	3.72	3.37	2.51
3R6C†	3.6	5.36	4.67	3.72	3.37	2.51
3R9C†	3.9	5.36	4.67	3.72	3.37	2.51
4R3C†	4.3	5.36	4.67	3.72	3.37	2.51
4R7C†	4.7	5.36	4.67	3.72	3.37	2.51
5R1C†	5.1	5.36	4.67	3.72	3.37	2.51
5R6C†	5.6	5.36	4.67	3.72	3.37	2.51
6R2C†	6.2	5.36	4.67	3.72	3.37	2.51
6R8C†	6.8	5.36	4.67	3.72	3.37	2.51
7R5C†	7.5	5.36	4.67	3.72	3.37	2.51
8R2C†	8.2	5.36	4.67	3.72	3.37	2.51
9R1C†	9.1	5.36	4.67	3.72	3.37	2.51
100C†	10	5.36	4.67	3.72	3.37	2.51
110C†	11	5.36	4.67	3.72	3.37	2.51
120C†	12	5.36	4.67	3.72	3.37	2.51
130J	13	2.05	1.78	1.29	.99	.96
150J	15	2.05	1.78	1.29	.99	.96
160J	16	2.05	1.78	1.29	.99	.96
180J	18	2.05	1.78	1.29	.99	.96
200J	20	2.05	1.78	1.29	.99	.96
220J	22	2.05	1.78	1.29	.99	.96
240J	24	2.05	1.78	1.29	.99	.96
270J	27	2.05	1.78	1.29	.99	.96
300J	30	2.05	1.78	1.29	.99	.96
330J	33	2.05	1.78	1.29	.99	.96
360J	36	2.05	1.78	1.29	.99	.96
390J	39	2.05	1.78	1.29	.99	.96
430J	43	2.05	1.78	1.29	.99	.96
470J	47	2.05	1.78	1.29	.99	.96
510J	51	2.05	1.78	1.29	.99	.96
560J	56	2.05	1.78	1.29	.99	.96
620J	62	2.05	1.78	1.29	.99	.96
680J	68	2.05	1.78	1.29	.99	.96
750J	75	2.05	1.78	1.29	.99	.96
820J	82	2.05	1.78	1.29	.99	.96
910J	91	2.05	1.78	1.29	.99	.96
101J	100	4.28	3.73	2.97	2.69	2.00
111J	110	4.28	3.73	2.97	2.69	2.00
121J	120	4.28	3.73	2.97	2.69	2.00
131J	130	4.28	3.73	2.97	2.69	2.00
151J	150	4.28	3.73	2.97	2.69	2.00
161J	160	4.28	3.73	2.97	2.69	2.00
181J	180	4.28	3.73	2.97	2.69	2.00
201J	200	4.28	3.73	2.97	2.69	2.00
221J*	220	4.28	3.73	2.97	2.69	2.00
241J*	240	4.28	3.73	2.97	2.69	2.00
271J*	270	4.28	3.73	2.97	2.69	2.00
301J*	300	4.28	3.73	2.97	2.69	2.00

TYPE CYFM15

Use prefix CYFM-15-C; Size, Min.-Max.: .4219″–.5156″ lg. x .2344″–.2968″ w. x .0625″–.1562″ thick.

No. CYFM-15C-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999‡
221J	220	$2.57	$2.24	$1.78	$1.62	$1.20
241J	240	2.57	2.24	1.78	1.62	1.20
271J	270	2.57	2.24	1.78	1.62	1.20
301J	300	2.57	2.24	1.78	1.62	1.20
331J	330	2.57	2.24	1.78	1.62	1.20
361J	360	2.57	2.24	1.78	1.62	1.20
391J	390	2.57	2.24	1.78	1.62	1.20
431J	430	2.57	2.24	1.78	1.62	1.20
471J	470	3.53	3.08	2.45	2.22	1.65
511J	510	3.53	3.08	2.45	2.22	1.65
561J*	560	3.53	3.08	2.45	2.22	1.65
621J*	620	3.53	3.08	2.45	2.22	1.65
681J*	680	3.53	3.08	2.45	2.22	1.65
751J*	750	3.53	3.08	2.45	2.22	1.65
821J*	820	3.53	3.08	2.45	2.22	1.65
911J*	910	3.53	3.08	2.45	2.22	1.65
102J*	1000	3.53	3.08	2.45	2.22	1.65
112J*	1100	4.50	3.92	3.12	2.83	2.10
122J*	1200	4.50	3.92	3.12	2.83	2.10

*300 WVDC. †Tolerance ±0.25 pF; all others ±5%. ‡1000 Up prices on request.

TYPE TYO GLASS CAPACITORS

Upright flush mounting in printed circuits with minimum rocking; or, point-to-point wiring. Glass dielectric and foil fused to form single element with high stability. Gold-plated 1¼″ Dumet leads spaced 0.2″. General performance to MIL-C-11272B. **WVDC:** 300 V, −55° C to +125° C. **Temperature Coefficient:** +140 (±25) ppm/° C at 100 kHz. Varies from +115 ppm/° C at −55° C to +165 ppm/° C at +125° C. Maximum deviation at any temperature, 5 ppm. Drift less than 0.1% or 0.1 pF, whichever is greater. **Tol.:** Suffix **J**, ±5%; **K**, ±10% and **C**, ±0.25 pF; ±20%, ±2%, ±1% on request.

TYPE TYO6

Size: .300″ lg. x .200″ w. x .115″ thick. Weight, 0.3–0.4 gram.

Corn. No. CY06-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999§
1R0C	1.0	$5.33	$4.64	$3.70	$3.35	$2.49
1R5C	1.5	5.33	4.64	3.70	3.35	2.49
2R2C	2.2	5.33	4.64	3.70	3.35	2.49
2R7C	2.7	5.12	4.46	3.55	3.22	2.39
3R0C	3.0	5.12	4.46	3.55	3.22	2.39
3R3C	3.3	5.12	4.46	3.55	3.22	2.39
3R6C	3.6	5.12	4.46	3.55	3.22	2.39
3R9C	3.9	5.12	4.46	3.55	3.22	2.39
4R3C	4.3	5.12	4.46	3.55	3.22	2.39
4R7C	4.7	4.93	4.29	3.42	3.10	2.31
5R1J	5.1	4.37	3.81	3.03	2.75	2.04
5R6J	5.6	4.37	3.81	3.03	2.75	2.04
6R2J	6.2	4.37	3.81	3.03	2.75	2.04
6R8J	6.8	4.37	3.81	3.03	2.75	2.04
7R5J	7.5	4.28	3.73	2.97	2.69	2.00
8R2J	8.2	4.28	3.73	2.97	2.69	2.00
9R1J	9.1	4.28	3.73	2.97	2.69	2.00
100J	10	1.83	1.59	1.27	1.15	.86
100K	10	1.46	1.27	1.01	.92	.68
110J	11	1.83	1.59	1.27	1.15	.86
110K	11	1.46	1.27	1.01	.92	.68
120J	12	1.83	1.59	1.27	1.15	.86
120K	12	1.46	1.27	1.01	.92	.68
130J	13	1.86	1.62	1.29	1.17	.87
130K	13	1.46	1.27	1.01	.92	.68
150J	15	1.86	1.62	1.29	1.17	.87
150K	15	1.46	1.27	1.01	.92	.68
160J	16	1.86	1.62	1.29	1.17	.87
160K	16	1.46	1.27	1.01	.92	.68
180J	18	1.86	1.62	1.29	1.17	.87
180K	18	1.46	1.27	1.01	.92	.68
200J	20	1.86	1.62	1.29	1.17	.87
200K	20	1.46	1.27	1.01	.92	.68
220J	22	1.86	1.62	1.29	1.17	.87
220K	22	1.46	1.27	1.01	.92	.68
240J	24	1.86	1.62	1.29	1.17	.87
240K	24	1.46	1.27	1.01	.92	.68
270J	27	1.92	1.67	1.33	1.21	.90
270K	27	1.58	1.38	1.10	.99	.74
300J	30	1.92	1.67	1.33	1.21	.90
300K	30	1.58	1.38	1.10	.99	.74

TYPE CYFM20

Size, Min.-Max.: .6719″–.7968″ lg. x .3750″–.4687″ w. x .0938″–.1875″ thick.

No. CYFM-20C-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999‡
561J	560	$3.75	$3.27	$2.60	$2.36	$1.75
621J	620	3.75	3.27	2.60	2.36	1.75
681J	680	3.75	3.27	2.60	2.36	1.75
751J	750	3.75	3.27	2.60	2.36	1.75
821J	820	3.75	3.27	2.60	2.36	1.75
911J	910	3.75	3.27	2.60	2.36	1.75
102J	1000	3.75	3.27	2.60	2.36	1.75
112J	1100	3.75	3.27	2.60	2.36	1.75
122J	1200	5.15	4.48	3.57	3.24	2.41
132J	1300	5.15	4.48	3.57	3.24	2.41
152J	1500	5.15	4.48	3.57	3.24	2.41
162J	1600	5.15	4.48	3.57	3.24	2.41
182J	1800	5.15	4.48	3.57	3.24	2.41
202J	2000	5.15	4.48	3.57	3.24	2.41
222J	2200	5.15	4.48	3.57	3.24	2.41
242J	2400	5.15	4.48	3.57	3.24	2.41
272J	2700	5.15	4.48	3.57	3.24	2.41
302J	3000	5.15	4.48	3.57	3.24	2.41
332J	3300	6.57	5.72	4.56	4.13	3.07
362J	3600	6.57	5.72	4.56	4.13	3.07
392J*	3900	6.57	5.72	4.56	4.13	3.07
432J*	4300	6.57	5.72	4.56	4.13	3.07
472J*	4700	6.57	5.72	4.56	4.13	3.07
512J*	5100	6.57	5.72	4.56	4.13	3.07

TYPE CYFM30

Size, Min.-Max.: .7032″–.8281″ lg. x .6719″–.8281″ w. x .0938″–.1875″ thick.

No. CYFM-30C-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999‡
362J	3600	$7.01	$6.10	$4.86	$4.41	$3.28
392J	3900	7.01	6.10	4.86	4.41	3.28
432J	4300	7.01	6.10	4.86	4.41	3.28
472J	4700	7.01	6.10	4.86	4.41	3.28
512J	5100	7.01	6.10	4.86	4.41	3.28
562J	5600	7.01	6.10	4.86	4.41	3.28
622J	6200	7.01	6.10	4.86	4.41	3.28
682J	6800	7.78	6.78	5.40	4.89	3.64
752J*	7500	7.78	6.78	5.40	4.89	3.64
822J*	8200	9.33	8.13	6.47	5.87	4.36
912J*	9100	9.33	8.13	6.47	5.87	4.36
103J*	10000	9.33	8.13	6.47	5.87	4.36

TYPE TY06 (CONTINUED)

Corn. No. CY06-	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999§
330J	33	$1.92	$1.67	$1.33	$1.21	$0.90
330K	33	1.58	1.38	1.10	.99	.74
360J	36	1.92	1.67	1.33	1.21	.90
360K	36	1.58	1.38	1.10	.99	.74
390J	39	1.92	1.67	1.33	1.21	.90
390K	39	1.58	1.38	1.10	.99	.74
430J	43	1.92	1.67	1.33	1.21	.90
430K	43	1.58	1.38	1.10	.99	.74
470J	47	1.92	1.67	1.33	1.21	.90
470K	47	1.58	1.38	1.10	.99	.74
510J	51	1.92	1.67	1.33	1.21	.90
510K	51	1.58	1.38	1.10	.99	.74
560J	56	1.92	1.67	1.33	1.21	.90
560K	56	1.58	1.38	1.10	.99	.74
620J	62	1.92	1.67	1.33	1.21	.90
620K	62	1.58	1.38	1.10	.99	.74
680J	68	1.92	1.67	1.33	1.21	.90
680K	68	1.58	1.38	1.10	.99	.74
750J	75	1.92	1.67	1.33	1.21	.90
750K	75	1.58	1.38	1.10	.99	.74
820J	82	1.92	1.67	1.33	1.21	.90
820K	82	1.58	1.38	1.10	.99	.74
910J	91	1.92	1.67	1.33	1.21	.90
910K	91	1.58	1.38	1.10	.99	.74
101J	100	1.92	1.67	1.33	1.21	.90
101K	100	1.58	1.38	1.10	.99	.74
111J	110	2.42	2.11	1.68	1.52	1.13
111K	110	1.71	1.49	1.18	1.07	.80
121J	120	2.42	2.11	1.68	1.52	1.13
121K	120	1.71	1.49	1.18	1.07	.80
131J	130	2.42	2.11	1.68	1.52	1.13
131K	130	1.71	1.49	1.18	1.07	.80
151J	150	2.42	2.11	1.68	1.52	1.13
151K	150	1.71	1.49	1.18	1.07	.80
161J	160	2.42	2.11	1.68	1.52	1.13
161K	160	1.71	1.49	1.18	1.07	.80
181J	180	2.42	2.11	1.68	1.52	1.13
181K	180	1.71	1.49	1.18	1.07	.80
201J	200	2.42	2.11	1.68	1.52	1.13
201K	200	1.71	1.49	1.18	1.07	.80
221J	220	2.42	2.11	1.68	1.52	1.13
221K	220	1.71	1.49	1.18	1.07	.80
241J	240	2.42	2.11	1.68	1.52	1.13
241K	240	1.71	1.49	1.18	1.07	.80
271J	270	2.42	2.11	1.68	1.52	1.13
271K	270	1.71	1.49	1.18	1.07	.80
301J	300	2.42	2.11	1.68	1.52	1.13
301K	300	1.71	1.49	1.18	1.07	.80
331J	330	2.42	2.11	1.68	1.52	1.13
331K	330	1.71	1.49	1.18	1.07	.80
361J	360	2.42	2.11	1.68	1.52	1.13
361K	360	1.71	1.49	1.18	1.07	.80
391J	390	2.42	2.11	1.68	1.52	1.13
391K	390	1.71	1.49	1.18	1.07	.80
431J	430	2.42	2.11	1.68	1.52	1.13
431K	430	1.71	1.49	1.18	1.07	.80
471J	470	2.42	2.11	1.68	1.52	1.13
471K	470	1.71	1.49	1.18	1.07	.80
511J	510	2.42	2.11	1.68	1.52	1.13
511K	510	1.71	1.49	1.18	1.07	.80
561J	560	2.42	2.11	1.68	1.52	1.13
561K	560	1.71	1.49	1.18	1.07	.80

TYPE TYO7

Use prefix TY07-C; .300″ lg. x .300″ w. x .115″ thick. Weight, 0.4–0.5 gram.

621J	620	$2.54	$2.21	$1.76	$1.60	$1.19
621K	620	1.71	1.49	1.18	1.07	.80
681J	680	2.54	2.21	1.76	1.60	1.19
681K	680	1.71	1.49	1.18	1.07	.80
751J	750	2.54	2.21	1.76	1.60	1.19
751K	750	1.71	1.49	1.18	1.07	.80
821J	820	2.54	2.21	1.76	1.60	1.19
821K	820	1.71	1.49	1.18	1.07	.80
911J	910	2.67	2.32	1.85	1.68	1.25
911K	910	1.71	1.49	1.18	1.07	.80
102J	1000	2.67	2.32	1.85	1.68	1.25
102K	1000	1.71	1.49	1.18	1.07	.80

TYPE TYO8

Use prefix TY08-; .500″ lg. x .300″ w. x .115″ thick. Weight, 0.7–0.8 gram.

112J	1100	$3.13	$2.73	$2.17	$1.97	$1.46
122J	1200	3.31	2.73	2.17	1.97	1.46
132J	1300	3.13	2.73	2.17	1.97	1.46
152J	1500	3.13	2.73	2.17	1.97	1.46
162J	1600	3.88	3.38	2.69	2.44	1.81
182J	1800	3.88	3.38	2.69	2.44	1.81
202J	2000	3.88	3.38	2.69	2.44	1.81
222J	2200	4.74	4.13	3.29	2.98	2.22
242J	2400	4.74	4.13	3.29	2.98	2.22

§1000–4999 prices on request.

ERIE MONOBLOC SUBMINIATURE CERAMIC CAPACITORS

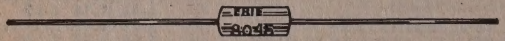
Erie's exclusive Monobloc Process® utilizes ceramic films prepared from proprietary formulations which are subsequently fired into one or more layers. This construction yields maximum capacitance-to-volume ratio, up to 380 mF/cu. in., consistent with excellent performance and dependability. Monobloc capacitor elements are produced in a wide range of capacitance values, characteristics, and sizes for Erie subminiature capacitors. Encapsulated to suit every application and are hermetically sealed, glass encased, precision molded, or Jet-Sealed with a hard bright polymeric coating.

GLASS-SEALED MONOBLOC CAPACITORS

8015

8005

8045



Small, rugged, reliable glass-sealed capacitors are hermetically sealed in glass providing maximum margin of safety whenever severe environmental conditions are anticipated. **Dielectric Strength:** 2.5 x WVDC. **Life Test:** 1000 hrs. at maximum operating temp. at 2 x WVDC. **Moisture Resistance:** MIL-STD-202, Method 106B, 20 days. **Tolerance:** Erie Numbers ending with suffix K, ±10%; M, ±20%. **Operating Temperature Range:** −55° C to +125° C, except Z5UO, +10° C to +85° C. **Sizes:** Style 8015, body length, .170″ x .065″ dia.; 8005, .260″ x .100″ dia.; 8045, .400″ x .155″ dia. Leads, min. length, 1.25″.

NPO HIGH STABILITY TYPES, 100 VOLTS, ±10%

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8015-000 COGO 100K	10	$1.24	$0.93	$0.78	$0.62	$0.47
8015-000 COGO 470K	47	1.24	.93	.78	.62	.47
8015-000 COGO 680K	68	1.24	.93	.78	.62	.47
8005-000 COGO 101K	100	1.04	.78	.65	.52	.39

STABLE TYPES, 100 VOLT, ±10% TOL.

8015-000 W5RO 151K	150	$1.40	$1.05	$0.88	$0.70	$0.53
8015-000 W5RO 102K	1000	1.40	1.05	.88	.70	.53
8015-000 W5RO 152K	1500	1.40	1.05	.88	.70	.53
8005-000 W5RO 102K	1000	1.08	.81	.68	.54	.41
8005-000 W5RO 472K	4700	1.08	.81	.68	.54	.41
8005-000 W5RO 103K	10000	1.80	1.35	1.13	.90	.68
8045-000 W5RO 473K	47000	3.32	2.49	2.08	1.66	1.25
8045-000 W5RO 104K	100000	7.08	5.31	4.43	3.54	2.66

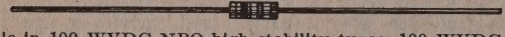
GENERAL PURPOSE TYPES, 50 VOLT, ±20% TOL.

8015-000 Z5UO 102M	1000	$1.32	$0.99	$0.83	$0.66	$0.50
8015-000 Z5UO 472M	4700	1.32	.99	.83	.66	.50
8015-000 Z5UO 682M	6800	1.32	.99	.83	.66	.50
8005-000 Z5UO 103M	10000	1.08	.81	.68	.54	.41
8005-000 Z5UO 223M	22000	1.08	.81	.68	.54	.41
8045-000 Z5UO 473M	47000	1.96	1.47	1.23	.98	.74
8045-000 Z5UO 104M	100000	1.96	1.47	1.23	.98	.74

TUBULAR TYPES MONOBLOC CAPACITORS

8013

8003



Available in 100 WVDC NPO high stability types, 100 WVDC stable types and 50 WVDC stable types. **Sizes:** Type 8013, .170″ body length, x .100″ dia.; Type 8003, .260″ body length, x .100″ dia. **Tolerance:** ±10%.

NPO HIGH STABILITY TYPES, 100 WVDC

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8003-000 COGO 100K	10	$1.24	$0.93	$0.78	$0.62	$0.47
8003-000 COGO 120K	12	1.24	.93	.78	.62	.47
8003-000 COGO 150K	15	1.24	.93	.78	.62	.47
8003-000 COGO 180K	18	1.24	.93	.78	.62	.47
8003-000 COGO 220K	22	1.24	.93	.78	.62	.47
8003-000 COGO 270K	27	1.24	.93	.78	.62	.47
8003-000 COGO 330K	33	1.24	.93	.78	.62	.47
8003-000 COGO 390K	39	1.24	.93	.78	.62	.47
8003-000 COGO 470K	47	1.24	.93	.78	.62	.47
8003-000 COGO 560K	56	1.24	.93	.78	.62	.47
8003-000 COGO 680K	62	1.24	.93	.78	.62	.47
8003-000 COGO 820K	82	1.24	.93	.78	.62	.47
8003-000 COGO 101K	100	1.24	.93	.78	.62	.47
8003-000 COGO 121K	120	1.24	.93	.78	.62	.47
8003-000 COGO 151K	150	1.24	.93	.78	.62	.47
8013-000 COGO 100K	10	1.32	.99	.83	.66	.50
8013-000 COGO 470K	47	1.16	.87	.73	.58	.44
8013-000 COGO 101K	100	1.32	.99	.83	.66	.50

STABLE TYPES, 100 WVDC

8003-000 W5RO 181K	180	$1.40	$1.05	$0.88	$0.70	$0.53
8003-000 W5RO 221K	220	1.40	1.05	.88	.70	.53
8003-000 W5RO 271K	270	1.40	1.05	.88	.70	.53
8003-000 W5RO 331K	330	1.40	1.05	.88	.70	.53
8003-000 W5RO 391K	390	1.40	1.05	.88	.70	.53
8003-000 W5RO 471K	470	1.40	1.05	.88	.70	.53
8003-000 W5RO 561K	560	1.40	1.05	.88	.70	.53
8003-000 W5RO 681K	680	1.40	1.05	.88	.70	.53
8003-000 W5RO 821K	820	1.40	1.05	.88	.70	.53
8003-000 W5RO 102K	1000	1.40	1.05	.88	.70	.53
8003-000 W5RO 122K	1200	1.40	1.05	.88	.70	.53
8003-000 W5RO 152K	1500	1.40	1.05	.88	.70	.53
8003-000 W5RO 182K	1800	1.40	1.05	.88	.70	.53
8003-000 W5RO 222K	2200	1.40	1.05	.88	.70	.53

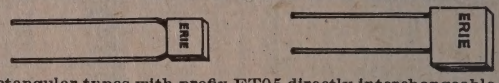
TUBULAR STABLE TYPES, 100 WVDC (CONT'D)

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8003-000 W5RO 272K	2700	$1.40	$1.05	$0.88	$0.70	$0.53
8003-000 W5RO 332K	3300	1.40	1.05	.88	.70	.53
8003-000 W5RO 392K	3900	1.40	1.05	.88	.70	.53
8003-000 W5RO 472K	4700	1.40	1.05	.88	.70	.53
8003-000 W5RO 562K	5600	1.40	1.05	.88	.70	.53
8003-000 W5RO 682K	6800	1.52	1.14	.95	.76	.57
8003-000 W5RO 822K	8200	1.64	1.23	1.03	.82	.62
8003-000 W5RO 103K	10000	1.80	1.35	1.13	.90	.68
8013-000 W5RO 471K	470	1.16	.87	.73	.58	.44
8013-000 W5RO 102K	1000	1.16	.87	.73	.58	.44
8013-000 W5RO 472K	4700	1.44	1.08	.90	.72	.54
8013-000 W5RO 103K	10000	1.32	.99	.83	.66	.50

STABLE TYPES, 50 WVDC

8003-000 W5RO 123K	12000	$1.52	$1.14	$0.95	$0.76	$0.57
8003-000 W5RO 153K	15000	1.64	1.23	1.03	.82	.62
8003-000 W5RO 183K	18000	1.80	1.35	1.13	.90	.68
8003-000 W5RO 223K	22000	2.08	1.56	1.30	1.04	.78
8003-000 W5RO 223M	22000	1.96	1.47	1.23	.98	.74

RECTANGULAR TYPES MONOBLOC CAPACITORS



Rectangular types with prefix ET05 directly interchangeable with the former 8123 or 8127 parts. Similarly, types with prefix ET06 are interchangeable with the former 8133 or 8137 parts. Meet applicable requirements of MIL-C-11015. Sizes, Type ET05, 200″ w. x .200″ h. Type ET06, .300″ w. x .300″ h. Both types are 100″ thick, have lead spacing .200″.

NPO HIGH STABILITY TYPES, 100 WVDC, ±10% TOL.

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
ET05-000 COGO 100K	10	$0.76	$0.57	$0.48	$0.38	$0.29
ET05-000 COGO 120K	12	.76	.57	.48	.38	.29
ET05-000 COGO 150K	15	.76	.57	.48	.38	.29
ET05-000 COGO 180K	18	.76	.57	.48	.38	.29
ET05-000 COGO 220K	22	.76	.57	.48	.38	.29
ET05-000 COGO 270K	27	.76	.57	.48	.38	.29
ET05-000 COGO 330K	33	1.28	.96	.80	.64	.48
ET05-000 COGO 390K	39	1.28	.96	.80	.64	.48
ET05-000 COGO 470K	47	1.28	.96	.80	.64	.48
ET05-000 COGO 560K	56	1.28	.96	.80	.64	.48
ET05-000 COGO 680K	68	1.28	.96	.80	.64	.48
ET05-000 COGO 820K	82	1.28	.96	.80	.64	.48
ET05-000 COGO 101K	100	1.28	.96	.80	.64	.48
ET05-000 COGO 121K	120	1.28	.96	.80	.64	.48
ET05-000 COGO 151K	150	1.28	.96	.80	.64	.48
ET05-000 COGO 181K	180	1.28	.96	.80	.64	.48
ET05-000 COGO 221K	220	1.28	.96	.80	.64	.48
ET06-000 COGO 271K	270	1.60	1.20	1.00	.80	.60
ET06-000 COGO 331K	330	1.60	1.20	1.00	.80	.60
ET06-000 COGO 391K	390	1.60	1.20	1.00	.80	.60
ET06-000 COGO 471K	470	1.60	1.20	1.00	.80	.60
ET06-000 COGO 561K	560	1.60	1.20	1.00	.80	.60
ET06-000 COGO 681K	680	1.60	1.20	1.00	.80	.60
ET06-000 COGO 821K	820	1.60	1.20	1.00	.80	.60
ET06-000 COGO 102K	1000	1.60	1.20	1.00	.80	.60

STABLE TYPES, 100 WVDC, ±10% TOL.

ET05-000 W5RO 331K	330	$0.76	$0.57	$0.48	$0.38	$0.29
ET05-000 W5RO 391K	390	.76	.57	.48	.38	.29
ET05-000 W5RO 471K	470	.76	.57	.48	.38	.29
ET05-000 W5RO 561K	560	.76	.57	.48	.38	.29
ET05-000 W5RO 681K	680	.76	.57	.48	.38	.29
ET05-000 W5RO 821K	820	.76	.57	.48	.38	.29
ET05-000 W5RO 102K	1000	.76	.57	.48	.38	.29
ET06-000 W5RO 122K	1200	.96	.72	.60	.48	.36
ET06-000 W5RO 152K	1500	.96	.72	.60	.48	.36
ET06-000 W5RO 182K	1800	.96	.72	.60	.48	.36
ET06-000 W5RO 222K	2200	.96	.72	.60	.48	.36
ET06-000 W5RO 272K	2700	.96	.72	.60	.48	.36
ET06-000 W5RO 332K	3300	.96	.72	.60	.48	.36
ET06-000 W5RO 392K	3900	.96	.72	.60	.48	.36
ET06-000 W5RO 472K	4700	.96	.72	.60	.48	.36
ET06-000 W5RO 562K	5600	1.04	.78	.65	.52	.39
ET06-000 W5RO 682K	6800	1.04	.78	.65	.52	.39
ET06-000 W5RO 822K	8200	1.04	.78	.65	.52	.39
ET06-000 W5RO 103K	10000	1.04	.78	.65	.52	.39
ET06-000 W5RO 123K	12000	1.24	.93	.78	.62	.47
ET06-000 W5RO 153K	15000	1.24	.93	.78	.62	.47
ET06-000 W5RO 183K	18000	1.24	.93	.78	.62	.47
ET06-000 W5RO 223K	22000	1.52	1.14	.95	.76	.57
ET06-000 W5RO 273K	27000	1.52	1.14	.95	.76	.57
ET06-000 W5RO 333K	33000	1.52	1.14	.95	.76	.57
ET06-000 W5RO 393K	39000	1.80	1.35	1.13	.90	.68
ET06-000 W5RO 473K	47000	1.88	1.41	1.18	.94	.71
ET06-000 W5RO 563K	56000	2.16	1.62	1.35	1.08	.81
ET06-000 W5RO 683K	68000	2.16	1.62	1.35	1.08	.81
ET06-000 W5RO 823K	82000	2.32	1.74	1.45	1.16	.87
ET06-000 W5RO 104K	100000	2.32	1.74	1.45	1.16	.87

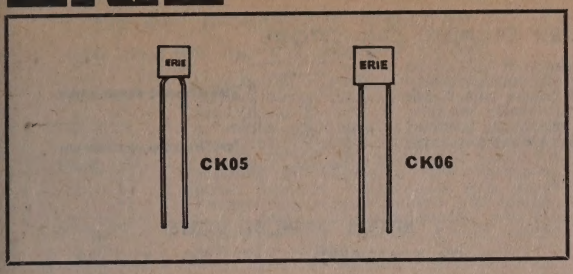
GENERAL PURPOSE TYPES, 50 WVDC, ±20% TOL.

ET06-000 Z5UO 154M	150000	$1.84	$1.38	$1.15	$0.92	$0.69
ET06-000 Z5UO 224M	220000	1.84	1.38	1.15	.92	.69
ET06-000 Z5UO 334M	330000	2.32	1.74	1.45	1.16	.87
ET06-000 Z5UO 474M	470000	2.92	2.19	1.83	1.46	1.10

GENERAL PURPOSE TYPES, 25 WVDC, ±20% TOL.

ET06-000 Z5UO 684M	680000	$4.32	$3.24	$2.70	$2.16	$1.62
ET06-000 Z5UO 105M	1000000	8.84	6.63	5.53	4.42	3.32

MILITARY GRADE MONOBLOC SUBMINIATURE CERAMIC CAPACITORS



Subminiature ceramic capacitors produced by Erie's exclusive Monobloc Process®. This unique process utilizes ceramic films prepared from proprietary formulations which are subsequently fired into solid structures of one or more layers. Maximum capacitance-to-volume ratio—up to 380 mF/cu. inch—is obtained consistent with fine performance and dependability. Monobloc capacitor elements are produced in a wide range of capacitance values, characteristics, and sizes for Erie subminiature capacitors. These capacitors are encapsulated to suit every application and are available in a choice of hermetically sealed, glass encased, precision molded, or Jet-Sealed models with a hard, bright polymeric coating. Sizes: Type CK05, .200″ w. x .200″ h.; Type CK06, .300″ w. x .300″ h. Both types are .100″ thick, with .200″ spacing between leads.

RECTANGULAR MONOBLOC PRECISION-MOLDED (MIL-C-11015) CAPACITORS

*CK05 TYPES—±10% TOL.

MIL Number*	Cap., pF	WV DC	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
CK05 BX 100K	10	200	$0.35	$0.29	$0.27	$0.24	$0.22
CK05 BX 120K	12	200	.35	.29	.27	.24	.22
CK05 BX 150K	15	200	.35	.29	.27	.24	.22
CK05 BX 180K	18	200	.35	.29	.27	.24	.22
CK05 BX 220K	22	200	.35	.29	.27	.24	.22
CK05 BX 270K	27	200	.35	.29	.27	.24	.22
CK05 BX 330K	33	200	.35	.29	.27	.24	.22
CK05 BX 390K	39	200	.35	.29	.27	.24	.22
CK05 BX 470K	47	200	.35	.29	.27	.24	.22
CK05 BX 560K	56	200	.35	.29	.27	.24	.22
CK05 BX 680K	68	200	.35	.29	.27	.24	.22
CK05 BX 820K	82	200	.35	.29	.27	.24	.22
CK05 BX 101K	100	200	.35	.29	.27	.24	.22
CK05 BX 121K	120	200	.35	.29	.27	.24	.22
CK05 BX 151K	150	200	.35	.29	.27	.24	.22
CK05 BX 181K	180	200	.35	.29	.27	.24	.22
CK05 BX 221K	220	200	.35	.29	.27	.24	.22
CK05 BX 271K	270	200	.35	.29	.27	.24	.22
CK05 BX 331K	330	200	.35	.29	.27	.24	.22
CK05 BX 391K	390	200	.35	.29	.27	.24	.22
CK05 BX 471K	470	200	.35	.29	.27	.24	.22
CK05 BX 561K	560	200	.35	.29	.27	.24	.22
CK05 BX 681K	680	200	.35	.29	.27	.24	.22
CK05 BX 821K	820	200	.35	.29	.27	.24	.22
CK05 BX 102K	1000	200	.35	.29	.27	.24	.22
CK05 BX 122K	1200	100	.70	.59	.46	.38	.35
CK05 BX 152K	1500	100	.70	.59	.46	.38	.35
CK05 BX 182K	1800	100	.70	.59	.46	.38	.35
CK05 BX 222K	2200	100	.77	.61	.49	.41	.37
CK05 BX 272K	2700	100	.77	.61	.49	.41	.37
CK05 BX 332K	3300	100	.77	.61	.49	.41	.37
CK05 BX 392K	3900	100	.77	.61	.49	.41	.37
CK05 BX 472K	4700	100	.77	.61	.49	.41	.37
CK05 BX 562K	5600	100	.77	.61	.49	.41	.37
CK05 BX 682K	6800	100	.87	.64	.56	.47	.44
CK05 BX 822K	8200	100	.87	.64	.56	.47	.44
CK05 BX 103K	10K	100	.87	.64	.56	.47	.44
CK05 BX 123K	12K	50	1.02	.78	.63	.54	.47
CK05 BX 153K	15K	50	1.02	.78	.63	.54	.47
CK05 BX 183K	18K	50	1.02	.78	.63	.54	.47
CK05 BX 223K	22K	50	1.05	.81	.65	.56	.51
CK05 BX 273K	27K	50	1.05	.81	.65	.56	.51
CK05 BX 333K	33K	50	1.40	1.12	.84	.728	.672
CK05 BX 393K	39K	50	1.40	1.12	.84	.728	.672
CK05 BX 473K	47K	50	1.40	1.12	.84	.728	.672
CK05 BX 563K	56K	50	1.83	1.46	1.10	.95	.88
CK05 BX 683K	68K	50	1.83	1.46	1.10	.95	.88
CK05 BX 823K	82K	50	2.13	1.70	1.28	1.11	1.02
CK05 BX 104K	100K	50	2.13	1.70	1.28	1.11	1.02

RECTANGULAR MONOBLOC PRECISION-MOLDED MIL-C-11015 CAPACITORS (CONT'D)

*CK06 TYPES—±10% TOL.

MIL Number*	Cap., pF	WV DC	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
CK06 BX 122K	1200	200	$0.56	$0.45	$0.35	$0.29	$0.27
CK06 BX 152K	1500	200	.56	.45	.35	.29	.27
CK06 BX 182K	1800	200	.56	.45	.35	.29	.27
CK06 BX 222K	2200	200	.56	.45	.35	.29	.27
CK06 BX 272K	2700	200	.56	.45	.35	.29	.27
CK06 BX 332K	3300	200	.56	.45	.35	.29	.27
CK06 BX 392K	3900	200	.56	.45	.35	.29	.27
CK06 BX 472K	4700	200	.56	.45	.35	.29	.27
CK06 BX 562K	5600	200	.63	.49	.38	.33	.29
CK06 BX 682K	6800	200	.63	.49	.38	.33	.29
CK06 BX 822K	8200	200	.63	.49	.38	.33	.29
CK06 BX 103K	10K	200	.63	.49	.38	.33	.29
CK06 BX 123K	12K	100	.77	.61	.50	.42	.37
CK06 BX 153K	15K	100	.77	.61	.50	.42	.37
CK06 BX 183K	18K	100	.77	.61	.50	.42	.37
CK06 BX 223K	22K	100	.96	.72	.56	.49	.44
CK06 BX 273K	27K	100	.96	.72	.56	.49	.44
CK06 BX 333K	33K	100	.96	.72	.56	.49	.44
CK06 BX 393K	39K	100	1.09	.87	.68	.59	.52
CK06 BX 473K	47K	100	1.16	.90	.70	.61	.55
CK06 BX 563K	56K	100	1.22	.93	.73	.64	.58
CK06 BX 683K	68K	100	1.22	.93	.73	.64	.58
CK06 BX 823K	82K	100	1.25	.97	.77	.68	.61
CK06 BX 104K	100K	100	1.25	.97	.77	.68	.61
CK06 BX 124K	120K	50	1.86	1.47	1.14	.97	.87
CK06 BX 154K	150K	50	1.89	1.51	1.18	1.01	.91
CK06 BX 184K	180K	50	2.56	2.05	1.56	1.36	1.20
CK06 BX 224K	220K	50	5.94	4.45	3.71	2.97	2.23
CK06 BX 274K	270K	50	7.99	5.99	4.99	3.99	3.00
CK06 BX 334K	330K	50	8.70	6.53	5.44	4.35	3.26
CK06 BX 394K	390K	50	9.27	6.95	5.80	4.63	3.48
CK06 BX 474K	470K	50	10.29	7.72	6.44	5.15	3.87
CK06 BX 564K	560K	50	11.32	8.49	7.08	5.66	4.25
CK06 BX 684K	680K	50	12.60	9.45	7.87	6.30	4.72
CK06 BX 824K	820K	50	14.13	10.60	8.83	7.07	5.30
CK06 BX 105K	1μF	50	16.13	12.10	10.09	8.06	6.05

*CK05 TYPES—±20% TOL.

MIL Number*	Cap., pF	WV DC	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
CK05 BX 100M	10	200	$0.33	$0.28	$0.26	$0.23	$0.20
CK05 BX 150M	15	200	.33	.28	.26	.23	.20
CK05 BX 220M	22	200	.33	.28	.26	.23	.20
CK05 BX 330M	33	200	.33	.28	.26	.23	.20
CK05 BX 470M	47	200	.33	.28	.26	.23	.20
CK05 BX 680M	68	200	.33	.28	.26	.23	.20
CK05 BX 101M	100	200	.33	.28	.26	.23	.20
CK05 BX 151M	150	200	.33	.28	.26	.23	.20
CK05 BX 221M	220	200	.33	.28	.26	.23	.20
CK05 BX 331M	330	200	.33	.28	.26	.23	.20
CK05 BX 471M	470	200	.33	.28	.26	.23	.20
CK05 BX 681M	680	200	.33	.28	.26	.23	.20
CK05 BX 102M	1000	200	.33	.28	.26	.23	.20
CK05 BX 152M	1500	100	.68	.54	.44	.36	.32
CK05 BX 222M	2200	100	.74	.60	.47	.41	.36
CK05 BX 332M	3300	100	.74	.60	.47	.41	.36
CK05 BX 472M	4700	100	.74	.60	.47	.41	.36
CK05 BX 682M	6800	100	.84	.63	.54	.45	.42
CK05 BX 103M	10K	100	.84	.63	.54	.45	.42
CK05 BX 153M	15K	50	.96	.74	.60	.51	.45
CK05 BX 223M	22K	50	1.04	.79	.64	.55	.50
CK05 BX 333M	33K	50	1.35	1.08	.81	.702	.648
CK05 BX 473M	47K	50	1.35	1.08	.81	.702	.648
CK05 BX 683M	68K	50	1.73	1.38	1.04	.90	.83
CK05 BX 104M	100K	50	2.03	1.62	1.22	1.05	.972

*CK06 TYPES—±20% TOL.

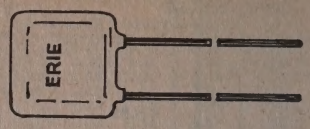
MIL Number*	Cap., pF	WV DC	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
CK06 BX 152M	1500	200	$0.54	$0.42	$0.32	$0.28	$0.26
CK06 BX 222M	2200	200	.54	.42	.32	.28	.26
CK06 BX 332M	3300	200	.54	.42	.32	.28	.26
CK06 BX 472M	4700	200	.54	.42	.32	.28	.26
CK06 BX 682M	6800	200	.56	.45	.35	.29	.27
CK06 BX 103M	10K	200	.56	.45	.35	.29	.27
CK06 BX 153M	15K	100	.74	.59	.47	.40	.35
CK06 BX 223M	22K	100	.93	.69	.54	.46	.41
CK06 BX 333M	33K	100	.93	.69	.54	.46	.41
CK06 BX 473M	47K	100	1.13	.88	.69	.60	.54
CK06 BX 683M	68K	100	1.19	.92	.72	.63	.56
CK06 BX 104M	100K	100	1.24	.96	.76	.67	.60
CK06 BX 154M	150K	50	1.86	1.47	1.14	.97	.87
CK06 BX 224M	220K	50	5.63	4.22	3.52	2.82	2.11
CK06 BX 334M	330K	50	7.83	5.88	4.90	3.92	2.94
CK06 BX 474M	470K	50	9.22	6.91	5.76	4.61	3.46
CK06 BX 684M	680K	50	11.37	8.53	7.10	5.68	4.26
CK06 BX 105M	1μF	50	14.54	10.91	9.09	7.27	5.45

***MIL CK12 BX TUBULAR MONOBLOC CERAMIC CAPACITORS, MIL CKR RECTANGULAR MOLDED CASE CAPACITORS AND MIL CKR TUBULAR GLASS-ENCASED CERAMIC CAPACITORS ALSO AVAILABLE. WRITE OR PHONE FOR COMPLETE INFORMATION AND PRICES.**

ERIE "RED CAP" CERAMIC CAPACITORS

RED CAP MONOBLOC PROCESS® CERAMIC CAPACITORS

Monobloc process construction. Meet or exceed all applicable requirements of MIL-C-20 and MIL-C-11015. Lower value capacitors incorporate electrically and mechanically rugged, single plates. Higher values are obtained by stacking parallel plates with noble metal electrodes and firing at very high temperatures to form an inherently reliable, fused monolithic "bloc". Encapsulated with Jet Seal, a hard, bright polymeric coating, to provide mechanical and electrical protection under the most severe environmental conditions.



RED CAP DIMENSIONS

Leads are 1.5" long minimum.

50 VOLT AND 100 VOLT		500 VOLT	
Erie Number	Size, Inches Square x Thick	Erie Number	Size, Inches Square x Thick
8101	.100 x .100	8121	.200 x .250
8111	.150 x .100	8131	.300 x .250
8121	.200 x .125	8141	.400 x .300
8131	.300 x .150	8151	.500 x .300
8141	.400 x .150	8161	.600 x .350
8151	.500 x .200		

ULTRA-STABLE TYPES, 100 VOLTS, ±10% TOLERANCE

Ultimate in capacitance stability and high Q over broad temperature and frequency range. 0±30 ppm/° C; −55° C to +150° C.

Erie Number	Cap.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8101-100 COKO 109B*	1.0	$0.90	$0.66	$0.54	$0.45	$0.39
8101-100 COKO 129B*	1.2	.96	.70	.58	.48	.42
8101-100 COKO 159B*	1.5	1.17	.86	.70	.59	.51
8101-100 COKO 189B*	1.8	1.26	.92	.76	.63	.55
8101-100 COGO 229C†	2.2	.363	.266	.218	.182	.157
8101-100 COGO 279C†	2.7	.363	.266	.218	.182	.157
8101-100 COGO 339C†	3.3	.363	.266	.218	.182	.157
8101-100 COGO 479D‡	4.7	.363	.266	.218	.182	.157
8101-100 COGO 569D‡	5.6	.363	.266	.218	.182	.157
8101-100 COGO 689D‡	6.8	.363	.266	.218	.182	.157
8101-100 COGO 829D‡	8.2	.363	.266	.218	.182	.157
8101-100 COGO 100K	10	.363	.266	.218	.182	.157
8111-100 COGO 150K	15	.363	.266	.218	.182	.157
8111-100 COGO 220K	22	.363	.266	.218	.182	.157
8121-100 COGO 330K	33	.33	.24	.20	.17	.14
8121-100 COGO 470K	47	1.16	.87	.73	.58	.44
8121-100 COGO 680K	68	1.16	.87	.73	.58	.44
8121-100 COGO 101K	100	1.20	.90	.75	.60	.45
8121-100 COGO 151K	150	1.28	.96	.80	.64	.48
8121-100 COGO 221K	220	1.32	.99	.83	.66	.50
8121-100 COGO 331K	330	1.40	1.05	.88	.70	.53
8121-100 COGO 471K	470	1.52	1.14	.95	.76	.57
8121-100 COGO 681K	680	1.56	1.17	.98	.78	.59
8121-100 COGO 102K	1000	1.76	1.32	1.10	.88	.66
8131-100 COGO 152K	1500	2.00	1.50	1.25	1.00	.75
8131-100 COGO 222K	2200	2.24	1.68	1.40	1.12	.84
8131-100 COGO 332K	3300	2.64	1.98	1.65	1.32	.99
8141-100 COGO 472K	4700	3.00	2.25	1.88	1.50	1.13
8141-100 COGO 682K	6800	3.76	2.82	2.35	1.88	1.41
8141-100 COGO 103K	10K	5.00	3.75	3.13	2.50	1.88

*Tol., ±.1 pF. †Tol., ±.25 pF. ‡Tol., ±.5 pF.

STABLE TYPES, 100 VOLTS, ±10% TOLERANCE

For applications in circuits requiring excellent volumetric efficiency with good stability. ±15% delta C, −55° C to +125° C.

Erie Number	Cap.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8101-100 W5RO 151K	150	$0.363	$0.266	$0.218	$0.182	$0.157
8101-100 W5RO 221K	220	.363	.266	.218	.182	.157
8101-100 W5RO 331K	330	.363	.266	.218	.182	.157
8111-100 W5RO 471K	470	.363	.266	.218	.182	.157
8111-100 W5RO 681K	680	.363	.266	.218	.182	.157
8121-100 W5RO 102K	1000	.363	.264	.22	.187	.154
8121-100 W5RO 152K	1500	.363	.264	.22	.187	.154
8121-100 W5RO 222K	2200	.92	.69	.58	.46	.35
8121-100 W5RO 332K	3300	.96	.72	.60	.48	.36
8121-100 W5RO 472K	4700	.96	.72	.60	.48	.36
8121-100 W5RO 682K	6800	1.04	.78	.65	.52	.39
8121-100 W5RO 103K	10K	1.08	.81	.68	.54	.41
8131-100 W5RO 153K	15K	1.32	.99	.83	.66	.50
8131-100 W5RO 223K	22K	1.44	1.08	.90	.72	.54
8131-100 W5RO 333K	33K	1.64	1.23	1.03	.82	.62
8131-100 W5RO 473K	47K	1.80	1.35	1.13	.90	.68
8131-100 W5RO 683K	68K	2.16	1.62	1.35	1.08	.81
8131-100 W5RO 104K	100K	2.52	1.89	1.58	1.26	.95
8151-100 W5RO 334K	330K	6.12	4.59	3.83	3.06	2.30
8151-100 W5RO 474K	470K	8.20	6.15	5.13	4.10	3.08
8151-100 W5RO 564K	560K	9.52	7.14	5.95	4.76	3.57

STABLE TYPES, 50 VOLTS, ±10% TOLERANCE, −55° C TO +125 C°

Erie Number	Cap.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8141-050 W5RO 334K	.33	$4.80	$3.60	$3.00	$2.40	$1.80
8141-050 W5RO 474K	.47	6.44	4.83	4.03	3.22	2.42
8151-050 W5RO 684K	.68	9.48	7.11	5.93	4.74	3.56
8151-050 W5RO 105K	1.0	13.24	9.93	8.28	6.62	4.97

GENERAL PURPOSE TYPES, ±20% TOLERANCE

For applications in circuits requiring the utmost in volumetric efficiency at temperatures between −55° C and +85° C. Not intended for resonant or frequency determining applications.

50 VOLTS

Erie Number	Cap.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8101-050-651-471M	470	$0.33	$0.24	$0.20	$0.17	$0.14
8101-050-651-681M	680	.33	.24	.20	.17	.14
8101-050-651-102M	1000	.33	.24	.20	.17	.14
8101-050-651-152M	1500	.33	.24	.20	.17	.14
8111-050-651-182M	1800	.33	.24	.20	.17	.14
8111-050-651-222M	2200	.33	.24	.20	.17	.14
8111-050-651-272M	2700	.33	.24	.20	.17	.14
8111-050-651-332M	3300	.33	.24	.20	.17	.14
8121-050-651-472M	4700	.297	.218	.178	.149	.129
8121-050-651-682M	6800	.297	.218	.178	.149	.129
8121-050-651-103M	.01	.72	.54	.45	.36	.27
8121-050-651-153M	.015	.80	.60	.50	.40	.30
8121-050-651-223M	.022	.84	.63	.53	.42	.32
8121-050-651-273M	.027	.84	.63	.53	.42	.32
8121-050-651-333M	.033	.92	.69	.58	.46	.35
8121-050-651-473M	.047	.96	.72	.60	.48	.36
8121-050-651-683M	.068	1.04	.78	.65	.52	.39
8121-050-651-104M	.1	1.20	.90	.75	.60	.45
8121-050-651-154M	.15	1.44	1.08	.90	.72	.54
8131-050-651-224M	.22	1.52	1.14	.95	.76	.57
8131-050-651-334M	.33	1.88	1.41	1.18	.94	.71
8131-050-651-474M	.47	2.28	1.71	1.43	1.14	.86
8131-050-651-684M	.68	3.08	2.31	1.93	1.54	1.16
8131-050-651-105M	1.0	3.52	2.64	2.20	1.76	1.32
8141-050-651-155M	1.5	4.80	3.60	3.00	2.40	1.80
8141-050-651-225M	2.2	7.24	5.43	4.53	3.62	2.72
8151-050-651-335M	3.3	10.52	7.89	6.58	5.26	3.95
8151-050-651-475M	4.7	15.32	11.49	9.58	7.66	5.75

100 VOLTS

Erie Number	Cap.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8101-100-651-471M	470	$0.33	$0.24	$0.20	$0.17	$0.14
8101-100-651-681M	680	.33	.24	.20	.17	.14
8101-100-651-102M	1000	.33	.24	.20	.17	.14
8101-100-651-152M	1500	.33	.24	.20	.17	.14
8111-100-651-182M	1800	.33	.24	.20	.17	.14
8111-100-651-222M	2200	.33	.24	.20	.17	.14
8111-100-651-272M	2700	.33	.24	.20	.17	.14
8111-100-651-332M	3300	.33	.24	.20	.17	.14
8121-100-651-472M	4700	.297	.218	.178	.149	.129
8121-100-651-682M	6800	.297	.218	.178	.149	.129
8121-100-651-103M	.01	.80	.60	.50	.40	.30
8121-100-651-153M	.015	.84	.63	.53	.42	.32
8121-100-651-223M	.022	.92	.69	.58	.46	.35
8121-100-651-273M	.027	.92	.69	.58	.46	.35
8121-100-651-333M	.033	.92	.69	.58	.46	.35
8121-100-651-473M	.047	1.08	.81	.68	.54	.41
8121-100-651-683M	.068	1.20	.90	.75	.60	.45
8131-100-651-104M	.1	1.20	.90	.75	.60	.45
8131-100-651-154M	.15	1.40	1.05	.88	.70	.53
8131-100-651-224M	.22	1.76	1.32	1.10	.88	.66
8131-100-651-274M	.27	2.00	1.50	1.25	1.00	.75
8131-100-651-334M	.33	2.24	1.68	1.40	1.12	.84
8131-100-651-474M	.47	2.88	2.16	1.80	1.44	1.08
8141-100-651-684M	.68	3.60	2.70	2.25	1.80	1.35
8141-100-651-105M	1.0	5.20	3.90	3.25	2.60	1.95
8151-100-651-155M	1.5	7.20	5.40	4.50	3.60	2.70
8151-100-651-225M	2.2	10.44	7.83	6.53	5.22	3.92

RED CAP CAPACITORS (CONT'D)

500 VOLT RED CAP CERAMIC CAPACITORS

High voltage capacitors designed for applications where compactness and light weight are critical. Range of temperature characteristics available adapts these capacitors from the ultra stable requirements of tuned circuits to the general purpose needs for coupling and bypassing, filter networks, power supplies, transmitters and more. Feature small size, reliability, high insulation resistance, shock resistance, and encapsulated with Jet Seal, a hard, bright polymeric coating.

500 VOLT RED CAP DIMENSIONS

Erie No.	Square	Thickness	Width Between Leads	Min. Lead Lgth.
8121	.200″	.250″	.100″	1.5″
8131	.300″	.250″	.200″	1.5″
8141	.400″	.300″	.200″	1.5″
8151	.500″	.300″	.400″	1.5″
8161	.500″	.350″	.400″	1.5″

ULTRA STABLE TYPES, 500 VOLTS
−55° C to +150° C, ±5% TOLERANCE

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8121-500 COGO 100D*	10	$1.80	$1.35	$1.13	$0.90	$0.68
8121-500 COGO 150J	15	1.80	1.35	1.13	.90	.68
8121-500 COGO 220J	22	1.80	1.35	1.13	.90	.68
8121-500 COGO 330J	33	1.88	1.41	1.18	.94	.71
8121-500 COGO 470J	47	1.92	1.44	1.20	.96	.72
8121-500 COGO 680J	68	2.04	1.53	1.28	1.02	.77
8121-500 COGO 101J	100	2.04	1.53	1.28	1.02	.77
8121-500 COGO 151J	150	2.40	1.80	1.50	1.20	.90
8131-500 COGO 221J	220	2.72	2.04	1.70	1.36	1.02
8131-500 COGO 331J	330	2.84	2.13	1.78	1.42	1.07
8131-500 COGO 471J	470	2.96	2.22	1.85	1.48	1.11
8131-500 COGO 681J	680	3.32	2.49	2.08	1.66	1.25
8131-500 COGO 102J	1000	3.12	2.34	1.95	1.56	1.17
8141-500 COGO 152J	1500	4.44	3.33	2.78	2.22	1.67
8141-500 COGO 222J	2200	5.24	3.93	3.28	2.62	1.97
8141-500 COGO 332J	3300	6.72	5.04	4.20	3.36	2.52
8151-500 COGO 472J	4700	8.72	6.54	5.45	4.36	3.27
8161-500 COGO 682J	6800	11.76	8.82	7.35	5.88	4.41
8161-500 COGO 103J	.01	15.84	11.88	9.90	7.92	5.94

*Tolerance, ±.5 pF.

STABLE TYPES, 500 VOLTS
−55° C to +125° C, ±10% TOLERANCE

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8121-500 W5RO 102K	1000	$1.28	$0.96	$0.80	$0.64	$0.48
8121-500 W5RO 152K	1500	1.28	.96	.80	.64	.48
8121-500 W5RO 222K	2200	1.32	.99	.83	.66	.50
8121-500 W5RO 332K	3300	1.40	1.05	.88	.70	.53
8121-500 W5RO 472K	4700	1.44	1.08	.90	.72	.54
8121-500 W5RO 682K	6800	1.56	1.17	.98	.78	.59
8131-500 W5RO 153K	.015	2.04	1.53	1.28	1.02	.77
8131-500 W5RO 223K	.022	2.28	1.71	1.43	1.14	.86
8131-500 W5RO 333K	.033	2.88	2.16	1.80	1.44	1.08
8141-500 W5RO 683K	.068	4.00	3.00	2.50	2.00	1.50

GENERAL PURPOSE TYPES, 500 VOLTS
−55° C to +85° C, ±20% TOLERANCE

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
8121-500 651 222M	2200	$1.04	$0.78	$0.65	$0.52	$0.39
8121-500 651 332M	3300	1.04	.78	.65	.52	.39
8121-500 651 472M	4700	1.04	.78	.65	.52	.39
8121-500 651 682M	6800	1.08	.81	.68	.54	.41
8121-500 651 103M	.01	1.08	.81	.68	.54	.41
8131-500 651 153M	.015	1.44	1.08	.90	.72	.54
8131-500 651 223M	.022	1.56	1.17	.98	.78	.59
8131-500 651 273M	.027	1.68	1.26	1.05	.84	.63
8131-500 651 333M	.033	1.76	1.32	1.10	.88	.66
8131-500 651 473M	.047	2.04	1.53	1.28	1.02	.77
8131-500 651 683M	.068	2.52	1.89	1.58	1.26	.95
8141-500 651 104M	.1	2.96	2.22	1.85	1.48	1.11
8141-500 651 154M	.15	3.84	2.88	2.40	1.92	1.44
8151-500 651 224M	.22	4.84	3.63	3.03	2.42	1.82
8151-500 651 334M	.33	6.60	4.95	4.13	3.30	2.48
8161-500 651 474M	.47	8.76	6.57	5.48	4.38	3.29

PRECISION GLASS AND QUARTZ TRIMMERS

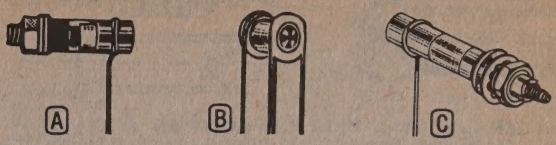


Fig. A types have 1.5″ lg. wire lead and #10-32 bushing with hex nut for panel mount. Fig. B types have four 1.0″ lg. wire leads requiring #64 .036″ dia. holes for printed circuit mount. **WVDC:** 1000. **Q:** 500 min. at 1 MHz. **Insulation Resistance:** 1000 megohms min. **Temperature Coefficient Tolerance, PPM/° C:** 0 ±50 unless otherwise noted.

HI-K GLASS DIELECTRIC TRIMMERS

Erie No. or MIL Designation	Fig.	Cap., pF	Net Each, Lots of 1-24	25-49	50-99	100-299	300-499	500-999
520-000	A	.8- 5.5	$3.80	$3.40	$3.05	$2.65	$2.40	$2.20
522-000	A	.8-11.0	4.20	3.80	3.40	3.00	2.70	2.40
524-000†	A	.8-16.0	4.80	4.30	3.85	3.35	3.05	2.70
526-000†	A	.8-23.0	5.40	4.85	4.35	3.80	3.45	3.00
528-000†	A	1.0-38.0	6.00	5.40	4.85	4.25	3.80	3.30

STANDARD GLASS DIELECTRIC TRIMMERS

560-013	A	.8- 4.5	$3.20	$2.95	$2.50	$2.10	$2.00	$1.70
562-013	A	.8- 8.5	3.40	3.05	2.70	2.25	2.15	1.80
564-013*	A	.7-12.0	3.75	3.40	2.95	2.45	2.35	2.00
566-013†	A	.8-18.0	4.35	3.95	3.40	2.85	2.70	2.35
568-013†	A	1.0-30.0	4.55	4.15	3.60	3.05	2.90	2.40
561-013	B	.8- 4.5	2.80	2.60	2.20	1.85	1.75	1.50
563-013	B	.8- 8.5	3.00	2.75	2.40	2.00	1.90	1.65
565-013*	B	.8-12.0	3.35	3.05	2.65	2.20	2.10	1.80
567-013†	B	.8-18.0	3.95	3.60	3.10	2.60	2.45	2.10
569-013†	B	1.0-30.0	4.15	3.80	3.30	2.80	2.65	2.25

MIL-C-14409B STANDARD GLASS DIELECTRIC TRIMMERS

PC40J4R5	A	.8- 4.5	$3.20	$2.95	$2.50	$2.10	$2.00	$1.70
PC40J8R5	A	.8- 8.5	3.40	3.05	2.70	2.25	2.15	1.80
PC40H120†	A	.8-12.0	3.75	3.40	2.95	2.45	2.35	2.00
PC40H180†	A	.8-18.0	4.35	3.95	3.40	2.85	2.70	2.35
PC40H300†	A	1.0-30.0	4.55	4.15	3.60	3.05	2.90	2.40
PC41J4R5	B	.8- 4.5	2.80	2.60	2.20	1.85	1.75	1.50
PC41J8R5	B	.8- 8.5	3.00	2.75	2.40	2.00	1.90	1.65
PC41H120†	B	.8-12.0	3.35	3.05	2.65	2.20	2.10	1.80
PC41H180†	B	.8-18.0	3.95	3.60	3.10	2.60	2.45	2.10
PC41H300†	B	1.0-30.0	4.15	3.80	3.30	2.80	2.65	2.25

HI-K GLASS DIELECTRIC TRIMMERS

521-000	B	.8- 5.5	$3.40	$3.05	$2.75	$2.40	$2.15	$2.00
523-000	B	.8-11.0	3.80	3.40	3.05	2.65	2.40	2.20
525-000	B	.8-16.0	3.80	3.40	3.05	2.65	2.40	2.20
527-000	B	.8-23.0	5.00	4.50	4.05	3.55	3.25	2.80

MIL-C-14409B HI-K GLASS DIELECTRIC TRIMMERS

PC51J5R5	....	.8- 5.5	$3.40	$3.05	$2.75	$2.40	$2.15	$2.00
PC51J110	....	.8-11	3.80	3.40	3.05	2.65	2.40	2.20

TC tolerance, PPM°/C: *0 ±75; †0 ±100.

QUARTZ DIELECTRIC TRIMMERS

Erie No. or MIL Designation	Fig.	Cap., pF	Net Each, Lots of 1-24	25-49	50-99	100-299	300-499	500-999
560-053	A	.6- 1.8	$5.00	$4.50	$4.05	$3.55	$3.25	$2.90
562-053	A	.6- 5.5	5.60	5.05	4.55	4.00	3.65	3.10
566-053	A	.6- 9.5	7.40	6.65	6.00	5.25	4.75	4.20
568-053	A	.8-16.0	9.20	8.30	7.45	6.55	5.85	5.30
561-053	B	.6- 1.8	4.60	4.15	3.75	3.30	2.95	2.45
563-053	B	.6- 5.5	5.20	4.70	4.20	3.70	3.35	3.05
567-053	B	.6- 9.5	7.00	6.30	5.65	4.95	4.45	4.00
569-053	B	.8-16.0	8.80	7.90	7.10	6.20	5.60	5.10

MIL-C-14409B QUARTZ DIELECTRIC TRIMMERS

Erie No. or MIL Designation	Fig.	Cap., pF	Net Each, Lots of 1-24	25-49	50-99	100-299	300-499	500-999
PC40Q1R8	....	.6- 1.8	$4.60	$4.15	$3.75	$3.30	$2.95	$2.45
PC40Q5R5	....	.6- 5.5	5.60	5.05	4.55	4.00	3.65	3.10
PC40Q9R5	....	.6- 9.5	7.40	6.65	6.00	5.25	4.75	4.20
PC40Q160	....	.8-16	9.20	8.30	7.45	6.55	5.85	5.30
PC41Q1R8	....	.6- 1.8	4.60	4.15	3.75	3.30	2.95	2.45
PC41Q5R5	....	.6- 6.5	5.20	4.70	4.20	3.70	3.35	3.05
PC41Q9R5	....	.6- 9.5	7.00	6.30	5.65	4.95	4.45	4.00
PC41Q160	....	.8-16	8.80	7.90	7.10	6.20	5.60	5.10

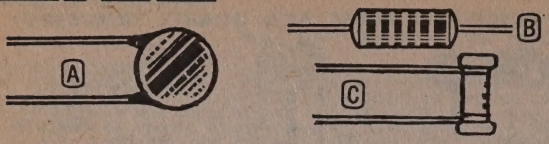
SPLIT-BUSHING GLASS TRIMMERS (FIG. C)

Designed for applications allowing extension of the adjustment screw, glass trimmer is ideally suited for high volume economic usage in electronic equipment. Internal torque mechanism maintains proper torque under varying conditions of vibration and shock. Operating temperature, −55° C to +125° C. Temperature coefficient, PPM/° C, 582-003, −75 ±75; balance, 0 ±100. ¼″-28 thread; 2″ lg. wire lead.

Erie Number	Range, pF	Net Each, Lots of 1-24	25-49	50-99	100-299	300-499	500-999
582-003*	.7- 9.0	$1.66	$1.50	$1.34	$1.12	$1.07	$0.95
586-003‡	.8-17.0	1.80	1.60	1.42	1.20	1.12	1.00
588-003‡	2.0-30.0	2.00	1.88	1.55	1.30	1.22	1.10

*WVDC, 1250. ‡WVDC, 750.

ERIE CERAMICON® CERAMIC DISC CAPACITORS



CERAMICON® DISC CAPACITORS (FIG. A)

Have flat ceramic dielectric with silver fired onto the dielectric. Lead wires soldered to silver electrodes. Case is phenolic, vacuum-wax impregnated. Very efficient at high frequencies. Reliable to 85° C. **Size, O.D.:** Style 831, .290″; 801, .360″; 851, .437″; 871, .490″; 811, .593″; 841, .675″. All are .156″ thick. All units rated at 500 WVDC; flash tested at 3 times rated voltage.

GENERAL PURPOSE HI-K® CERAMICONS

Popular for by-pass and non-critical coupling applications. **Tolerance:** ±10% except 10K–20K pF, ±20%.

Erie Number	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
831-000 X5FO 470K	47	$0.152	$0.114	$0.095	$0.068	$0.065
831-000 X5FO 560K	56	.152	.114	.095	.068	.065
831-000 X5FO 680K	68	.152	.114	.095	.068	.065
831-000 X5FO 101K	100	.152	.114	.095	.068	.065
831-000 X5FO 151K	150	.152	.114	.095	.068	.065
831-000 X5FO 201K	200	.152	.114	.095	.068	.065
831-000 X5FO 221K	220	.152	.114	.095	.068	.065
831-000 X5FO 271K	270	.152	.114	.095	.068	.065
831-000 X5FO 331K	330	.152	.114	.095	.068	.065
831-000 X5FO 391K	390	.152	.114	.095	.068	.065
831-000 X5FO 471K	470	.152	.114	.095	.068	.065
831-000 X5FO 501K	500	.152	.114	.095	.068	.065
801-000 X5FO 681K	680	.15	.113	.094	.068	.064
801-000 X5FO 102K	1000	.15	.113	.094	.068	.064
851-000 X5FO 152K	1500	.15	.113	.094	.068	.064
871-000 X5FO 202K	2000	.158	.119	.099	.071	.067
811-000 X5FO 222K	2200	.16	.12	.10	.072	.068
811-000 X5FO 332K	3300	.16	.12	.10	.072	.068
811-000 X5RO 472K	4700	.12	.09	.075	.054	.051
811-000 X5RO 502K	5000	.12	.09	.075	.054	.051
811-000 Z5UO 103M	10K	.128	.096	.08	.058	.054
841-000 Z5UO 153M	15K	.158	.119	.099	.071	.067
841-000 Z5UO 203M	20K	.158	.119	.099	.071	.067

NPO TEMPERATURE COMPENSATING TYPES

Widely used in tuning and resonant circuits. **Capacity Tolerance:** 5 pF, ±.25 pF; 8.2 and 10 pF, ±.5 pF; 12 pF and up, ±5%.

831-000 COGO 509C	5	$0.10	$0.075	$0.063	$0.045	$0.043
831-000 COGO 829D	8.2	.10	.075	.063	.045	.043
831-000 COGO 100D	10	.10	.075	.063	.045	.043
831-000 COGO 120J	12	.10	.075	.063	.045	.043
801-000 COGO 150J	15	.10	.075	.063	.045	.043
801-000 COGO 180J	18	.10	.075	.063	.045	.043
801-000 COGO 200J	20	.10	.075	.063	.045	.043
801-000 COGO 220J	22	.10	.075	.063	.045	.043
851-000 COGO 270J	27	.10	.075	.063	.045	.043
851-000 COGO 330J	33	.10	.075	.063	.045	.043
851-000 COGO 470J	47	.10	.075	.063	.045	.043
811-000 COGO 680J	68	.124	.093	.078	.056	.053
811-000 COGO 750J	75	.124	.093	.078	.056	.053
841-000 COGO 820J	82	.124	.093	.078	.056	.053
841-000 COGO 101J	100	.124	.093	.078	.056	.053

N750 TEMPERATURE COMPENSATING TYPES

Similar to NPO types except capacity tolerance, 10 pF, ±.5 pF; 12 pF and up, ±5%.

831-000 U2JO 100D	10	$0.10	$0.075	$0.063	$0.045	$0.043
831-000 U2JO 120J	12	.10	.075	.063	.045	.043
831-000 U2JO 150J	15	.10	.075	.063	.045	.043
831-000 U2JO 180J	18	.10	.075	.063	.045	.043
831-000 U2JO 200J	20	.10	.075	.063	.045	.043
831-000 U2JO 220J	22	.10	.075	.063	.045	.043
831-000 U2JO 270J	27	.10	.075	.063	.045	.043
831-000 U2JO 330J	33	.10	.075	.063	.045	.043
801-000 U2JO 390J	39	.10	.075	.063	.045	.043
801-000 U2JO 470J	47	.10	.075	.063	.045	.043
801-000 U2JO 500J	50	.10	.075	.063	.045	.043
801-000 U2JO 560J	56	.10	.075	.063	.045	.043
851-000 U2JO 680J	68	.10	.075	.063	.045	.043
851-000 U2JO 750J	75	.10	.075	.063	.045	.043
851-000 U2JO 820J	82	.10	.075	.063	.045	.043
851-000 U2JO 101J	100	.10	.075	.063	.045	.043

MIL-C-11015C HI-K CERAMICONS

WVDC: 500. **Tolerance:** Suffix **K** to MIL Designation No. indicates ±10%; **M**, ±20%.

MIL Designation	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
CK60 BX 2R2K	2.2	$0.234	$0.176	$0.146	$0.105	$0.099
CK60 BX 3R3K	3.3	.234	.176	.146	.105	.099
CK60 BX 4R7K	4.7	.234	.176	.146	.105	.099
CK60 BX 6R8K	6.8	.234	.176	.146	.105	.099
CK60 BX 100K	10	.234	.176	.146	.105	.099
CK60 BX 150K	15	.234	.176	.146	.105	.099
CK60 BX 220K	22	.234	.176	.146	.105	.099
CK60 BX 330K	33	.234	.176	.146	.105	.099
CK60 BX 330M	33	.226	.17	.141	.102	.096
CK60 BX 470K	47	.234	.176	.146	.105	.099
CK60 BX 470M	47	.226	.17	.141	.102	.096
CK60 BX 680K	68	.234	.176	.147	.105	.099
CK60 BX 680M	68	.226	.17	.141	.102	.096
CK60 BX 101K	100	.234	.176	.146	.105	.099
CK60 BX 101M	100	.226	.17	.141	.102	.096

MIL-C-11015C HI-K CERAMICONS (CONT'D)

MIL Designation	Cap., pF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
CK60 BX 151K	150	$0.234	$0.176	$0.146	$0.105	$0.099
CK60 BX 151M	150	.226	.17	.141	.102	.096
CK60 AX 221K	220	.194	.146	.121	.087	.082
CK61 BX 221K	220	.234	.176	.146	.105	.099
CK61 BX 221M	220	.226	.17	.141	.102	.096
CK60 AX 331K	330	.194	.146	.121	.087	.082
CK60 AX 331M	330	.186	.140	.116	.084	.079
CK61 BX 331K	330	.234	.176	.146	.105	.099
CK61 BX 331M	330	.226	.17	.141	.102	.096
CK60 AX 471K	470	.194	.146	.121	.087	.082
CK60 AX 471M	470	.186	.14	.116	.084	.079
CK60 AW 471M	470	.182	.137	.114	.082	.077
CK61 BX 471K	470	.234	.176	.146	.105	.099
CK61 BX 471M	470	.226	.17	.141	.102	.096
CK60 AW 681M	680	.182	.137	.114	.082	.077
CK61 BX 681K	680	.234	.176	.146	.105	.099
CK61 BX 681M	680	.226	.17	.141	.102	.096
CK60 AW 102M	1000	.182	.137	.114	.082	.077
CK62 BX 102K	1000	.238	.179	.149	.107	.101
CK62 BX 102M	1000	.23	.173	.144	.104	.098
CK60 AW 152M	1500	.182	.137	.114	.082	.077
CK62 BX 152K	1500	.238	.179	.149	.107	.101
CK62 BX 152M	1500	.23	.173	.144	.104	.098
CK61 AW 222M	2200	.182	.137	.114	.082	.077
CK62 AX 222K	2200	.198	.149	.124	.089	.084
CK62 AX 222M	2200	.19	.143	.119	.086	.081
CK63 BX 222K	2200	.256	.192	.16	.115	.109
CK63 BX 222M	2200	.248	.168	.155	.112	.105
CK62 AW 332M	3300	.208	.156	.13	.094	.088
CK63 BX 332K	3300	.256	.192	.16	.115	.109
CK63 BX 332M	3300	.248	.168	.155	.112	.105
CK62 AW 472M	4700	.208	.156	.13	.094	.088
CK63 AW 472M	4700	.238	.179	.149	.107	.101
CK62 AW 682M	6800	.208	.156	.13	.094	.088
CK63 AY 103M	10K	.238	.179	.149	.107	.101
CK63 AW 103M	10K	.238	.179	.149	.107	.101

HIGH-CAPACITANCE, LOW-VOLTAGE TRANSCAP® DISC CERAMICONS (FIG. A)

Low cost disc type transcaps for 12-, 18- and 25-V transistorized applications such as by-pass and filtering.

12-VOLT TRANSCAPS

Dissipation Factor: 7% max. **Life Test:** 1000 hrs. at 12 VDC and +85° C. **Tolerance:** ±20%. **Size, O.D.:** Style 5635, .275″; 5655, .420″; 5615, .550″; 5645, .660″; 5685, .800″. All are .156″ thick.

Erie Number	Cap., μF	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
5635-000 Y5FO 503M	.05	$0.216	$0.162	$0.135	$0.097	$0.092
5655-000 Y5FO 104M	.1	.224	.168	.14	.101	.095
5615-000 Y5FO 224M	.22	.336	.252	.21	.151	.143
5645-000 Y5FO 334M	.33	.44	.33	.275	.198	.187
5685-000 Y5FO 474M	.47	.552	.414	.345	.248	.235

18-VOLT TRANSCAPS

Dissipation Factor: 5% max. **Life Test:** 500 hrs. at 18 VDC and +85° C. **Tolerance:** ±20%. **Size, O.D.:** Style 5735, .290″; 5705, .360″; 5755, .437″; 5715, .550″; 5785, .800″. All are .156″ thick.

5735-000 X5FO 103M	.01	$0.224	$0.168	$0.14	$0.101	$0.095
5735-000 X5FO 203M	.02	.268	.201	.168	.121	.114
5705-000 X5FO 333M	.033	.296	.222	.185	.133	.126
5755-000 X5FO 473M	.047	.336	.252	.21	.151	.143
5755-000 X5FO 503M	.05	.336	.252	.21	.151	.143
5715-000 X5FO 104M	.1	.364	.273	.228	.164	.155
5785-000 X5FO 204M	.2	.548	.411	.343	.247	.233

25-VOLT TRANSCAPS

Dissipation Factor: 7% max. **IR-RC Product:** 5 megs μF min. **Life Test:** 1000 hrs. at 37.5 VDC and +85° C. **Tolerance:** +80% −20%. **Size, O.D.:** Style 5835, .290″; 5855, .437″; 5815, .593″; 5865, .895″. All are .156″ thick, except dual units, .200″ thick.

5835-000 Y5UO 103Z	.01	$0.216	$0.162	$0.135	$0.097	$0.092
5835-000 Y5UO 203Z	.02	.26	.195	.163	.117	.111
5855-000 Y5UO 503Z	.05	.324	.243	.203	.146	.138
5815-000 Y5UO 104Z	.1	.344	.258	.215	.155	.146
5815-000 Y5UO 204Z*	.2	.668	.501	.418	.301	.284
5865-000 Y5UO 224Z	.22	.516	.387	.323	.232	.219
5865-000 Y5UO 474Z*	.47	1.01	.759	.633	.455	.43

*Dual unit.

100-VOLT TRANSISTOR CAPACITORS (FIG. A)

Dissipation: 3% max. **Life Test:** 1000 hrs. at 200 VDC and +85° C. **Tolerance:** +80 −20%. **IR:** 10,000 megohms min. **Size, O.D.:** Style 835, .275″; 805, .344″; 875, .475″. All are .125″ thick.

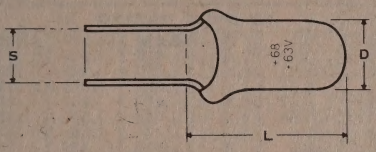
835-000 Z5VO 502Z	.005	$0.124	$0.093	$0.078	$0.056	$0.053
805-000 Z5VO 103Z	.01	.204	.153	.128	.092	.087
875-000 Z5VO 203Z	.02	.204	.153	.128	.092	.087

★LARGER QUANTITY PRICING AVAILABLE ON REQUEST

ITT Tantalum Capacitors

TYPES TAP AND TAG SOLID TANTALUM CAPACITORS

The extremely stable oxide layer of solid tantalum capacitors allows only a very small leakage current even after long storage. The solid electrolyte guarantees very stable electrical performance over wide temperature ranges and long time periods. ITT's TAP and TAG solid tantalum capacitors are finished in blue and red epoxy respectively and can be mounted in any position. Rugged construction allows installation in moderate environments experiencing moderate shock and vibration. Capacitance Tolerance: ±20% standard; ±10% also available. Temperature Range: −55° C to +85° C.



TYPE TAP

ITT No.	Cap., µF	Case Size†	Net Each, Lots of 1-99	100-199	1000-4999	5000-9900
4 WVDC RATING						
PA010A20	10	3	$0.488	$0.366	$0.244	$0.183
PA015A20	15	3	.488	.366	.244	.183
PA022A20	22	3	.488	.366	.244	.183
PA033A20	33	4	.568	.426	.32	.24
PA047A20	47	4	.568	.426	.32	.24
PB068A20	68	4	1.71	1.29	.97	.73
PB100A20	100	5	1.71	1.29	.97	.73
PB150A20	150	5	1.71	1.29	.97	.73
PB220A20	220	6	2.98	2.24	1.49	1.12
PB330A20	330	6	2.98	2.24	1.49	1.12
6–6.3 WVDC RATING						
PA3X3B20	3.3	1	$0.44	$0.33	$0.22	$0.165
PA4X7B20	4.7	2	.464	.348	.232	.174
PA6X8B20	6.8	2	.464	.348	.232	.174
PA010B20	10	3	.488	.379	.253	.19
PA015B20	15	3	.506	.391	.261	.196
PA022B20	22	3	.522	.391	.261	.196
PA033B20	33	4	.522	.447	.336	.252
PA047B20	47	4	.596	.478	.359	.269
PB068B20	68	4	1.80	1.35	1.01	.77
PB100B20	100	5	1.80	1.35	1.01	.77
PB150B20	150	5	1.80	1.35	1.01	.77
PB220B20	220	6	3.12	2.35	1.56	1.17
PB330B20	330	6	3.12	2.35	1.56	1.17
10 WVDC RATING						
PA2X2C20	2.2	1	$0.44	$0.33	$0.22	$0.165
PA3X3C20	3.3	2	4.64	.348	.232	.174
PA4X7C20	4.7	2	.476	.357	.238	.178
PA6X8C20	6.8	3	.506	.379	.253	.19
PA010C20	10	3	.522	.391	.261	.196
PA015C20	15	3	.548	.41	.274	.205
PA022C20	22	4	.568	.426	.32	.24
PA033C20	33	4	.636	.477	.358	.269
PB047C20	47	5	1.71	1.29	.97	.73
PB068C20	68	5	1.89	1.41	1.06	.808
PB100C20	100	5	1.89	1.41	1.06	.808
PB150C20	150	6	2.98	2.24	1.49	1.12
PB220C20	220	6	3.27	2.46	1.63	1.23
15–16 WVDC RATING						
PA1X5D20	1.5	1	$0.44	$0.33	$0.22	$0.165
PA2X2D20	2.2	2	.464	.348	.232	.174
PA3X3D20	3.3	2	.476	.357	.238	.178
PA4X7D20	4.7	3	.488	.366	.244	.183
PA6X8D20	6.8	3	.522	.391	.261	.196
PA010D20	10	3	.522	.391	.261	.196
PA015D20	15	4	.568	.426	.32	.24
PA022D20	22	4	.596	.447	.336	.252
PB033D20	33	5	1.71	1.29	.97	.73
PB047D20	47	5	1.71	1.29	.97	.73
PB068D20	68	5	1.98	1.48	1.11	.858
PB100D20	100	6	2.98	2.24	1.49	1.12
PB150D20	150	6	3.12	2.35	1.56	1.17
20 WVDC RATING						
PA3X3E20	3.3	3	$0.488	$0.366	$0.244	$0.183
PA4X7E20	4.7	3	.522	.391	.261	.196
PA6X8E20	6.8	3	.548	.41	.274	.201
PA010E20	10	4	.568	.426	.32	.24
PA015E20	15	4	.596	.447	.336	.252
PB022E20	22	5	1.71	1.29	.97	.73
PB033E20	33	5	1.89	1.41	1.06	.808
PB047E20	47	5	2.98	2.24	1.49	1.12
PB068E20	68	6	2.98	2.24	1.49	1.12
PB100E20	100	6	3.12	2.35	1.56	1.17
25 WVDC RATING						
PA1X0F20	1.0	1	$0.44	$0.33	$0.22	$0.165
PA1X5F20	1.5	2	.464	.348	.232	.174
PA2X2F20	2.2	2	.476	.357	.238	.178
PA3X3F20	3.3	3	.522	.391	.261	.196
PA4X7F20	4.7	3	.548	.41	.274	.201
PA6X8F20	6.8	3	.558	.41	.30	.22
PA010F20	10	4	.596	.497	.336	.252
PA015F20	15	4	.596	.497	.336	.252
PB022F20	22	5	1.89	1.41	1.06	.808
PB033F20	33	5	1.98	1.48	1.11	.848
PB047F20	47	6	3.12	2.35	1.56	1.17
PB068F20	68	6	3.12	2.35	1.56	1.17
35 WVDC RATING						
PAX10G20	0.1	1	$0.44	$0.33	$0.22	$0.165
PAX15G20	0.15	1	.44	.33	.22	.165
PAX22G20	0.22	1	.44	.33	.22	.165
PAX33G20	0.33	1	.44	.33	.22	.165
PAX47G20	0.47	1	.44	.33	.22	.165
PAX68G20	0.68	1	.44	.33	.22	.165
PA1X0G20	1.0	2	.464	.348	.232	.174
PA1X5G20	1.5	2	.476	.357	.238	.178
PA2X2G20	2.2	3	.488	.366	.244	.183
PA3X3G20	3.3	3	.548	.41	.274	.201
PA4X7G20	4.7	4	.568	.426	.32	.24
PA6X8G20	6.8	4	.568	.426	.32	.24
PA010G20	10	4	.625	.469	.352	.252
PB015G20	15	5	1.71	1.29	.97	.73
PB022G20	22	5	1.98	1.48	1.11	.848
PB033G20	33	6	2.98	2.24	1.49	1.12
PB047G20	47	6	3.27	2.46	1.63	1.23
50 WVDC RATING						
PAX10H20	0.1	1	$0.484	$0.363	$0.242	$0.181
PAX15H20	0.15	1	.484	.363	.242	.181
PAX22H20	0.22	1	.484	.363	.242	.181
PAX33H20	0.33	1	.484	.363	.242	.181
PAX47H20	0.47	2	.511	.383	.255	.191
PAX68H20	0.68	2	.511	.383	.255	.191
PA1X0H20	1.0	3	.537	.403	.269	.201
PA1X5H20	1.5	3	.537	.403	.269	.201
PA2X2H20	2.2	4	.625	.469	.352	.24
PA3X3H20	3.3	4	.625	.469	.352	.24
PB4X7H20	4.7	5	1.89	1.42	1.06	.83
PB6X8H20	6.8	5	1.89	1.42	1.06	.83
PB010H20	10	5	1.89	1.42	1.06	.83

†TAP CASE SIZES

Size Code	Size, Inches D.	L.	S.	Size Code	Size, Inches D.	L.	S.
1	.175	.35	.125	4	.25	.50	.125
2	.175	.35	.125	5	.35	.55	.250
3	.25	.49	.125	6	.40	.67	.250

TYPE TAG

ITT No.	Cap., µF	Case Size▲	Net Each, Lots of 1-99	100-199	1000-4999	5000-9900
3 WVDC RATING						
GA6X8A20	6.8	1	$0.396	$0.297	$0.198	$0.149
GA010A20	10	1	.396	.297	.198	.149
GA015A20	15	2	.416	.312	.208	.156
GA022A20	22	3	.428	.321	.214	.161
GA033A20	33	4	.436	.327	.218	.167
GA047A20	47	5	.48	.36	.24	.18
GA068A20	68	6	.52	.39	.26	.195
GA100A20	100	7	.60	.45	.30	.225
GB150A20	150	8	.83	.62	.41	.31
GB220A20	220	9	1.20	.90	.60	.45
GB330A20	330	11	1.60	1.20	.80	.60
GB470A20	470	13	2.60	1.95	1.30	.975
GB680A20	680	14	2.70	2.00	1.35	1.00
6.3 WVDC RATING						
GA4X7B20	4.7	1	$0.396	$0.297	$0.198	$0.149
GA6X8B20	6.8	2	.416	.312	.208	.156
GA010B20	10	3	.428	.321	.214	.161
GA015B20	15	4	.436	.327	.218	.167
GA022B20	22	5	.48	.36	.24	.18
GA033B20	33	6	.52	.39	.26	.195
GA047B20	47	7	.60	.45	.30	.225
GB068B20	68	8	.83	.62	.41	.31
GB100B20	100	9	1.20	.90	.60	.45
GB150B20	150	11	1.60	1.20	.80	.60
GB220B20	220	12	2.00	1.50	1.00	.75
GB330B20	330	14	2.70	2.00	1.35	1.00
10 WVDC RATING						
GA3X3C20	3.3	1	$0.396	$0.297	$0.198	$0.149
GA4X7C20	4.7	2	.416	.312	.208	.156
GA6X8C20	6.8	3	.428	.321	.214	.161
GA010C20	10	4	.436	.327	.218	.167
GA015C20	15	5	.48	.36	.24	.18
GA022C20	22	6	.52	.39	.26	.195
GA033C20	33	7	.60	.45	.30	.225
GB047C20	47	8	.83	.62	.41	.31
GB068C20	68	9	1.20	.90	.60	.45
GB100C20	100	11	1.60	1.20	.80	.60
GB150C20	150	13	2.60	1.95	1.30	.975
GB220C20	220	14	2.70	2.00	1.35	1.00
16 WVDC RATING						
GA2X2D20	2.2	1	$0.396	$0.297	$0.198	$0.149
GA3X3D20	3.3	2	.416	.312	.208	.156
GA4X7D20	4.7	3	.428	.321	.214	.161
GA6X8D20	6.8	4	.436	.327	.218	.167
GA010D20	10	5	.48	.36	.24	.18
GA015D20	15	6	.52	.39	.26	.195
GA022D20	22	7	.60	.45	.30	.225
GB033D20	33	9	1.20	.90	.60	.45
GB047D20	47	10	1.40	1.05	.70	.525
GB068D20	68	11	1.60	1.20	.80	.60
GB100D20	100	13	2.60	1.95	1.30	.975
GB150D20	150	15	2.80	2.10	1.40	1.05

▲For case sizes, see following page.

LISTING CONTINUED ON FOLLOWING PAGE.

TYPE TAG (CONT'D.)

ITT No.	Cap., µF	Case Size▲	Net Each, Lots of 1-99	100-199	1000-4999	5000-9900
20 WVDC RATING						
GA015E20	15	7	$0.60	$0.45	$0.30	$0.225
GB022E20	22	8	.83	.62	.41	.31
GB033E20	33	9	1.20	.90	.60	.45
GB047E20	47	11	1.60	1.20	.80	.60
GB068E20	68	12	2.00	1.50	1.00	.75
GB100E20	100	14	2.70	2.00	1.35	1.00
25 WVDC RATING						
GA1X5F20	1.5	1	$0.396	$0.297	$0.198	$0.149
GA2X2F20	2.2	2	.416	.312	.208	.156
GA3X3F20	3.3	3	.428	.321	.214	.161
GA4X7F20	4.7	4	.436	.327	.218	.167
GA6X8F20	6.8	5	.48	.36	.24	.18
GA010F20	10	6	.52	.39	.26	.195
GB015F20	15	8	.83	.62	.41	.31
GB022F20	22	9	1.20	.90	.60	.45
GB033F20	33	10	1.40	1.05	.70	.525
GB047F20	47	12	2.00	1.50	1.00	.75
GB068F20	68	13	2.60	1.95	1.30	.975
35 WVDC RATING						
GAX10G20	0.1	1	$0.396	$0.297	$0.198	$0.149
GAX15G20	0.15	1	.396	.297	.198	.149
GAX22G20	0.22	1	.396	.297	.198	.149
GAX33G20	0.33	1	.296	.297	.198	.149
GAX47G20	.047	1	.396	.297	.198	.149
GAX68G20	0.68	1	.396	.297	.198	.149
GA1X0G20	1.0	1	.396	.297	.198	.149
GA1X5G20	1.5	2	.416	.312	.208	.156
GA2X2G20	2.2	3	.428	.321	.214	.161
GA3X3G20	3.3	4	.436	.327	.218	.167
GA4X7G20	4.7	5	.48	.36	.24	.18
GA6X8G20	6.8	6	.52	.39	.26	.195
GA010G20	10	7	.60	.45	.30	.225

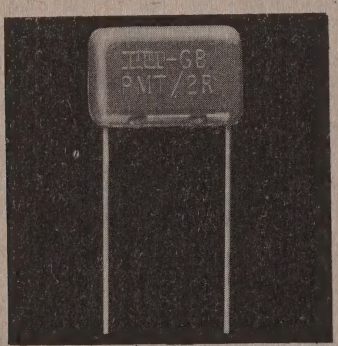
ITT No.	Cap., µF	Case Size▲	Net Each, Lots of 1-99	100-199	1000-4999	5000-9900
35 WVDC RATING (CONT'D)						
GB015G20	15	9	1.20	.90	.60	.45
GB022G20	22	11	1.60	1.20	.80	.60
GB033G20	33	12	2.00	1.50	1.00	.75
GB047G20	47	14	2.70	2.00	1.35	1.00
50 WVDC RATING						
GAX10H20	0.1	1	$0.436	$0.327	$0.218	$0.164
GAX15H20	0.15	1	.436	.327	.218	.164
GAX22H20	0.22	1	.436	.327	.218	.164
GAX33H20	0.33	2	.458	.343	.229	.172
GAX47H20	0.47	2	.458	.343	.229	.172
GAX68H20	0.68	3	.469	.353	.235	.177
GA1X0H20	1.0	4	.48	.36	.24	.18
GA1X5H20	1.5	5	.528	.396	.264	.198
GA2X2H20	2.2	6	.572	.43	.286	.215
GA3X3H20	3.3	7	.66	.495	.33	.248
GB4X7H20	4.7	8	.913	.682	.451	.341
GB6X8H20	6.8	9	1.32	.99	.66	.495
GB010H20	10	11	3.20	1.32	.88	.66

▲TAG CASE SIZES

Size Code	Size, Inches D.	L.	S.	Size Code	Size, Inches D.	L.	S.
1	.16	.28	.10	9	.35	.53	.20
2	.175	.28	.10	10	.35	.55	.20
3	.20	.32	.10	11	.35	.55	.20
4	.20	.33	.10	12	.40	.59	.20
5	.22	.35	.10	13	.40	.63	.20
6	.23	.37	.10	14	.40	.65	.20
7	.25	.39	.10	15	.40	.67	.20
8	.33	.45	.20				

TYPE PMT METALLIZED POLYESTER CAPACITORS

These capacitors provide the designer with a wide range of low cost, high performance metallized plastic film capacitors housed in rugged moldings. The encapsulation is stable, non-flammable, thermosetting resin. Capacitance Tolerance: ±20% standard; ±10% and ±5% also available. Temperature Range: −40° C to +100° C with no derating. Insulation Resistance: 10,000 ohms x microfarads or 25,000 megohms, whichever is greater. Surge Voltage: 1.5 times rated voltage (max. 1 min/hr). Capacitors rated at 630VDC are available on special order.



ITT No.	Cap., µF	Case Size■	Net Each, Lots of 1-99	100-499
100 WVDC RATING				
PMT2R0.068M100	0.068	1	$0.19	$0.13
PMT2R01M100	0.1	1	.18	.12
PMT2R0.15M100	0.15	2	.19	.13
PMT2R0.22M100	0.22	2	.21	.15
PMT2R0.33M100	0.33	3	.27	.19
PMT2R0.47M100	0.47	3	.35	.24
PMT2R0.68M100	0.68	4	.44	.30
PMT2R1.0M100	1.0	4	.56	.38
PMT2R1.5M100	1.5	5	.70	.48
PMT2R2.2M100	2.2	5	.93	.64
PMT2R3.3M100	3.3	6	1.43	.99
PMT2R4.7M100	4.7	6	1.74	1.20
250 WVDC RATING				
PMT2R0.033M250	0.033	1	$0.15	$0.10
PMT2R0.047M250	0.047	1	.16	.11
PMT2R0.068M250	0.068	2	.17	.12
PMT2R0.1M250	0.1	2	.18	.13
PMT2R0.15M250	0.15	3	.19	.14
PMT2R0.22M250	0.22	3	.21	.15
PMT2R0.33M250	0.33	4	.28	.19
PMT2R0.47M250	0.47	4	.35	.24
PMT2R0.68M250	0.68	5	.44	.30
PMT2R1.0M250	1.0	5	.56	.39
PMT2R1.5M250	1.5	6	.89	.61
PMT2R2.2M250	2.2	6	1.06	.74
400 WVDC RATING				
PMT2R0.01M400	0.01	1	$0.14	$0.10
PMT2R0.015M400	0.015	1	.15	.11
PMT2R0.022M400	0.022	1	.16	.12
PMT2R0.033M400	0.033	2	.17	.13
PMT2R0.047M400	0.047	2	.18	.14
PMT2R0.068M400	0.068	3	.19	.15
PMT2R0.1M400	0.1	3	.21	.16
PMT2R0.15M400	0.15	4	.27	.18
PMT2R0.22M400	0.22	5	.32	.22
PMT2R0.33M400	0.33	5	.40	.28
PMT2R0.47M400	0.47	5	.53	.36
PMT2R0.68M400	0.68	6	.76	.53
PMT2R1.0M400	1.0	6	.96	.66

■PMT CASE SIZES

Size Code	Size, Inches W.	H.	D.	S.
1	.532	.354	.197	.400
2	.532	.434	.236	.400
3	.749	.473	.276	.600
4	.749	.591	.354	.600
5	1.024	.788	.394	.902
6	1.260	.906	.512	1.10

OUR STOCKS ARE FULLY UP TO DATE WITH ALL THE LATEST PRODUCTS.

ASK ABOUT NEW OR UNLISTED ITEMS.

JFD PRECISION PISTON TRIMMER AND TUNING CAPACITORS

PC SERIES TO MIL-C-14409

Similar to commercial MC series, but meet QPL of MIL-C-14409. Body ¼" dia. except as noted. Panel mount types have 10-32 bushing, except as noted. Printed circuit types have 4-wire leads.

QUARTZ TRIMMERS, PANEL MOUNT

JFD No.	Cap. Range, pF	Net Each, Lots 1-24	25-49	50-99*
PC37Q4R5*†	0.7–4.5	$4.35	$3.91	$3.91
PC37Q060*†	0.6–6	5.25	4.72	4.72
PC37Q100*†	0.8–10	6.00	5.40	5.40
PC37Q210*†	9.0–21	7.95	7.15	7.15
PC38Q1R8§	0.6–1.8	7.00	6.30	5.65
PC38Q5R5§	0.6–5.5	7.60	6.80	6.10
PC38Q9R5§	0.6–9.5	9.40	8.45	7.65
PC38Q160§	0.8–16	11.20	10.10	9.10
PC40Q1R8	0.6–1.8	5.00	4.50	4.05
PC40Q5R5	0.6–5.5	5.60	5.05	4.55
PC40Q9R5	0.6–9.5	7.40	6.65	6.00
PC40Q160	0.8–16	9.20	8.30	7.45

QUARTZ TRIMMERS, PC MOUNT

PC41Q1R8	0.6–1.8	$4.60	$4.15	$3.75
PC41Q5R5	0.6–5.5	5.20	4.70	4.20
PC41Q9R5	0.6–9.5	7.00	6.30	5.65
PC41Q160	0.8–16	8.80	7.90	7.10
PC42Q1R8§	0.6–1.8	7.00	6.30	5.65
PC42Q5R5§	0.6–5.5	7.60	6.80	6.10
PC42Q9R5§	0.6–9.5	9.40	8.45	7.65
PC42Q160§	0.8–16	11.20	10.10	9.20

*¼"-28. †5/16" body dia. ‡¼"-32 bushing. §Sealcap construction. ***Larger Quantity Prices On Request.**

GLASS AND QUARTZ TRIMMERS

STANDARD GLASS, PANEL MOUNT

JFD No.	Cap. Range, pF	Net Each, Lots 1-24	25-49	50-99*
PC38J4R5§	0.8–4.5	$3.80	$3.40	$3.05
PC38J8R5§	0.8–8.5	4.00	3.60	3.25
PC38H120§	0.7–12	4.40	3.95	3.55
PC38H180§	0.8–18	5.00	4.50	4.05
PC38H300§	1.0–30	5.20	4.70	4.20
PC40J8R5	0.8–8.5	3.40	3.05	2.70
PC40J4R5	0.8–4.5	3.20	2.95	2.50
PC40H120	0.8–12	3.75	3.40	2.95
PC40H180	0.8–18	4.35	3.95	3.40
PC40H300	1.0–30	4.55	4.15	3.60

STANDARD GLASS, PC MOUNT

PC41J8R5	0.8–8.5	$3.00	$2.75	$2.40
PC41J4R5	0.8–4.5	2.80	2.60	2.20
PC41H120	0.8–12	3.35	3.05	2.65
PC41H180	0.8–18	3.95	3.60	3.10
PC41H300	1.0–30	4.15	3.80	3.30
PC42J4R5§	0.8–4.5	3.80	3.40	3.05
PC42J8R5§	0.8–8.5	4.00	3.60	3.25
PC42H120§	0.8–12	4.40	3.95	3.55
PC42H180§	0.8–18	5.00	4.50	4.05
PC42H300§	1.0–30	5.20	4.70	4.20

HI K GLASS, PANEL MOUNT

PC35H4R5‡	0.5–4.5	$2.50	$2.25	$2.00
PC35H130‡	0.8–13	2.60	2.35	2.10
PC35H240‡	1.0–24	3.00	2.70	2.40
PC35H400‡	1.0–40	3.40	3.05	2.75
PC39G121†§	1.0–120	12.60	11.35	10.20

HI K GLASS, PANEL MOUNT

JFD No.	Cap. Range, pF	Net Each, Lots 1-24	25-49	50-99*
PC39G160†§	1.0–16	$10.20	$9.20	$8.30
PC39G360†§	1.0–36	10.50	9.45	8.50
PC39G520†§	1.0–52	10.80	9.70	8.70
PC39G750†§	1.0–75	11.40	10.25	9.25
PC50J110	0.8–11	4.20	3.80	3.40
PC50J5R5	0.8–5.5	3.80	3.40	3.05
PC50H160	0.8–16	4.80	4.30	3.85
PC50H230	0.8–23	5.40	4.85	4.35
PC50H380	1.0–38	6.00	5.40	4.85

HI K GLASS, PC MOUNT

PC43G121†§	1.0–120	12.60	11.35	10.20
PC43G160†§	1.0–16	10.20	9.20	8.30
PC43G360†§	1.0–36	10.50	9.45	8.50
PC43G520†§	1.0–52	10.80	9.70	8.70
PC43G750†§	1.0–75	11.40	10.25	9.25
PC48J5R5§	0.8–5.5	4.60	4.15	3.75
PC48J110§	0.8–11	5.00	4.50	4.05
PC48H160§	0.7–16	5.60	5.05	4.55
PC48H230§	0.8–32	6.20	5.60	5.05
PC48H380§	1.0–38	6.80	6.10	5.50
PC51J110	0.8–11	3.80	3.40	3.05
PC51J5R5	0.8–5.5	3.40	3.05	2.75
PC51H160	0.8–16	4.40	3.95	3.55
PC51H230	0.8–23	5.00	4.50	4.05
PC51H380	0.8–38	5.60	5.05	4.55
PC52J5R5§	0.8–5.5	4.60	4.15	3.75
PC52J110§	0.8–11	5.00	4.50	4.05
PC52H160§	0.8–16	5.60	5.05	4.55
PC52H230§	0.8–23	6.20	5.60	5.05
PC52H380§	0.8–38	6.80	6.10	5.50

VC900 SERIES SUBMINIATURES

Extremely small piston trimmers offer a wide delta C, Hi-Life telescopic adjust mechanism, ultra linear tuning, low loss and low inductance for high frequency uses. WVDC, 500; dielectric strength, 1000 VDC; body dia., 17/64". **VC951 and VC961 use 0483 Green Glass dielectric for Q of 1000 at 20 MHz. VC950 and VC960 are standard glass equivalents with Q of 500 at 20 MHz. Panel mount types have #10-32 bushing; others are 4-wire PC types.**

JFD No.	Cap. Range pF	Body Lgth. in.	Type of Mtg.	Net Each, Lots of 1-24	25-49	50-99	100-299	300-499
VC950	1.0–10	17/64	Panel	$4.20	$3.80	$3.40	$3.00	$2.70
VC951	1.2–16	5/16	Panel	6.20	5.60	5.05	4.45	4.05
VC960	1.0–10	17/64	PC wire	3.80	3.40	3.05	2.65	2.40
VC961	1.2–16	5/16	PC wire	5.80	5.22	4.70	4.15	3.70

VC/NVC SERIES SUBMINIATURES

With standard panel mount adjustment mechanism and a high capacitance range in an intermediate body dia. 13/64". WVDC, 500; dielectric strength, 1000 VDC. **NVC74 and NVC75 0483 Green Glass dielectric for Q of 1000 at 20 MHz. Others standard glass with Q of 500. Panel mount types have #10-56 bushing; others 4-wire PC types.**

JFD No.	Cap. Range pF	Body Lgth. in.	Type of Mtg.	Net Each, Lots of 1-24	25-/49	50-99	100-199	200-299
VC74	0.5–7	19/64	Panel	$2.40	$2.16	$2.16	$2.00	$1.80
VC75	0.5–7	49/64	PC wire	2.40	2.16	2.16	2.00	1.80
NVC74	0.5–8.5	19/64	Panel	3.00	2.70	2.40	2.40	2.10
NVC75	0.5–8.5	49/64	PC wire	3.00	2.70	2.40	2.40	2.10

DV5 SERIES SUBMINIATURE VARIABLE CERAMIC DISC CAPACITORS

Only 5 mm in diameter, occupies less than .050 sq. in. of PC board space. Wide capacitance range and extremely low capacitance change with temperature. Capacitance is approximately linear for 180° rotation. Excellent stability due to unique rotor design, utilizing special proprietary ceramic materials in a monolithic structure. **Q:** 500 minimum, measured at 1 MHz and 25° C. **Insulation Resistance:** Not less than 10,000 megohms. **Dielectric Strength:** Twice rated working voltage for 1–5 seconds. **Capacitance Drift:** After temperature cycling, 0.75% or 0.5 pF, whichever is greater. **Turning Torque:** 0.5–3 oz.-in. **Temperature Coefficient:** NPO. **Working Voltage:** 100 WVDC from −55° C to +85° C; 50 WVDC up to +125° C. **Size:** .218" dia. x .145"; mounts in two .045" dia. holes, spaced .195". Weight, less than ¾ gram.

JFD No.	Cap. Range, pF*	Maximum Cap. Change, −55° to +125° C	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
DV509A	2.5–9	−4.5% to +3.4%	$4.95	$4.25	$3.75	$3.50	$2.60
DV510H	2–10	−1.5% to +1.5%	4.95	4.25	3.75	3.50	2.60
DV520A	3.5–20	−4.5% to +3.4%	4.95	4.25	3.75	3.50	2.60
DV525H	3.5–25	−1.5% to +1.5%	4.95	4.25	3.75	3.50	2.60
DV525A	5–25	−4.5% to +3.4%	4.95	4.25	3.75	3.50	2.60
DV530H	5–30	−1.5% to +1.5%	4.95	4.25	3.75	3.50	2.60

*Min.-Max.

DV11 SERIES STANDARD MINIATURE VARIABLE CERAMIC DISC CAPACITORS

DV11A

DV11P

DV11PS

DV11PR

Low-cost, miniature ceramic trimmer capacitors have piston-type tuning. Available in five temperature coefficients and four mounting types. **Type PS:** Short crimped PC leads. **Type A:** Axial leads. **Type P:** Standard PC leads. **Type PR:** Right-angle PC leads. All models are .375" dia. x .275" deep.

JFD No.	Cap. Range, pF*	Temp. Coeffi-cient	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
DV11PS8A	2–8	NPO	$2.05	$1.64	$1.36	$0.82	$0.68
DV11PS11B	2.5–11	N300	2.05	1.64	1.36	.82	.68
DV11PS10C	3–10	N500	2.05	1.64	1.36	.82	.68
DV11PS15D	3–15	N650	2.05	1.64	1.36	.82	.68
DV11PS18A	5.5–18	NPO	2.05	1.64	1.36	.82	.68
DV11PS25B	7–25	N300	2.05	1.64	1.36	.82	.68
DV11PS25C	8–25	N500	2.05	1.64	1.36	.82	.68
DV11PS35D	9–35	N650	2.05	1.64	1.36	.82	.68
DV11PS60Q	15–60	N1500	2.34	1.88	1.55	.93	.77
DV11A8A	2–8	NPO	1.69	1.35	1.12	.68	.57
DV11A11B	2.5–11	N300	1.69	1.35	1.12	.68	.57
DV11A10C	3–10	N500	1.69	1.35	1.12	.68	.57
DV11A15D	3–15	N650	1.69	1.35	1.12	.68	.57
DV11A18A	5.5–18	NPO	1.69	1.35	1.12	.68	.57
DV11A25B	7–25	N300	1.69	1.35	1.12	.68	.57
DV11A25C	8–25	N500	1.69	1.35	1.12	.68	.57
DV11A35D	9–35	N650	1.69	1.35	1.12	.68	.57
DV11A60Q	15–60	N1500	1.98	1.59	1.32	.79	.65
DV11P8A	2–8	NPO	1.69	1.35	1.12	.68	.57
DV11P11B	2.5–11	N300	1.69	1.35	1.12	.68	.57
DV11P10C	3–10	N500	1.69	1.35	1.12	.68	.57
DV11P15D	3–15	N650	1.69	1.35	1.12	.68	.57
DV11P18A	5.5–18	NPO	1.69	1.35	1.12	.68	.57
DV11P25B	7–25	N300	1.69	1.35	1.12	.68	.57
DV11P25C	8–25	N500	1.69	1.35	1.12	.68	.57
DV11P35D	9–35	N650	1.69	1.35	1.12	.68	.57
DV11P60Q	15–60	N1500	1.98	1.59	1.32	.79	.65
DV11PR8A	2–8	NPO	1.86	1.49	1.24	.75	.62
DV11PR11B	2.5–11	N300	1.86	1.49	1.24	.75	.62
DV11PR10C	3–10	N500	1.86	1.49	1.24	.75	.62
DV11PR15D	3–15	N650	1.86	1.49	1.24	.75	.62
DV11PR18A	5.5–18	NPO	1.86	1.49	1.24	.75	.62
DV11PR25B	7–25	N300	1.86	1.49	1.24	.75	.62
DV11PR25C	8–25	N500	1.86	1.49	1.24	.75	.62
DV11PR35D	9–35	N650	1.86	1.49	1.24	.75	.62
DV11PR60Q	15–60	N1500	1.98	1.59	1.32	.79	.65

*Min.-Max.

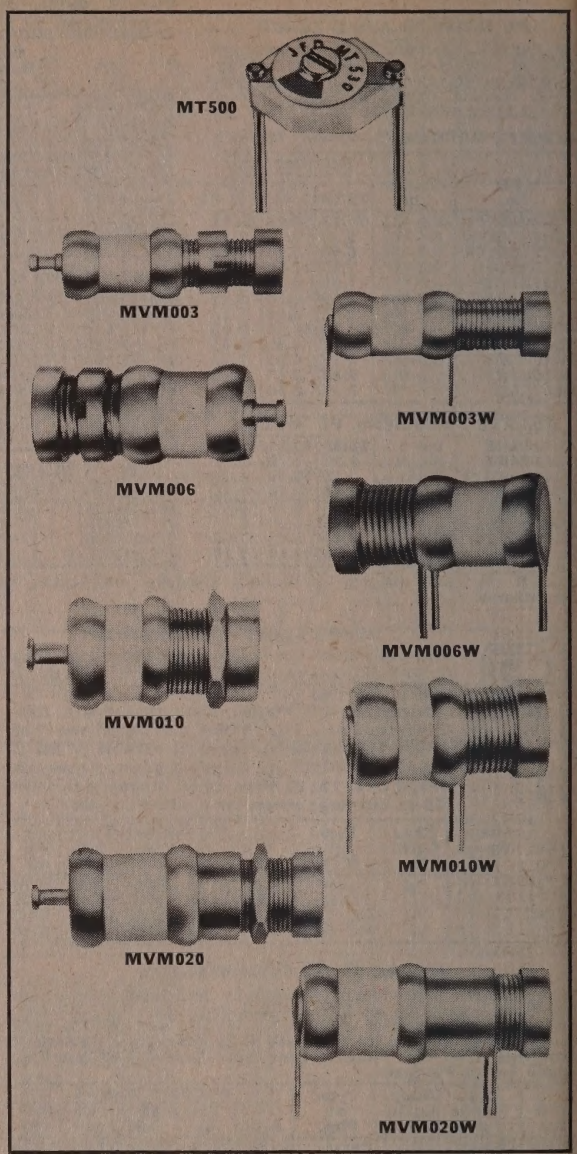
JFD MICROMINIATURE VARIABLE CAPACITORS

MT SERIES MODUTRIM MICROMINIATURE CERAMIC VARIABLE CAPACITORS

Extremely small, highly stable capacitors have a unique rotor design utilizing a special proprietary ceramic material in a monolithic structure. Capacitance is approximately linear for 180° rotation. Capacitance drift after temperature cycling, 0.75% or ±0.5 pF, whichever is greater. Dielectric strength, twice rated WVDC. Insulation resistance, not less than 10,000 megohms at rated voltage at 25° C. **MT100:** For channel-mount and cordwood applications, etc. Size, .34″ x .21″ x .125″ thick. **MT200:** Ideal for high component density problems and LC networks in TO-5 cans. Size, .28″ x .21″ x .125″ thick. **MT300:** 4-legged configuration with two dummy terminals for optimum mechanical support. Size, .25″ x .25″ x .125″ thick. **MT400:** For cordwood and module applications. Four feed-thru leads, including two dummy leads. Size, .25″ x .25″ x .125″ thick. **MT500:** Fits .100″ grid spaced PC boards. Size, .25″ x .25″ x 5/32″ thick, maximum.

JFD No.	Cap. Range pF	WV DC	Q	Nom. Temp. Coeff.*	Net Each, Lots of 1-24	25-99	100-199	200-299	300-499
MT100	4–15	500	500	N250	$6.00	$5.40	$5.00	$4.50	$4.00
MT106	1.1–5	50	500	NPO	6.00	5.40	5.00	4.50	4.00
MT109	1.6–9	50	500	NPO	6.00	5.40	5.00	4.50	4.00
MT112	3–12	50	500	N250	6.00	5.40	5.00	4.50	4.00
MT120	3.5–20	50	500	N250	6.00	5.40	5.00	4.50	4.00
MT130	5–30	50	500	N450	6.00	5.40	5.00	4.50	4.00
MT140	6.5–40	50	500	N550	6.00	5.40	5.00	4.50	4.00
MT150	8.5–50	50	300	N650	6.00	5.40	5.00	4.50	4.00
MT160	12–60	50	250	N650	6.00	5.40	5.00	4.50	4.00
MT200	4–15	500	500	N250	6.00	5.40	5.00	4.50	4.00
MT206	1.1–5	50	500	NPO	6.00	5.40	5.00	4.50	4.00
MT209	1.6–9	50	500	NPO	6.00	5.40	5.00	4.50	4.00
MT212	3–12	50	500	N250	6.00	5.40	5.00	4.50	4.00
MT220	3.5–20	50	500	N250	6.00	5.40	5.00	4.50	4.00
MT230	5–30	50	500	N450	6.00	5.40	5.00	4.50	4.00
MT240	6.5–40	50	500	N550	6.00	5.40	5.00	4.50	4.00
MT250	8.5–50	50	300	N650	6.00	5.40	5.00	4.50	4.00
MT260	12–60	50	250	N650	6.00	5.40	5.00	4.50	4.00
MT300	4–15	500	500	N250	5.40	4.85	4.42	3.92	3.52
MT306	1.1–5	50	500	NPO	5.40	4.85	4.42	3.92	3.52
MT309	1.6–9	50	500	NPO	5.40	4.85	4.42	3.92	3.52
MT312	3–12	50	500	N250	5.40	4.85	4.42	3.92	3.52
MT320	3.5–20	50	500	N250	5.40	4.85	4.42	3.92	3.52
MT330	5–30	50	500	N450	5.40	4.85	4.42	3.92	3.52
MT340	6.5–40	50	500	N550	5.40	4.85	4.42	3.92	3.52
MT350	8.5–50	50	300	N650	5.40	4.85	4.42	3.92	3.52
MT360	12–60	50	250	N650	5.40	4.85	4.42	3.92	3.52
MT400	4–15	500	500	N250	5.40	4.85	4.42	3.92	3.52
MT406	1.1–5	50	500	NPO	5.40	4.85	4.42	3.92	3.52
MT409	1.6–9	50	500	NPO	5.40	4.85	4.42	3.92	3.52
MT412	3–12	50	500	N250	5.40	4.85	4.42	3.92	3.52
MT420	3.5–20	50	500	N250	5.40	4.85	4.42	3.92	3.52
MT430	5–30	50	500	N450	5.40	4.85	4.42	3.92	3.52
MT440	6.5–40	50	500	N550	5.40	4.85	4.42	3.92	3.52
MT450	8.5–50	50	300	N650	5.40	4.85	4.42	3.92	3.52
MT460	12–60	50	250	N650	5.40	4.85	4.42	3.92	3.52
MT500	4–15	500	500	N250	4.80	4.30	3.85	3.35	3.05
MT506	1.1–5	50	500	NPO	4.80	4.30	3.85	3.35	3.05
MT509	1.6–9	50	500	NPO	4.80	4.30	3.85	3.35	3.05
MT512	3–12	50	500	N250	4.80	4.30	3.85	3.35	3.05
MT520	3.5–20	50	500	N250	4.80	4.30	3.85	3.35	3.05
MT530	5–30	50	500	N450	4.80	4.30	3.85	3.35	3.05
MT540	6.5–40	50	500	N550	4.80	4.30	3.85	3.35	3.05
MT550	8.5–50	50	300	N650	4.80	4.30	3.85	3.35	3.05
MT560	12–60	50	250	N650	4.80	4.30	3.85	3.35	3.05

*Temperature coefficient tolerance: N250, ±250 ppm/° C; NPO, ±150 ppm/° C; N450 and N550, ±300 ppm/° C; N650, ±350 ppm/° C.



MVM SERIES MICROMINIATURE AIR VARIABLE CAPACITORS

Specially designed for high frequency applications that demand extreme stability, small size and high Q. Metal housing elements provide a smoother, more constant torque during cycling and reliable electrical contact over a large area, assuring minimum noise levels. A positive stop beyond maximum rated capacitance prevents electrical shorting. Guiding element keeps rotor centered even under conditions of intense shock and vibration. All metal rotor with integral spring contact elements. Resists heat; won't come apart during soldering. Internal air meshing shells are silver plated for best surface conductivity and long life. High density ceramic insulator is used between stator and mounting bushing. Rubber-gasketed threaded end cap seals unit against humidity and contamination. Meets MIL-C-14409. Gold plated leads. Insulation resistance, 10^6 megohms at 500 VDC. **Working Voltage:** 250 WVDC. Test voltage, 500 VDC. **Operating Temperature:** −55° C to +125° C.

Type MVM003: Offers Q greater than 5000, measured at 3.5 pF and 100 MHz. Panel mounting with turret terminal. Size, 9/32″ dia. x 3/16″; mounts in .121″ dia. hole. **Type MVM003W:** Same as MVM003, but for PC mounting. Size, 3/4″ dia. x 31/64″ overall.

Type MVM006: For UHF to microwave frequencies. Q greater than 5000 measured at 6.0 pF, 100 MHz. Panel mount with turret terminal. Size, .200″ dia. x 3/16″; mounts in .191″ dia. hole. **Type MVM006W:** Same, for PC mounting. Size, .200″ dia. x 31/64″.

Type MVM010: Rugged construction with high Q (greater than 3000, measured at 20 pF and 100 MHz). Panel mount with turret terminal. Size, 9/32″ dia. x 37/64″; mounts in .236″ dia. hole. **Type MVM010H:** Panel mount with threaded terminal. Size, 9/32″ dia. x 21/32″. **Type MVM010M:** Panel mount with lug terminal; 9/32″ dia. x 15/32″. **Type MVM010W:** PC mounting. Size, 9/32″ dia. x 35/64″ max.

Type MVM020: High Q, greater than 1200 at 20 pF and 100 MHz; 3000 at 1.0 pF. Panel mount with turret terminal. Size, 9/32″ dia. x 55/64″; mounts in .236″ dia. hole. **Type MVM020H:** Panel mount with threaded terminal. Size, 9/32″ dia. x 15/16″; mounts in .236″ hole.

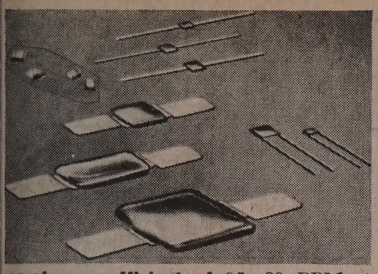
Type MVM020M: Panel mount with lug terminal; 9/32″ dia. x 3/4″; mounts in .236″ hole. **Type MVM020W:** PC mounting. Size, 9/32″ dia. x 3/4″ long maximum.

JFD Number	Cap. Range pF*	Temp. Coeff., ppm/°C	Net Each, Lots of 1-9	10-99	100-499	500-999	1000 Up
MVM003	0.35–3.5	50 ± 50	$6.03	$4.69	$4.12	$3.76	.....
MVM003W	0.35–3.5	50 ± 50	6.03	4.69	4.12	3.76	.....
MVM006	0.40–6.0	0 ± 50	6.75	5.25	4.65	4.25	.....
MVM006W	0.40–6.0	0 ± 50	6.75	5.25	4.65	4.25	.....
MVM010	0.8–10.0	0 ± 20	4.05	3.15	2.45	2.20	$1.95
MVM010H	0.8–10.0	0 ± 20	4.15	3.25	2.55	2.30	2.05
MVM010M	0.8–10.0	0 ± 20	4.05	3.15	2.45	2.20	1.95
MVM010W	0.8–10.0	0 ± 20	4.05	3.15	2.45	2.20	1.95
MVM014	1.0–14.0	0 ± 50	5.22†	4.54‡	3.88§	.....	.....
MVM016	1.0–16.0	0 ± 50	6.42†	5.23‡	4.47§	.....	.....
MVM020	1.0–20.0	0 ± 50	6.88	5.49	4.62	3.96	.....
MVM020H	1.0–20.0	0 ± 50	6.98	5.59	4.72	4.06	.....
MVM020M	1.0–20.0	0 ± 50	6.88	5.49	4.62	3.96	.....
MVM020W	1.0–20.0	0 ± 50	6.88	5.49	4.62	3.96	.....

*At 1 MHz. †Net Each, Lots of 1–24; ‡25–99; §100–299.

JFD UNICERAM—MICROMINIATURE HI-Q, HI-K AND RF POWER CERAMIC FIXED CAPACITORS

HIGH Q SERIES ENCAPSULATED UNICERAM® CAPACITORS



Meets or exceeds **MIL-C-11272B.** Microminiature multi-layer ceramic dielectric capacitors with up to 10 times greater capacitance to unit volume ratio than competitive units. Completely encapsulated in glass with bonded solid silver **ribbon leads** for low inductance. Also available in **radial ribbon leads.** Offers drift free low **temperature coefficient** of 95±20 PPM stability and reliability together with exceptionally high Q. Available in ±1% **(F)**, ±2% **(G)**, ±5% **(J)**, ±10% **(K) tolerances** as standard. Low **dissipation factor** of .0002. Max. **operating temperature range** without derating −55° to +125° C. 300 **WVDC** for units to 2000 pF and 200 **WVDC** for units from 2000 pF to 10,000 pF. **Insulation resistance** at 25° C, 10^6 megohms min. to 3000 pF; 5 x 10^5 megohms min. 3000–7000 pF, 10^5 megohms min. 7000–10,000 pF. **Life test** for 2000 hours at 125° C and 150% rated voltage. Ideal for today's weight and space saving needs in space age electronics equipment.

High Q Series Unencapsulated (WY) Capacitors: Unencapsulated chips with metalized edges. Parallel leads, capacitance values and outstanding electrical properties of standard encapsulated High Q series (UY). Q value greater than 5,000.

UY01 AND WY01 (CHIP) 300 WVDC

JFD Number	Cap., pF	Tolerance Available	JFD Number	Cap., pF	Tolerance Available
UY010R5	0.5	C, D	UY01110	11	J, K
UY011R0	1.0	C, D	UY01120	12	J, K
UY011R5	1.5	C, D	UY01130	13	G, J, K
UY012R2	2.2	C, D	UY01150	15	G, J, K
UY012R7	2.7	C, D	UY01160	16	G, J, K
UY013R0	3.0	C, D	UY01180	18	G, J, K
UY013R3	3.3	C, D	UY01200	20	G, J, K
UY013R6	3.6	C, D	UY01220	22	G, J, K
UY013R9	3.9	C, D	UY01240	24	G, J, K
UY014R3	4.3	C, D	UY01270	27	F, G, J, K
UY014R7	4.7	C, D	UY01300	30	F, G, J, K
UY015R1	5.1	J, K	UY01330	33	F, G, J, K
UY015R6	5.6	J, K	UY01360	36	F, G, J, K
UY016R2	6.2	J, K	UY01390	39	F, G, J, K
UY016R8	6.8	J, K	UY01430	43	F, G, J, K
UY017R5	7.5	J, K	UY01470	47	F, G, J, K
UY018R2	8.2	J, K	UY01510	51	F, G, J, K
UY019R1	9.1	J, K	UY01560	56	F, G, J, K
UY01100	10	J, K	UY01620	62	F, G, J, K

UY02 ONLY—300 WVDC

UY025R1	5.1	J, K	UY02120	12	J, K
UY025R6	5.6	J, K	UY02130	13	G, J, K
UY026R2	6.2	J, K	UY02150	15	G, J, K
UY026R8	6.8	J, K	UY02160	16	G, J, K
UY027R5	7.5	J, K	UY02180	18	G, J, K
UY028R2	8.2	J, K	UY02200	20	G, J, K
UY029R1	9.1	J, K	UY02220	22	G, J, K
UY02100	10	J, K	UY02240	24	G, J, K
UY02110	11	J, K			

UY02 AND WY02 (CHIP) 300 WVDC

UY02270	27	F, G, J, K	UY02620	62	F, G, J, K
UY02300	30	F, G, J, K	UY02680	68	F, G, J, K
UY02330	33	F, G, J, K	UY02750	75	F, G, J, K
UY02360	36	F, G, J, K	UY02820	82	F, G, J, K
UY02390	39	F, G, J, K	UY02910	91	F, G, J, K
UY02430	43	F, G, J, K	UY02101	100	F, G, J, K
UY02470	47	F, G, J, K	UY02111	110	F, G, J, K
UY02510	51	F, G, J, K	UY02121	120	F, G, J, K
UY02560	56	F, G, J, K	UY02131	130	F, G, J, K

UY03 AND WY03 (CHIP) 300 WVDC

UY03151	150	F, G, J, K	UY03301	300	F, G, J, K
UY03161	160	F, G, J, K	UY03331	330	F, G, J, K
UY03181	180	F, G, J, K	UY03361	360	F, G, J, K
UY03201	200	F, G, J, K	UY03391	390	F, G, J, K
UY03221	220	F, G, J, K	UY03431	430	F, G, J, K
UY03241	240	F, G, J, K	UY03471	470	F, G, J, K
UY03271	270	F, G, J, K			

UY04 AND WY04 (CHIP)

JFD No.	Cap., pF	WV DC	Tol. Available	JFD No.	Cap., pF	WV DC	Tol. Available
UY04511	510	300		UY04751	750	200	
UY04561	560	300	F, G,	UY04820	820	200	F, G,
UY04621	620	300	J or K	UY04911	910	200	J or K
UY04681	680	300		UY04102	1000	200	

UY05 AND WY05 (CHIP)

UY05112	1100	300		UY05202	2000	300	
UY05122	1200	300		UY05222	2200	200	
UY05132	1300	300	F, G,	UY05242	2400	200	F, G,
UY05152	1500	300	J or K	UY05272	2700	200	J or K
UY05162	1600	300		UY05302	3000	200	
UY05182	1800	300					

HIGH Q ORDERING INFORMATION

The complete JFD Number consists of six parts, as shown below. This numbering system should be used when ordering High Q encapsulated Uniceram capacitors (UY series) or High Q unencapsulated chip capacitors (WY series). To order WY series unencapsulated capacitors, substitute the letter **W** for the U in JFD number, in tables below. Complete pricing on request.

UY	0	2	13	1	J
(A)	(B)	(C)	(D)	(E)	(F)

(A) **Construction: UY**—Encapsulated fixed capacitor
WY—Unencapsulated chip capacitor

(B) **Leads: 0**—Axial ribbon leads
2—Axial wire leads (UY series only)
Available with radial ribbon leads on special order.

(C) **Case Size:**
1—UY01 (encapsulated) or WY01 (unencapsulated)
2—UY02 (encapsulated) or WY02 (unencapsulated)
3—UY03 (encapsulated) or WY03 (unencapsulated)
4—UY04 (encapsulated) or WY04 (unencapsulated)
5—UY05 (encapsulated) or WY05 (unencapsulated)

DIMENSIONS—INCHES

JFD Type	Body Length ±1/32	Body Width ±1/32	Body Thickness	Leads (Ribbon) Width x Thickness
UY01	7/64	7/64	1/16 ± 1/32	
UY02	9/64	9/64	1/16 ± 1/32	
UY03	3/16	3/16	1/16 ± 1/32	
UY04	1/4	1/4	5/64 ± 3/64	
UY05	13/32	13/32	1/16 ± 1/32	.050 ± .003
WY01	.110	.110	.070	x .008 ± .002
WY02	.150	.150	.070	
WY03	.190	.190	.070	
WY04	.270	.270	.100	
WY05	.410	.410	.100	

(D) **Capacitance Value:** First two numbers of capacitance in pF (R between first and second number equals a decimal point)

(E) **Capacitance Multiplier:** Number of zeros to follow first two numbers of capacitance

(F) **Capacitance Tolerance:**
C—±0.25 pF
D—±0.50 pF
F—±1%
G—±2%
J—±5%
K—±10%

HIGH K SERIES UNICERAM FIXED CAPACITORS

Axial ribbon leads. Meet or exceed MIL-C-11015C. Same exacting construction as the High Q series with higher capacitance-per-unit volume. Designed for reliable coupling and bypass applications in space-age electronics. **Voltage Rating:** 50 WVDC; test, 300% of rated. **Temperature Coefficient:** +5% to −15% from −30° C to +125° C. **Dissipation Factor:** 3% max. **Insulation Resistance:** 10^5 megohms or 100 ohm-farads, whichever is less. **Tolerance:** Choice of ±10% (K), ±20% (M) or GMV (Z).

JFD No.	Cap., μF*	Tolerance Available	JFD No.	Cap., μF*	Tolerance Available
UY12102	.001	K, M or Z	UY14503	.05	K, M or Z
UY12502	.005	K, M or Z	UY14104	.1	K, M or Z
UY12103	.01	K, M or Z			

*Also available in standard decade values between .001 to 1 μF not listed above.

DIMENSIONS—INCHES

JFD Type	Body Length ±1/32	Body Width ±1/32	Body Thickness	Leads (Ribbon) Width x Thickness
UY12102	9/64	9/64	3/64 ± 1/64	
UY12502	9/64	9/64	3/64 ± 1/64	.050 ± .003
UY12103	9/64	9/64	1/16 ± 1/32	x .008 ± .002
UY14503	1/4	1/4	1/16 ± 1/32	
UY14104	1/4	1/4	5/64 ± 1/32	

UFP SERIES HIGH RF POWER CAPACITORS

The industry's smallest high RF power capacitors. RF current, 8 amps rms at 25° C. **Complete information on request.**

JFD Series	Cap. Range, pF	WV DC	Test VDC	RF Volts kVAR rms at 25°C	RF Volts kVAR at 25°C	Limiting Impedance, Ohms Volt	Limiting Impedance, Ohms Cur.
UFP1	10–150	3600	7000	3000	12	750	187.5
UFP1	160–330	2500	4500	2000	12	333.3	187.5
UFP1	360–620	1200	2400	1000	6	166.7	93.75
UFP1	680–1300	600	1200	500	3	83.3	46.88
UFP1	1500–3000	300	600	250	1.5	41.67	23.44
UFP2	10–75	5400	10000	5000	18	1390	281
UFP3	82–150	5400	10000	5000	18	1390	281
UFP3	160–330	3600	7000	3000	18	500	281
UFP3	360–620	2500	4500	2000	12	333.3	187.5

COMPLETE PRICING INFORMATION ON REQUEST

JFD PRECISION PISTON TRIMMER AND TUNING CAPACITORS

Solid dielectric piston trimmers have patented adjust mechanisms, linear tuning, high shock and vibration resistance, low temperature coefficient, high Q and rugged construction. Available in choice of four dielectrics, five precision adjust mechanisms, standard to subminiature sizes and panel or printed circuit mountings. Dielectrics: Standard glass; 0483 Green Glass (increases capacitance 30% and Q factor 25% over standard glass); highly stable fused quartz and ceramic. Operating temperature range, −55° C to +125° C for standard glass and Green Glass types; −55° C to +150° C for quartz and ceramic types. Most types meet or exceed applicable performance and environmental requirements of MIL-C-14409B, Type PC.

VC/NVC MINIATURE GLASS SERIES

All units rated at 750 WVDC. Dielectric strength, 1500 VDC (measured for one minute at 50% relative humidity at maximum rated capacitance). Capacitance ranges measured at 1 MHz. Body dia. ¼″; 1 to 10 in.-oz. turning torque; 0.20″ screwdriver slot. **Choice of panel mounting type with #10-32 bushing or printed circuit mounting types: Suffix W, 4-wire PC mounting; other PC types have lug with 5/64″ dia. hole.**

VC STANDARD GLASS

Extremely popular series of trimmers employing standard glass dielectric and JFD's exclusive, space-saving miniature telescopic adjustment mechanism. Standard glass provides a 6.7 dielectric constant, low dissipation factor, excellent stability.

PANEL MOUNT TYPES (#10-32 BUSHING)

JFD No.	Cap. Range pF	Body Lgth. Inches	Q at 20 MHz	Net Each, Lots of 1-24	25-99	100-199	200-299
VC20G	0.8–8.5	35/64	500	$3.60	$3.24	$3.00	$2.70
VC21G	0.8–4.5	19/64	500	3.75	3.37	3.12	2.81
VC22G	0.8–12	3/4	500	4.35	3.91	3.62	3.26
VC23G	0.8–18	63/64	500	4.65	4.18	3.87	3.49
VC24G	1.0–30	1 19/32	350	5.25	4.72	4.37	3.94

PRINTED CIRCUIT BOARD TYPES

JFD No.	Cap. Range pF	Body Lgth. Inches	Q at 20 MHz	Net Each, Lots of 1-24	25-99	100-199	200-299
VC9G	0.8–8.5	9/16	500	$3.15	$2.83	$2.62	$2.36
VC9GW	0.8–8.5	9/16	500	3.15	2.83	2.62	2.36
VC10G	0.8–4.5	5/16	500	3.45	3.10	2.87	2.59
VC10GW	0.8–4.5	5/16	500	3.45	3.10	2.87	2.59
VC31G	0.8–12	49/64	500	4.05	3.64	3.37	3.04
VC31GW	0.8–12	49/64	500	4.05	3.64	3.37	3.04
VC32G	0.8–18	1	500	4.20	3.78	3.50	3.15
VC32GW	0.8–18	1	500	4.20	3.78	3.50	3.15
VC42G	1.0–21	1 5/32	350	4.35	3.91	3.62	3.26
VC42GW	1.0–21	1 5/32	350	4.35	3.91	3.62	3.26
VC43G	0.8–30	1 39/64	350	4.80	4.32	4.00	3.60
VC43GW	0.8–30	1 39/64	350	4.80	4.32	4.00	3.60

Y Series Miniature Glass Trimmers, reduced cost equivalents of VC Series, are also available. Write for prices.

Y Series Glass Sealcaps, reduced cost equivalents of MC Series Max-C Miniature Glass Sealcaps described at right, are also available. Write for prices.

VC PANEL MOUNT SPLIT STATOR TRIMMERS

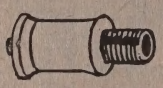
Similar to SP series miniatures but standard panel mount types with #¼-32 bushing, two 1″ long flat copper leads and ¼″ dia. body. **Types with suffix G, standard glass dielectric; plate-to-plate WVDC, 500; dielectric strength, 1000 VDC; Q of 700 at 1 MHz. Types with suffix A, quartz dielectric; plate-to-plate WVDC, 750; dielectric strength, 1500 VDC; and Q of 1000 at 1 MHz.**

JFD No.	Cap. Range, pF Plate to Bushing	Cap. Range, pF Plate to Plate	Body Lgth. In.	Net Each, Lots of 1-24	25-99	100-199	200-299
VC16G	0.5–5	0.8–2.5	11/16	$3.15	$2.83	$2.62	$2.36
VC17G	0.6–8.5	1.1–4.5	1 1/32	3.60	3.24	3.00	2.70
VC18G	0.7–14	1.8–7.5	1 19/32	4.05	3.64	3.37	3.04
VC80A	0.4–1.5	0.5–0.8	1/16	5.25	4.72	4.37	3.94
VC81A	0.55–2.8	0.75–1.3	5/8	6.00	5.40	5.00	4.50
VC82A	0.65–5	0.95–2.5	1	6.75	6.07	5.62	5.06
VC83A	5.3–10.5	3.5–5.5	1 19/32	8.85	7.96	7.37	6.64

ACCESSORIES FOR JFD PISTON TRIMMERS

JFD No.	Description	Net Each
5284	Adjustment tool for hex and screw	$ 0.85
7104-1	Trimmer tuning tool. Screw and ferrule	2.50
7104-2	Trimmer tuning tool. Screw and ferrule	2.50
7104-3	Trimmer tuning tool. Screw and ferrule	2.50
7104-4	Trimmer tuning tool. Male hex socket	2.50
7104-5	Trimmer tuning tool. Screwdriver blade	2.50
7104-6	Knurled demultiplication handle	.50
7104-7	Trimmer tuning tool. Screw and ferrule	2.50
7104-8	Trimmer tuning tool for MCD/NMCD series	2.50
TTK-63	Tuning kit with 9 tools, plastic storage case	18.00
UTF-63	Universal test fixture kit; 3 tools, handle	35.00

MC MAX-C® MINIATURE GLASS SEALCAPS



Combine sealed-interior Sealcap construction with space-saving, wide capacitance range Max-C design. Standard glass dielectric; WVDC, 1000; dielectric strength, 2000 VDC; and body dia., 5/16″. **Panel mount types have #10-32 bushing. Printed circuit board types have four mounting wires or lug with 5/64″ dia. hole and two wire leads.**

JFD No.	Cap. Range pF	Body Lgth. In.	Type of Mtg.	Net Each, Lots of 1-24	25-99	100-199	200-299
MC601*	1.0–14	15/32	Panel	$10.20	$ 9.18	$ 8.50	$7.65
MC603†	1.0–28	45/64	Panel	10.50	9.45	8.75	7.87
MC604	1.0–42	59/64	Panel	10.80	9.72	9.00	8.10
MC606	1.0–60	1 11/64	Panel	11.40	10.26	9.50	8.55
MC609	1.0–90	1 49/64	Panel	12.60	11.34	10.50	9.45
MC611*	1.0–14	.690	PC lug	10.20	9.18	8.50	7.65
MC613†	1.0–28	.930	PC lug	10.50	9.45	8.75	7.87
MC614	1.0–42	1.145	PC lug	10.80	9.72	9.00	8.10
MC616	1.0–60	1.390	PC lug	11.40	10.26	9.50	8.55
MC619	1.0–90	1.990	PC lug	12.60	11.34	10.50	9.45
MC621*	1.0–14	.700	PC wire	10.20	9.18	8.50	7.65
MC623†	1.0–28	.940	PC wire	10.50	9.45	8.75	7.87
MC624	1.0–42	1.155	PC wire	10.80	9.72	9.00	8.10
MC626	1.0–60	1.400	PC wire	11.40	10.26	9.50	8.55
MC629	1.0–90	2.000	PC wire	12.60	11.34	10.50	9.45

Q factor of 250 at 20 MHz except: *500; †350.

DS SERIES MINIATURE DIFFERENTIAL SEALCAP GLASS TRIMMERS

Sealed-interior Sealcap design locks out atmospheric effects. Low expansion invar allows wide operating temperature range, −55° C to +125° C. Standard glass dielectric; WVDC, 500; Q factor, 500 at 1 MHz; dielectric strength, 1000 VDC; body dia., ¼″. Meet or exceed applicable environmental and performance requirements of MIL-C-14409B. **Panel mount types have #10-32 bushing. Printed circuit types have either 5/64″ dia. lug and two leads or four wire leads.**

Cap. Range, pF Sec. 1	Cap. Range, pF Sec. 2	JFD No.	Body Lgth. In.	Type of Mounting	JFD No.	Body Lgth. In.	Type of Mounting	JFD No.	Body Lgth. In.	Type of Mounting	Net Each, Lots of 1-24	25-99	100-199	200-299
0.7–3	2.0–3	DS441	13/32	Panel	DS451	31/32	PC lug	DS461	21/32	PC 4-wire	$5.55	$4.99	$4.62	$4.16
0.8–8	2.5–8	DS443	41/64	Panel	DS453	39/32	PC lug	DS463	29/32	PC 4-wire	5.40	4.86	4.50	4.05
0.8–12	3.0–12	DS444	27/32	Panel	DS454	1 7/64	PC lug	DS464	1 7/64	PC 4-wire	6.00	5.40	5.00	4.50
0.9–16	3.5–16	DS446	1 1/32	Panel	DS456	1 19/64	PC lug	DS466	1 19/64	PC 4-wire	6.45	5.80	5.37	4.84
1.5–26	5.0–26	DS449	1 17/32	Panel	DS459	1 51/64	PC lug	DS469	1 51/64	PC 4-wire	7.20	6.48	6.00	5.40

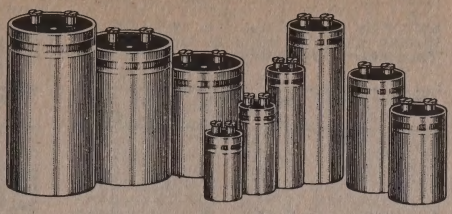
DC SERIES STANDARD DIFFERENTIAL GLASS TRIMMERS

Same as DS series above, but without Sealcap construction. **DC401 Series:** Standard panel mount types with ¼-28 bushing. **DC411 Series:** Miniature panel mount types with #10-32 bushing. **DC421 Series:** Printed circuit board types with 5/64″ dia. lug and two wire leads. **DC431 Series:** Printed circuit board mounting types with four wire leads.

Cap. Range, pF Sec. 1	Cap. Range, pF Sec. 2	Body Lgth. In.	JFD No.	Type of Mounting	Net Each, Lots of 1-24	25-99	100-199	200-299	JFD No.	Type of Mounting	Net Each, Lots of 1-24	25-99	100-199	200-299
0.7–3	2.0–3	5/16	DC401	Std. panel	$3.45	$3.10	$2.87	$2.59	DC411	Min. panel	$4.35	$3.91	$3.62	$3.26
0.8–8	2.5–8	35/64	DC403	Std. panel	3.45	3.10	2.87	2.59	DC413	Min. panel	4.20	3.78	3.50	3.15
0.8–12	3.0–12	3/4	DC404	Std. panel	3.60	3.24	3.00	2.70	DC414	Min. panel	4.95	4.45	4.12	3.71
0.9–16	3.5–16	15/16	DC406	Std. panel	3.75	3.37	3.12	2.81	DC416	Min. panel	5.25	4.72	4.37	3.94
1.5–26	5.0–26	1 1/16	DC409	Std. panel	4.05	3.64	3.37	3.04	DC419	Min. panel	5.85	5.26	4.87	4.39
0.7–3	2.0–3	5/16	DC421	PC lug	4.05	3.64	3.37	3.04	DC431	PC 4-wire	4.05	3.64	3.37	3.04
0.8–8	2.5–8	35/64	DC423	PC lug	3.75	3.37	3.12	2.87	DC433	PC 4-wire	3.75	3.37	3.12	2.81
0.8–12	3.0–12	3/4	DC424	PC lug	4.65	4.18	3.87	3.49	DC434	PC 4-wire	4.65	4.18	3.87	3.49
0.9–16	3.5–16	15/16	DC426	PC lug	4.80	4.32	4.00	3.60	DC436	PC 4-wire	4.80	4.32	4.00	3.60
1.5–26	5.0–26	1 1/16	DC429	PC lug	5.40	4.86	4.50	4.05	DC439	PC 4-wire	5.40	4.86	4.50	4.05

Y Series SP/SPS Split Stator and DS/DC Differential Trimmers, reduced cost equivalents, also available. Write for prices.

MALLORY Computer Grade Capacitors



Two classes of Computer Grade Capacitors are available: CGS for +65° C operation and CG for +85° C operation. Operating life of both types should exceed 10 years when used within stated parameters. Derating voltage and/or lowering operating temperature will extend life by a large factor. **Temp. Range:** −20° C to +65° (CGS), +85° (CG). **Tolerance:** 0–150 WVDC, −10 +75% (U); 151 WVDC up, −10 +50% (T). For complete specifications, ask for Form 4-64 (CG), 4-80 (CGS). Both classes are supplied with polyester film insulating sleeves and have "High-post" terminals with #10-32 screws. Physical mounting of these capacitors is usually done with Mallory VR clamps. The clamps, however, are not included with the capacitors. Order separately.

85° C COMPUTER GRADE

Mallory No. CG-	Cap., μF	WV DC	Size *	Net Each
1052U3B1	10,500	3	B	$ 2.87
263U003R3C•	26,000	3	R3C	2.84
753U3F1	75,000	3	F	8.61
453U5E1	45,000	5	E	7.39
15U5G1	100,000	5	G	11.46
322U10A1	3,200	10	A	2.15
63U10B1	6,000	10	B	2.91
752U010R2C•	7,500	10	R2C	2.32
822U10C1	8,200	10	C	3.46
14U10H1	10,000	10	H	3.86
1352U10K1	13,500	10	K	4.54
143U010R3C•	14,000	10	R3C	2.84
183U10D1	18,000	10	D	5.63
213U010R4C•	21,000	10	R4C	3.33
34U10E1	30,000	10	E	8.08
313U010V3C•	31,000	10	V3C	4.18
4352U10F1	43,500	10	F	10.09
463U010V4C•	46,000	10	V4C	5.20
683U10G1	68,000	10	G	11.80
114U010X4C•	110,000	10	X4C	8.59
164U010X5L•	160,000	10	X5L	11.45
252U15A1	2,500	15	A	2.41
452U15B1	4,500	15	B	3.17
642U15C1	6,400	15	C	3.29
652U015R2C•	6,500	15	R2C	2.32
83U15H1	8,000	15	H	3.74
1052U15K1	10,500	15	K	4.09
113U15J1	11,000	15	J	4.28
123U015R3C•	12,000	15	R3C	2.84
143U15D1	14,000	15	D	5.47
183U015R4C	18,000	15	R4C	3.33
213U015U3C•	21,000	15	U3C	3.31
273U015V3C•	27,000	15	V3C	4.18
343U15F1	34,000	15	F	8.68
403U015V4C•	40,000	15	V4C	5.20
533U15G1	53,000	15	G	11.36
953U015X4C•	95,000	15	X4C	8.59
144U015X5L•	140,000	15	X5L	11.45
152U25A1	1,500	25	A	2.11
282U25B1	2,800	25	B	2.58
332U025R2C•	3,300	25	R2C	2.32
382U25C1	3,800	25	C	3.17
452U25H1	4,500	25	H	3.38
63U25K1	6,000	25	K	3.95
632U025R3C•	6,300	25	R3C	2.84
852U25D1	8,500	25	D	4.77
922U025R4C•	9,200	25	R4C	3.33
103U025U3C•	10,000	25	U3C	3.31
133U025V3C•	13,000	25	V3C	4.18
1352U25E1	13,500	25	E	7.32
24U25F1	20,000	25	F	8.00
203U025V4C•	20,000	25	V4C	5.20
3152U25G1	31,500	25	G	10.72
323U025W4C•	32,000	25	W4C	7.28
483U025X4C•	48,000	25	X4C	8.59
713U025X5L•	71,000	25	X5L	11.44
112U35A1	1,100	35	A	2.32
212U35B1	2,100	35	B	2.64
232U035R2C•	2,300	35	R2C	2.32
312U35C1	3,100	35	C	3.72
362U35H1	3,600	35	H	3.93
432U035R3C•	4,300	35	R3C	2.84
472U35K1	4,700	35	K	4.24
532U35J1	5,300	35	J	4.43
632U035R4C•	6,300	35	R4C	3.33
692U35D1	6,900	35	D	5.81
952U035V3C•	9,500	35	V3C	4.18
113U35E1	11,000	35	E	7.87
113U035U4C•	11,000	35	U4C	4.32
143U035V4C•	14,000	35	V4C	5.20
1652U35F1	16,500	35	F	8.74
223U035W4C•	22,000	35	W4C	7.28
243U35G1	24,000	35	G	9.46
333U035X4C•	33,000	35	X4C	$ 8.59
493U035X5L•	49,000	35	X5L	11.45
82U50A1	800	50	A	2.13
152U50B1	1,500	50	B	2.51
152U050R2C•	1,500	50	R2C	2.32
23U50C1	2,000	50	C	2.79
252U50H1	2,500	50	H	3.08
292U050R3C•	2,900	50	R3C	2.84
332U50K1	3,300	50	K	3.97
352U50J1	3,500	50	J	4.03
432U050R4C•	4,300	50	R4C	3.33
452U50D1	4,500	50	D	4.24
502U050U3C•	5,000	50	U3C	3.31
652U050V3C•	6,500	50	V3C	4.18
732U50E1	7,300	50	E	6.50
742U050U4C•	7,400	50	U4C	4.32
952U050V4C•	9,500	50	V4C	5.20
14U50F1	10,000	50	F	13.08
153U050W4C•	15,000	50	W4C	7.28
1652U50G1	16,500	50	G	11.23
223U050X4C•	22,000	50	X4C	8.59
333U050X5L•	33,000	50	X5L	11.45
62U75A1	600	75	A	2.47
801U075R2C•	800	75	R2C	2.32
13U75B1	1,000	75	B	2.87
152U75C1	1,500	75	C	3.46
152U075R3C•	1,500	75	R3C	2.84
23U75H1	2,000	75	H	3.76
222U075R4C•	2,200	75	R4C	3.33
252U75K1	2,500	75	K	4.52
262U75J1	2,600	75	J	4.58
262U075U3C•	2,600	75	U3C	3.31
332U075V3C•	3,300	75	V3C	4.18
3451U75D1	3,450	75	D	4.92
382U075U4C•	3,800	75	U4C	4.32
492U075V4C•	4,900	75	V4C	5.20
552U75E1	5,500	75	E	7.83
792U075W4C•	7,900	75	W4C	7.28
822U75F1	8,200	75	F	8.85
113U075X4C•	11,000	75	X4C	8.59
1252U75G1	12,500	75	G	11.56
173U075X5L•	17,000	75	X5L	11.45
42U100A1	400	100	A	2.47
751U100B1	750	100	B	2.91
771U100R3C•	770	100	R3C	2.83
13U100C1	1,000	100	C	3.34
112U100R4C•	1,100	100	R4C	3.33
132U100H1	1,300	100	H	3.65
172U100J1	1,700	100	J	4.05
192U100U4C•	1,900	100	U4C	4.32
2251U100D1	2,250	100	D	5.02
252U100V4C•	2,500	100	V4C	5.20
362U100E1	3,600	100	E	7.37
402U100W4C•	4,000	100	W4C	7.28
532U100F1	5,300	100	F	8.23
592U100X4C•	5,900	100	X4C	8.59
832U100G1	8,300	100	G	11.84
2750U150A1	275	150	A	2.00
52U150B1	500	150	B	2.51
72U150C1	700	150	C	2.92
8750U150H1	875	150	H	3.33
112U150K1	1,100	150	K	3.82
1151U150J1	1,150	150	J	3.88
1551U150D1	1,550	150	D	4.90
252U150E1	2,500	150	E	7.24
362U150F1	3,600	150	F	8.65
562U150G1	5,600	150	G	12.07
181T200A1	180	200	A	2.47
341T200B1	340	200	B	2.95
451T200C1	450	200	C	3.15
551T200H1	550	200	H	3.50
751T200K1	750	200	K	4.03

•New item features higher capacitance, smaller case size. *Case sizes on following page.

85°C COMPUTER GRADE (CONT.)

Mallory No. CG-	Cap., μF	WV DC	Size *	Net Each
82T200J1	800	200	J	$ 4.20
13T200D1	1,000	200	D	5.51
1651T200E1	1,650	200	E	6.54
2451T200F1	2,450	200	F	8.34
382T200G1	3,800	200	G	14.98
141T250A1	140	250	A	2.95
2750T250B1	275	250	B	3.35
3750T250C1	375	250	C	3.65
451T250H1	450	250	H	3.95
62T250K1	600	250	K	4.47
82T250D1	800	250	D	5.78
132T250E1	1,300	250	E	7.70
33T250G1	3,000	250	G	12.41
2250T300B1	225	300	B	3.25
3250T300C1	325	300	C	3.50
5250T300K1	525	300	K	3.99
72T300D1	700	300	D	5.80
262T300G1	2,600	300	G	13.00
12T350A1	100	350	A	2.98
181T350B1	180	350	B	3.34
251T350C1	250	350	C	3.61
32T350H1	300	350	H	3.86
42T350K1	400	350	K	4.37
551T350D1	550	350	D	6.23
92T350E1	900	350	E	7.90
132T350F1	1,300	350	F	10.49
23T350G1	2,000	350	G	13.00
151T400C1	150	400	C	3.61
3250T400D1	325	400	D	4.64
531T400E1	530	400	E	6.16
41T450A1	40	450	A	2.20
111T450C1	110	450	C	3.35
141T450H1	140	450	H	3.67
181T450K1	180	450	K	3.78
241T450D1	240	450	D	4.18

65° C COMPUTER GRADE

Mallory No. CGS-	Cap., μF	WV DC	Size *	Net Each
722U010BB1	7,200	10	BB	$ 2.71
123U010R2C•	12,000	10	R2C	3.02
133U010BD1	13,000	10	BD	3.20
203U010BF1	20,000	10	BF	3.83
303U010DD1	30,000	10	DD	4.96
333U010R4C•	33,000	10	R4C	4.40
443U010DF1	44,000	10	DF	6.06
663U010DI1	66,000	10	DI	8.29
763U010V4C•	76,000	10	V4C	7.08
164U010FJ1	160,000	10	FJ	15.57
284U010X5R•	280,000	10	X5R	18.92
552U015BB1	5,500	15	BB	2.54
892U015R2C•	8,900	15	R2C	3.02
103U015BD1	10,000	15	BD	3.24
153U015BF1	15,000	15	BF	3.93
173U015R3C•	17,000	15	R3C	3.65
233U015DD1	23,000	15	DD	5.07
253U015R4C•	25,000	15	R4C	4.40
343U015DF1	34,000	15	DF	6.28
383U015V3C•	38,000	15	V3C	5.58
503U015DI1	50,000	15	DI	8.29
803U015FF1	80,000	15	FF	11.11
833U015V5L•	83,000	15	V5L	9.42
104U015FH1	100,000	15	FH	13.71
124U015FJ1	120,000	15	FJ	15.88
134U015X4C•	130,000	15	X4C	13.34
214U015X5R•	210,000	15	X5R	18.92
302U025BB1	3,000	25	BB	2.65
472U025R2C•	4,700	25	R2C	3.02
562U025BD1	5,600	25	BD	3.16
822U025BF1	8,200	25	BF	3.63
892U025R3C•	8,900	25	R3C	3.65
123U025DD1	12,000	25	DD	4.51
133U025R4C•	13,000	25	R4C	4.40
183U025DF1	18,000	25	DF	5.84
203U025V3C•	20,000	25	V3C	5.58
273U025DI1	27,000	25	DI	7.73
293U025V4C•	29,000	25	V4C	7.10
433U025FF1	43,000	25	FF	10.52
433U025V5L•	43,000	25	V5L	9.42
573U025FH1	57,000	25	FH	13.60
673U025FJ1	67,000	25	FJ	15.12
703U025X4C•	70,000	25	X4C	13.34
923U025X5C•	92,000	25	X5C	15.41
114U025X5R•	110,000	25	X5R	18.92
222U040BB1	2,200	40	BB	2.81
272U040R2C•	2,700	40	R2C	3.02
422U040BD1	4,200	40	BD	3.22
512U040R3C•	5,100	40	R3C	3.65
622U040BF1	6,200	40	BF	4.06
752U040R4C•	7,500	40	R4C	4.40
932U040DD1	9,300	40	DD	5.18
113U040V3C•	11,000	40	V3C	5.58
133U040DF1	13,000	40	DF	6.30
173U040V4C	17,000	40	V4C	7.08
203U040DI1	20,000	40	DI	8.38
323U040FF1	32,000	40	FF	12.04
403U040X4C•	40,000	40	X4C	13.34
433U040FH1	43,000	40	FH	15.06

65° C capacitors cont'd on following page.

65°C COMPUTER GRADE (CONT.)

Mallory No. CGS-	Cap., μF	WV DC	Size *	Net Each
503U040FJ1	50,000	40	FJ	$16.99
533U040X5C•	53,000	40	X5C	15.41
633U040X5R•	63,000	40	X5R	18.92
162U050BB1	1,600	50	BB	2.71
222U050R2C•	2,200	50	R2C	3.02
292U050BD1	2,900	50	BD	3.33
412U050R3C•	4,100	50	R3C	3.65
432U050BF1	4,300	50	BF	3.93
612U050R4C•	6,100	50	R4C	4.40
652U050DD1	6,500	50	DD	5.05
962U050DF1	9,600	50	DF	6.27
133U050V4C•	13,000	50	4VC	7.08
143U050DI1	14,000	50	DI	8.23
203U050V5L•	20,000	50	V5L	9.42
223U050FF1	22,000	50	FF	11.32
303U050FH1	30,000	50	FH	14.44
333U050X4C•	33,000	50	X4C	13.34
353U050FJ1	35,000	50	FJ	16.20
433U050X5C•	43,000	50	X5C	15.41
821U075BB1	820	75	BB	2.65
112U075R2C•	1,100	75	R2C	3.02
152U075BD1	1,500	75	BD	3.07
212U075R3C•	2,100	75	R3C	3.65
232U075BF1	2,300	75	BF	3.59
312U075R4C•	3,100	75	R4C	4.40
342U075DD1	3,400	75	DD	4.56
482U075V3C•	4,800	75	V3C	5.58
502U075DF1	5,000	75	DF	5.57
712U075V4C•	7,100	75	V4C	7.08
752U075DI1	7,500	75	DI	7.28
123U075FF1	12,000	75	FF	10.42
173U075X4C•	17,000	75	X4C	13.34
263U075X5R•	26,000	75	X5R	16.45
122U100BD1	1,200	100	BD	3.72
182U100BF1	1,800	100	BF	4.66
272U100DD1	2,700	100	DD	5.80
402U100DF1	4,000	100	DF	7.52
123U100FH1	12,000	100	FH	18.00
153U100FJ1	15,000	100	FJ	22.02
401U150BB1	400	150	BB	2.96
721U150BD1	720	150	BD	3.50
112U150BF1	1,100	150	BF	4.36
162U150DD1	1,600	150	DD	5.40
352U150DI1	3,500	150	DI	9.05
552U150FF1	5,500	150	FF	12.65
742U150FH1	7,400	150	FH	16.09
872U150FJ1	8,700	150	FJ	18.43
201T250BB1	200	250	BB	2.73
381T250BD1	380	250	BD	3.28
551T250BF1	550	250	BF	3.81
851T250DD1	850	250	DD	4.79
122T250DF1	1,200	250	DF	6.03
192T250DI1	1,900	250	DI	8.46
392T250FH1	3,900	250	FH	14.84
131T350BB1	130	350	BB	2.91
251T350BD1	250	350	BD	3.70
371T350BF1	370	350	BF	4.36
801T350DF1	800	350	DF	6.93
122T350DI1	1,200	350	DI	9.29
302T350FJ1	3,000	350	FJ	18.76
750T450BB1	75	450	BB	3.00
141T450BD1	140	450	BD	3.68
211T450BF1	210	450	BF	4.60
321T450DD1	320	450	DD	5.78
481T450DF1	480	450	DF	7.78
701T450DI1	700	450	DI	10.47
112T450FF1	1,100	450	FF	15.25
152T450FH1	1,500	450	FH	19.19
182T450FJ1	1,800	450	FJ	20.66

•New item features higher capacitance and smaller case size.

*COMPUTER GRADE CASE SIZES

Size includes plastic insulating sleeve.

CG or CGS Case Sizes			Dia. x L., Inches	Mtg. Clamp
A	BB	R2C	1 25/64 x 2 11/64	VR3†
B	BD	R3C	1 25/64 x 3 11/64	VR3†
C	BF	R4C	1 25/64 x 4 11/64	VR3†
H	.....	U3C	1 49/64 x 3 11/64	VR6‡
J	.....	U4C	1 49/64 x 4 11/64	VR6‡
K	DD	V3C	2 1/64 x 3 11/64	VR8§
D	DF	V4C	2 1/64 x 4 11/64	VR8§
...	DI	V5L	2 1/64 x 5 43/64	VR8§
E	.....	W4C	2 33/64 x 4 11/16	VR10#
F	FF	X4C	3 1/64 x 4 11/16	VR12^
....	FH	X5C	3 1/64 x 5 11/16	VR12^
G	.....	X5L	3 1/64 x 5 43/64	VR12^
....	FJ	X5R	3 1/64 x 5 59/64	VR12^

Net Each: †$0.25; ‡$0.29; §$0.32; #$0.34; ^$0.39.

AXIAL LEAD COMPUTER GRADE CAPACITORS

Series TCG axial lead, computer grade capacitor is a small tubular version of the Mallory type CG electrolytic capacitor listed at left and on previous page. All models are vented except 5/16" and 7/16" diameter cases. Long life, all welded construction. Has standard PVC insulating sleeve, optional Mylar* sleeve. **Temperature Range:** −40° C to +85° C. **Tolerance:** 3–75 WVDC, −10% +75% (U); 76–450 WVDC, −10% +50% (T).

*Registered DuPont Corp. trademark.

Mallory No. TCG-	Cap., μF	WV DC	Size Code	Net Each
132U003D1G	1,300	3	D1G	$2.10
202U003J1C	2,000	3	J1C	2.31
212U003D2A	2,100	3	D2A	2.31
302U003J1G	3,000	3	J1G	2.36
572U003L1L	5,700	3	L1L	2.54
602U003J2C	6,000	3	J2C	2.99
103U003N2C	10,000	3	N2C	3.16
113U003L2L	11,000	3	L2L	3.18
183U003N3C	18,000	3	N3C	3.97
800U006B0L	80	6	B0L	1.99
221U006D0L	220	6	D0L	1.99
601U006D1A	600	6	D1A	2.03
671U006D1A	670	6	D1A	2.03
102U006G1C	1,000	6	G1C	2.18
112U006G1C	1,100	6	G1C	2.19
202U006D2E	2,000	6	D2E	2.36
212U006D2E	2,100	6	D2E	2.36
402U006G2L	4,000	6	G2L	2.54
442U006G2L	4,400	6	G2L	2.99
602U006N1L	6,000	6	N1L	3.02
612U006N1L	6,100	6	N1L	3.02
103U006N2L	10,000	6	N2L	3.67
123U006N2L	12,000	6	N2L	3.97
501U010D1A	500	10	D1A	2.03
601U010D1A	600	10	D1A	2.03
102U010D1G	1,000	10	D1G	2.15
162U010D2A	1,600	10	D2A	2.31
252U010N1C	2,500	10	N1C	2.45
272U010N1C	2,700	10	N1C	2.45
502U010N1L	5,000	10	N1L	3.02
552U010N1L	5,500	10	N1L	3.22
103U010L3C	1,000	10	L3C	3.97
700U015B0L	70	15	B0L	1.99
181U015C0P	180	15	C0P	1.99
601U015C1L	600	15	C1L	2.10
122U015D2A	1,200	15	D2A	2.31
252U015G2L	2,500	15	G2L	2.54
292U015G2L	2,900	15	G2L	2.99
402U015N1L	4,000	15	N1L	3.22
412U015N1L	4,100	15	N1L	3.22
632U015L2L	6,300	15	L2L	3.67
802U015N2L	8,000	15	N2L	3.97
822U015N2L	8,200	15	N2L	3.97
103U015N3C	10,000	15	N3C	3.97
300U025B0L	30	25	B0L	1.99
121U025D0N	120	25	D0N	1.99
201U025D1A	200	25	D1A	2.03
231U025D1A	230	25	D1A	2.03
501U025D1N	500	25	D1N	2.31
521U025D1N	520	25	D1N	2.31
102U025N1C	1,000	25	N1C	2.45
112U025J1L	1,100	25	J1L	2.45
222U025J2L	2,200	25	J2L	3.02
232U025J2L	2,300	25	J2L	3.22
402U025L3C	4,000	25	L3C	3.67
412U025L3C	4,100	25	L3C	3.67
250U030B0L	25	30	B0L	1.99
650U030C0P	65	30	C0P	1.99
750U030D0N	75	30	D0N	1.99
950U030D0N	95	30	D0N	1.99
151U030D1A	150	30	D1A	2.03
171U030D1A	170	30	D1A	2.03
251U030D1G	250	30	D1G	2.10
281U030D1G	280	30	D1G	2.10
501U030D2E	500	30	D2E	2.31
531U030D2E	530	30	D2E	2.31
112U030G2L	1,100	30	G2L	2.54
212U030L2L	2,100	30	L2L	3.16
242U030L2L	2,400	30	L2L	3.25
302U030L3C	3,000	30	L3C	3.67
180U050B0L	18	50	B0L	1.99
400U050D0N	40	50	D0N	1.99
500U050D0N	50	50	D0N	1.99
101U050E1G	100	50	E1G	2.03
151U050D1G	150	50	D1G	2.10
251U050D2E	250	50	D2E	2.31
291U050D2E	290	50	D2E	2.31
501U050G2L	500	50	G2L	2.45
601U050G2L	600	50	G2L	2.45
112U050N2C	1,100	50	N2C	3.02
122U050N2C	1,200	50	N2C	3.18
232U050N3C	2,300	50	N3C	3.97
252U050N3L	2,500	50	N3L	3.97
100U075B0N	10	75	B0N	1.99
250U075D0N	25	75	D0N	1.99
400U075D0R	40	75	D0R	1.99
150T100C0P	15	100	C0P	1.99
1R0T150B0L	1	150	B0L	1.99
5R0T150B0N	5	150	B0N	1.99
7R0T150B0H	7	150	B0N	1.99
100T150C0P	10	150	C0P	1.99
250T150E1G	25	150	E1G	2.03
500T150D1N	50	150	D1N	2.15
101T150J1L	100	150	J1L	2.45
111T150J1L	110	150	J1L	2.45
251T150L2C	250	150	L2C	3.02
261T150L2C	260	150	L2C	3.22
531T150N3C	530	150	N3C	$3.97
561T150N3C	560	150	N3C	3.97
200T250E2C	20	250	E2C	2.10
500T250L1G	50	250	L1G	2.36
101T250L2C	100	250	L2C	2.99
201T250N3C	200	250	N3C	3.25
211T250N3C	210	250	N3C	3.25
200T350G1L	20	350	G1L	2.31
300T350G2C	30	350	G2C	2.45
400T350G2L	40	350	G2L	2.45
500T350N1L	50	350	N1L	2.54
600T350N1L	60	350	N1L	2.99
101T350N2L	100	350	N2L	3.16
121T350N2L	120	350	N2L	3.25
161T350N3L	160	350	N3L	3.97
181T350N3L	180	350	N3L	3.97
111T400H3L	110	400	N3L	3.97
5R0T450E1L	5	450	E1L	2.10
100T450G1L	10	450	G1L	2.31
120T450G1L	12	450	G1L	2.31
200T450G2L	20	450	G2L	2.45
500T450N2C	50	450	N2C	3.25
750T450N3C	75	450	N3C	3.97
850T450N3C	85	450	N3C	3.97

.328" TO .453" DIAMETER CASES

Cases have clear PVC insulating sleeve. Rubber end seal. Vent on .390" diameter model only. Bare tinned copper leads #20 AWG, .032" diameter, 2" long. Cases listed are insulated. For case measurement, uninsulated, deduct .015" from diameter and length.

Case Code	Insulated Size, Inches	
	Diameter	Length
B0L	.328	.640
B0N	.328	.765
C0P	.390	.828
C1L	.390	1.640
D0L	.453	.640
D0N	.453	.765
D0R	.453	.890
D1A	.453	1.015
D1G	.453	1.390
D1N	.453	1.765
D2A	.453	2.015
D2E	.453	2.265

.515" TO 1.015" DIAMETER CASES

Cases have clear PVC insulating sleeve. Molded plastic cover. All models vented. Bare tinned copper leads #20 AWG, .032" diameter, 2½" long, on .515" and .640" diameter cases; #18 AWG, .040" diameter, 2½" long on all others. Cases listed are insulated. For case measurement, uninsulated, deduct .015" from diameter and length.

Case Code	Insulated Size, Inches	
	Diameter	Length
E1G	.515	1.390
E1L	.515	1.640
E2C	.515	2.140
G1C	.640	1.140
G1L	.640	1.640
G2C	.640	2.140
G2L	.640	2.640
J1C	.765	1.140
J1G	.765	1.390
J1L	.765	1.640
J2C	.765	2.140
J2L	.765	2.640
L1G	.890	1.390
L1L	.890	1.640
L2C	.890	2.140
L2L	.890	2.640
L3C	.890	3.140
N1C	1.015	1.140
N1L	1.015	1.640
N2C	1.015	2.140
N2L	1.015	2.640
N3C	1.015	3.140
N3L	1.015	3.640

TAC SOLID ELECTROLYTE MOLDED AXIAL-LEAD TANTALUMS

Miniature tubular design for high density applications. Solid electrolyte tantalum in precision molded case. **Size:** Indicated by final suffix number (e.g., TAC825K003-PO2): **2**, .105″ dia. x .295″ lg.; **3**, .137″ dia. x .340″ lg.; **4**, .187″ dia. x .530″ lg. Axial leads .020″ dia. x 1.500″ lg.

Mallory Number	Cap., µF	WVDC at +85° C	Price Code
TAC825K003PO2	8.2	3	2
TAC106*003PO2	10	3	2
TAC156*003PO2	15	3	2
TAC186K003PO2	18	3	2
TAC686*003PO4	68	3	4
TAC826K003PO4	82	3	4
TAC565K006PO2	5.6	6	2
TAC685*006PO2	6.8	6	2
TAC825K006PO2	8.2	6	2
TAC825K006PO5	8.2	6	5
TAC106*006PO2	10	6	2
TAC106*006PO5	10	6	5
TAC126K006PO2	12	6	2
TAC126K006PO5	12	6	5
TAC156*006PO4	15	6	4
TAC156*006PO5	15	6	5
TAC186K006PO4	18	6	4
TAC186K006PO5	18	6	5
TAC226*006PO4	22	6	4
TAC226*006PO5	22	6	5
TAC276K006PO4	27	6	4
TAC336*006PO4	33	6	4
TAC396K006PO4	39	6	4
TAC476*006PO4	47	6	4
TAC566K006PO4	56	6	4
TAC125K010PO2	1.2	10	2
TAC155*010PO2	1.5	10	2
TAC185K010PO2	1.8	10	2
TAC225*010PO2	2.2	10	2
TAC275K010PO2	2.7	10	2
TAC335*010PO2	3.3	10	2
TAC395K010PO2	3.9	10	2
TAC475*010PO2	4.7	10	2
TAC565K010PO2	5.6	10	2
TAC565K010PO5	5.6	10	5
TAC685*010PO2	6.8	10	2
TAC825K010PO4	8.2	10	4
TAC825K010PO5	8.2	10	5
TAC106*010PO4	10	10	4
TAC106*010PO5	10	10	5
TAC126K010PO4	12	10	4
TAC126K010PO5	12	10	5
TAC156*010PO4	15	10	4
TAC156*010PO5	15	10	5
TAC186K010PO4	18	10	4
TAC226*010PO4	22	10	4
TAC276K010PO4	27	10	4
TAC336*010PO4	33	10	4
TAC396K010PO4	39	10	4
TAC125K015PO2	1.2	15	2
TAC155K015PO2	1.5	15	2
TAC185K015PO2	1.8	15	2
TAC225*015PO2	2.2	15	2
TAC275K015PO2	2.7	15	2
TAC335*015PO3	3.3	15	3
TAC395K015PO4	3.9	15	4
TAC395K015PO5	3.9	15	5
TAC475*015PO4	4.7	15	4
TAC565K015PO4	5.6	15	4
TAC565K015PO5	5.6	15	5
TAC685*015PO4	6.8	15	4
TAC825K015PO4	8.2	15	4
TAC825K015PO5	8.2	15	5
TAC106*015PO4	10	15	4
TAC106*015PO5	10	15	5
TAC126K015PO4	12	15	4
TAC156*015PO4	15	15	4
TAC186K015PO4	18	15	4
TAC226*015PO4	22	15	4
TAC105*020PO2	1.0	20	2
TAC125K020PO2	1.2	20	2
TAC155*020PO2	1.5	20	2
TAC185K020PO2	1.8	20	2
TAC225*020PO2	2.2	20	2
TAC275K020PO5	2.7	20	5
TAC335*020PO4	3.3	20	4
TAC335*020PO5	3.3	20	5
TAC395K020PO4	3.9	20	4
TAC395K020PO5	3.9	20	5
TAC475*020PO4	4.7	20	4
TAC475*020PO5	4.7	20	5
TAC565K020PO4	5.6	20	4
TAC685*020PO4	6.8	20	4
TAC825K020PO4	8.2	20	4
TAC106*020PO4	10	20	4
TAC126K020PO4	12	20	4
TAC156*020PO4	15	20	4
TAC125K025PO3	1.2	25	3
TAC155*025PO3	1.5	25	3
TAC185K025PO3	1.8	25	3
TAC225*025PO3	2.2	25	3
TAC275K025PO4	2.7	25	4
TAC335*025PO4	3.3	25	4
TAC395K025PO4	3.9	25	4
TAC395K025PO5	3.9	25	5
TAC475*025PO4	4.7	25	4
TAC475*025PO5	4.7	25	5
TAC565K025PO4	5.6	25	4
TAC565K025PO5	5.6	25	5
TAC685*025PO4	6.8	25	4
TAC825K025PO4	8.2	25	4
TAC106*025PO4	10	25	4
TAC126K025PO4	12	25	4
TAC564K035PO2	.56	35	2
TAC684*035PO2	.68	35	2
TAC824K035PO2	.82	35	2
TAC125K035PO3	1.2	35	3
TAC155K035PO5	1.5	35	5
TAC185K035PO5	1.8	35	5
TAC225*035PO5	2.2	35	5
TAC275K035PO4	2.7	35	4
TAC275K035PO5	2.7	35	5
TAC335*035PO4	3.3	35	4
TAC335*035PO5	3.3	35	5
TAC395K035PO4	3.9	35	4
TAC475*035PO4	4.7	35	4
TAC565K035PO4	5.6	35	4
TAC685*035PO4	6.8	35	4
TAC825K035PO4	8.2	35	4
TAC823K050PO2	.082	50	2
TAC104*050PO2	.10	50	2
TAC124K050PO2	.12	50	2
TAC154*050PO2	.15	50	2
TAC184K050PO2	.18	50	2
TAC224*050PO2	.22	50	2
TAC274K050PO2	.27	50	2
TAC334*050PO2	.33	50	2
TAC394K050PO2	.39	50	2
TAC474*050PO2	.47	50	2
TAC564K050PO3	.56	50	3
TAC684*050PO3	.68	50	3
TAC824K050PO3	.82	50	3
TAC105*050PO3	1.0	50	3
TAC125K050PO4	1.2	50	4
TAC125K050PO5	1.2	50	5
TAC155*050PO4	1.5	50	4
TAC155*050PO5	1.5	50	5
TAC185K050PO4	1.8	50	4
TAC225*050PO4	2.2	50	4
TAC275K050PO4	2.7	50	4
TAC335*050PO4	3.3	50	4
TAC395K050PO4	3.9	50	4
TAC475*050PO4	4.7	50	4

*Specify tolerance: **M**, ±20%; **K**, ±10%.

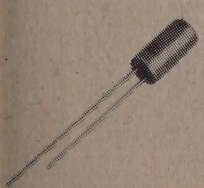
3 to 35 Volts

Price Code	Tol.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
2	±10%	$0.79	$0.76	$0.59	$0.53	$0.43
3	±10%	.79	.76	.59	.53	.43
4	±10%	.81	.68	.63	.56	.45
5	±10%	.80	.68	.57	.50	.40
2	±20%	.74	.63	.56	.50	.40
3	±20%	.74	.63	.56	.50	.40
4	±20%	.76	.65	.58	.52	.42
5	±20%	.76	.65	.54	.48	.38

50 Volts

Price Code	Tol.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
2	±10%	$0.84	$0.68	$0.62	$0.56	$0.45
3	±10%	.84	.68	.62	.56	.45
4	±10%	.88	.71	.65	.58	.49
5	±10%	.92	.79	.66	.58	.46
2	±20%	.81	.65	.58	.49	.42
3	±20%	.81	.65	.58	.49	.42
4	±20%	.83	.67	.60	.55	.44
5	±20%	.88	.76	.63	.55	.44

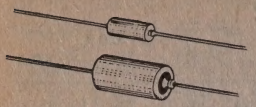
VTT ALUMINUM ELECTROLYTIC CAPACITORS



Miniature single ended capacitors will fit easily in small pocket transistor radio circuits and other applications where space is at a premium. Use in filtering, coupling and bypass applications. **Operating temperature:** −20° to +85° C. **Tolerance:** For VTT numbers with sword −10 +100%; all others −10 +75%.

Mallory No.	Cap., µF	WV DC	Size Dia. x Lg.	Net Ea.
VTT47A6§	47	6.3	.248 x .472	$0.29
VTT1000J6	1000	6.3	.512 x .984	.75
VTT2200L6	2200	6.3	.630 x 1.240	1.11
VTT3300N6	3300	6.3	.630 x 1.614	1.44
VTT33A10§	33	10	.248 x .472	.29
VTT100E10	100	10	.394 x .492	.36
VTT220F10	220	10	.394 x .630	.42
VTT330G10	330	10	.394 x .787	.48
VTT22A16§	22	16	.248 x .472	.29
VTT47D16	47	16	.315 x .492	.33
VTT100F16	100	16	.394 x .630	.42
VTT220G16	220	16	.394 x .787	.48
VTT330H16	330	16	.512 x .787	.63
VTT470J16	470	16	.512 x .984	.75
VTT1000L16	1000	16	.630 x 1.240	1.11
VTT1500N16	1500	16	.630 x 1.614	1.44
VTT15A20§	15	20	.248 x .472	.29
VTT10A25§	10	25	.248 x .472	$0.29
VTT33D25	33	25	.315 x .492	.33
VTT47E25	47	25	.394 x .492	.36
VTT100G25	100	25	.394 x .787	.48
VTT220H25	220	25	.512 x .787	.63
VTT330J25	330	25	.512 x .984	.75
VTT470K25	470	25	.630 x .984	.93
VTT1000M25	1000	25	.630 x 1.437	1.23
VTT6R8A35§	6.8	35	.248 x .472	.29
VTT33E35	33	35	.394 x .492	.36
VTT47F35	47	35	.394 x .630	.42
VTT220J35	220	35	.512 x .984	.75
VTT330K35	330	35	.630 x .984	.93
VTT470L35	470	35	.630 x 1.240	1.11
VTT1R5A50§	1.5	50	.248 x .472	.29
VTT2R2A50§	2.2	50	.248 x .472	.29
VTT3R3A50§	3.3	50	.248 x .472	.29
VTT4R7A50§	4.7	50	.248 x .472	.29
VTT33F50	33	50	.394 x .630	.42
VTT100H50	100	50	.512 x .787	.63
VTT220K50	220	50	.630 x .984	.93
VTT330L50	330	50	.630 x 1.240	1.11
VTT470N50	470	50	.630 x 1.614	1.44
VTTR47B63	.47	63	.197 x .433	.33
VTT1B63	1	63	.197 x .433	.33
VTT10D63	10	63	.315 x .492	.39
VTT22E63	22	63	.394 x .492	.42
VTT47G63	47	63	.394 x .787	.51

§No copy for note.



TYPE CSR13 SOLID ELECTROLYTE TANTALUM CAPACITORS TO MIL-C-39003/01, FRL (FAILURE RATE LEVEL) "M" (1%) AND "P" (0.1%)

Established reliability design is hermetically sealed with plastic insulating sleeve. Meet MIL-C-39003A specifications. Life test, 10,000 hours. High reliability, low DC leakage and low impedance. Temperature range, −55° C to +125° C. Leads may be welded or soldered; are tinned nickel, type N1 of MIL-STD-1276.

STOCK VALUES FRL (FAILURE RATE LEVEL) "M" (1%/1000 HOURS) AND "P" (0.1%/1000 HOURS)

Cap., µF	Tol.	WVDC at +85° C	MIL and Mallory No.*	MIL Dash No.‡	Size †
5.6	±10%	6	CSR13B565KM	-2241	A
6.8	±10%	6	CSR13B685KM	-2242	A
6.8	±20%	6	CSR13B685MM	-2243	A
47	±10%	6	CSR13B476KM	-2244	B
47	±20%	6	CSR13B476MM	-2245	B
56	±10%	6	CSR13B566KM	-2246	B
150	±10%	6	CSR13B157KM	-2247	C
150	±20%	6	CSR13B157MM	-2248	C
180	±10%	6	CSR13B187KM	-2249	C
270	±10%	6	CSR13B277KM	-2250	D
330	±10%	6	CSR13B337KM	-2251	D
330	±20%	6	CSR13B337MM	-2252	D
3.9	±10%	10	CSR13C395KM	-2253	A
4.7	±10%	10	CSR13C475KM	-2254	A
4.7	±20%	10	CSR13C475MM	-2255	A
27	±10%	10	CSR13C276KM	-2256	B
33	±10%	10	CSR13C336KM	-2257	B
33	±20%	10	CSR13C336MM	-2258	B
39	±10%	10	CSR13C396KM	-2259	B
82	±10%	10	CSR13C826KM	-2260	C
100	±10%	10	CSR13C107KM	-2261	C
100	±20%	10	CSR13C107MM	-2262	C
120	±10%	10	CSR13C127KM	-2263	C
180	±10%	10	CSR13C187KM	-2264	D
220	±10%	10	CSR13C227KM	-2265	D
220	±20%	10	CSR13C227MM	-2266	D
2.7	±10%	15	CSR13D275KM	-2267	A
3.3	±10%	15	CSR13D335KM	-2268	A
3.3	±20%	15	CSR13D335MM	-2269	A
18	±10%	15	CSR13D186KM	-2270	B
22	±10%	15	CSR13D226KM	-2271	B
22	±20%	15	CSR13D226MM	-2272	B
56	±10%	15	CSR13D566KM	-2273	C
68	±10%	15	CSR13D686KM	-2274	C
68	±20%	15	CSR13D686MM	-2275	C
120	±10%	15	CSR13D127KM	-2276	D
150	±10%	15	CSR13D157KM	-2277	D
150	±20%	15	CSR13D157MM	-2278	D
1.2	±10%	20	CSR13E125KM	-2279	A
1.5	±10%	20	CSR13E155KM	-2280	A
1.5	±20%	20	CSR13E155MM	-2281	A
1.8	±10%	20	CSR13E185KM	-2282	A
2.2	±10%	20	CSR13E225KM	-2283	A
2.2	±20%	20	CSR13E225MM	-2284	A
8.2	±10%	20	CSR13E825KM	-2285	B
10	±10%	20	CSR13E106KM	-2286	B
10	±20%	20	CSR13E106MM	-2287	B
12	±10%	20	CSR13E126KM	-2288	B
15	±10%	20	CSR13E156KM	-2289	B
15	±20%	20	CSR13E156MM	-2290	B
27	±10%	20	CSR13E276KM	-2291	C
33	±10%	20	CSR13E336KM	-2292	C
33	±20%	20	CSR13E336MM	-2293	C
39	±10%	20	CSR13E396KM	-2294	C
47	±10%	20	CSR13E476KM	-2295	C
47	±20%	20	CSR13E476MM	-2296	C
56	±10%	20	CSR13E566KM	-2297	D
68	±10%	20	CSR13E686KM	-2298	D
68	±20%	20	CSR13E686MM	-2299	D
82	±10%	20	CSR13E826KM	-2300	D
100	±10%	20	CSR13E107KM	-2301	D
100	±20%	20	CSR13E107MM	-2302	D
5.6	±10%	35	CSR13F565KM	-2303	B
6.8	±10%	35	CSR13F685KM	-2304	B
6.8	±20%	35	CSR13F685MM	-2305	B
22	±10%	35	CSR13F226KM	-2306	C
22	±20%	35	CSR13F226MM	-2307	C
27	±10%	35	CSR13F276KM	-2308	D
33	±10%	35	CSR13F336KM	-2309	D
33	±20%	35	CSR13F336MM	-2310	D
39	±10%	35	CSR13F396KM	-2311	D
47	±10%	35	CSR13F476KM	-2312	D
47	±20%	35	CSR13F476MM	-2313	D
.0047	±10%	50	CSR13G472KM	-2314	A
.0047	±20%	50	CSR13G472MM	-2315	A
.0056	±10%	50	CSR13G562KM	-2316	A
.0068	±10%	50	CSR13G682KM	-2317	A
.0068	±20%	50	CSR13G682MM	-2318	A
.0082	±10%	50	CSR13G822KM	-2319	A
.01	±10%	50	CSR13G103KM	-2320	A
.01	±20%	50	CSR13G103MM	-2321	A
.012	±10%	50	CSR13G123KM	-2322	A
.015	±10%	50	CSR13G153KM	-2323	A
.015	±20%	50	CSR13G153MM	-2324	A
.018	±10%	50	CSR13G183KM	-2325	A
.022	±10%	50	CSR13G223KM	-2326	A
.022	±20%	50	CSR13G223MM	-2327	A
.027	±10%	50	CSR13G273KM	-2328	A
.033	±10%	50	CSR13G333KM	-2329	A
.033	±20%	50	CSR13G333MM	-2330	A
.039	±10%	50	CSR13G393KM	-2331	A
.047	±10%	50	CSR13G473KM	-2332	A
.047	±20%	50	CSR13G473MM	-2333	A
.056	±10%	50	CSR13G563KM	-2334	A
.068	±10%	50	CSR13G683KM	-2335	A
.068	±20%	50	CSR13G683MM	-2336	A
.082	±10%	50	CSR13G823KM	-2337	A
.1	±10%	50	CSR13G104KM	-2338	A
.1	±20%	50	CSR13G104MM	-2339	A
.12	±10%	50	CSR13G124KM	-2340	A
.15	±10%	50	CSR13G154KM	-2341	A
.15	±20%	50	CSR13G154MM	-2342	A
.18	±10%	50	CSR13G184KM	-2343	A
.22	±10%	50	CSR13G224KM	-2344	A
.22	±20%	50	CSR13G224MM	-2345	A
.27	±10%	50	CSR13G274KM	-2346	A
.33	±10%	50	CSR13G334KM	-2347	A
.33	±20%	50	CSR13G334MM	-2348	A
.39	±10%	50	CSR13G394KM	-2349	A
.47	±10%	50	CSR13G474KM	-2350	A
.47	±20%	50	CSR13G474MM	-2351	A
.56	±10%	50	CSR13G564KM	-2352	A
.68	±10%	50	CSR13G684KM	-2353	A
.68	±20%	50	CSR13G684MM	-2354	A
.82	±10%	50	CSR13G824KM	-2355	A
1.0	±10%	50	CSR13G105KM	-2356	A
1.0	±20%	50	CSR13G105MM	-2357	A
1.2	±10%	50	CSR13G125KM	-2358	B
1.5	±10%	50	CSR13G155KM	-2359	B
1.5	±20%	50	CSR13G155MM	-2360	B
1.8	±10%	50	CSR13G185KM	-2361	B
2.2	±10%	50	CSR13G225KM	-2362	B
2.2	±20%	50	CSR13G225MM	-2363	B
2.7	±10%	50	CSR13G275KM	-2364	B
3.3	±10%	50	CSR13G335KM	-2365	B
3.3	±20%	50	CSR13G335MM	-2366	B
3.9	±10%	50	CSR13G395KM	-2367	B
4.7	±10%	50	CSR13G475KM	-2368	B
4.7	±20%	50	CSR13G475MM	-2369	B
5.6	±10%	50	CSR13G565KM	-2370	C
6.8	±10%	50	CSR13G685KM	-2371	C
6.8	±20%	50	CSR13G685MM	-2372	C
8.2	±10%	50	CSR13G825KM	-2373	C
10	±10%	50	CSR13G106KM	-2374	C
10	±20%	50	CSR13G106MM	-2375	C
12	±10%	50	CSR13G126KM	-2376	C
15	±10%	50	CSR13G156KM	-2377	C
15	±20%	50	CSR13G156MM	-2378	C
18	±10%	50	CSR13G186KM	-2379	C
22	±10%	50	CSR13G226KM	-2380	D
22	±20%	50	CSR13G226MM	-2381	D

*Mallory No. shown is for "M" Failure Rate Level capacitor. To order "P" Failure Rate Level capacitor, change last letter M of Mallory No. to **P**; and, ‡add **240** to MIL Dash number (e.g., CSR13B565KM-2241 becomes CSR13B565K**P**-**2481**).

†"M" LEVEL NET PRICES BY CASE SIZE, VOLTAGE AND TOLERANCE

Voltage	† Case	Size, Inches Dia. x Lgth.	±10% Tolerance Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	±20% Tolerance Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
6, 10, 15, 20 and 35 WVDC	A	.135 x .286	Prices on Request					Prices on Request				
	B	.185 x .474										
	C	.289 x .686										
	D	.351 x .786										
50 WVDC	A	.135 x .286										
	B	.185 x .474										
	C	.289 x .686										
	D	.351 x .786										

†"P" LEVEL NET PRICES BY CASE SIZE, VOLTAGE AND TOLERANCE

6, 10, 15, 20, and 35 WVDC	A	.135 x .286	Prices on Request					Prices on Request				
	B	.185 x .474										
	C	.289 x .686										
	D	.351 x .786										
50 WVDC	A	.135 x .286										
	B	.185 x .474										
	C	.289 x .686										
	D	.351 x .786										

CS12, CS13 AND TAS SOLID ELECTROLYTE TANTALUM CAPACITORS

Ultra-miniature capacitors designed to withstand the most difficult environmental conditions. Furnished in hermetically sealed metal cases. Temperature range: −80° C to +85° C (to +125° C with derating). TAS commercial types 6 through 50 WVDC are shown on this page. CS12/13 types to both MIL-C-26655A and MIL-C-26655B are shown on next page. **TAS ORDERING INFORMATION:** Are specified by a 13-digit part number. **Tolerance:** Specify **K** for ±10% or **M** for ±20%. **Insulating Sleeve:** TAS types are listed with uninsulated cases; for insulating sleeve, change 12th digit of part number from **0** to **1** and add **2c** to prices shown. **Case Sizes:** TAS sizes are indicated by the last digit in the part number (**A, C, F, & G**). See price table below. **CS12/13 ORDERING INFORMATION:** Shown on next page to both MIL-C-26655A and MIL-C-26655B. Either type may be ordered. Prices are shown below by case code. **Tolerance:** Specify **K** for ±10% or **M** for ±20%. **Insulating Sleeve:** Uninsulated CS12 types are shown. For insulating sleeve, specify **CS13** and add **2c** to prices shown. **Case Sizes:** Shown below by code letter in listing, see price table below.

STOCK VALUES—TAS TYPES

Cap., µF	6 WVDC Mallory No.†	10 WVDC Mallory No.†	15 WVDC Mallory No.†	20 WVDC Mallory No.†	35 WVDC Mallory No.†	50 WVDC Mallory No.†
.0047	TAS472*006P0A	TAS472*010P0A	TAS472*015P0A	TAS472*020P0A	TAS472*035P0A*	.....
.0056	TAS562K006P0A	TAS562K010P0A	TAS562K015P0A	TAS562K020P0A	TAS562K035P0A*	.....
.0068	TAS682*006P0A	TAS682*010P0A	TAS682*015P0A	TAS682*020P0A	TAS682*035P0A*	.....
.0082	TAS822K006P0A	TAS822K010P0A	TAS822K015P0A	TAS822K020P0A	TAS822K035P0A*	.....
.010	TAS103*006P0A	TAS103*010P0A	TAS103*015P0A	TAS103*020P0A	TAS103*035P0A*	.....
.012	TAS123K006P0A	TAS123K010P0A	TAS123K015P0A	TAS123K020P0A	TAS123K035P0A*	.....
.015	TAS153*006P0A	TAS153*010P0A	TAS153*015P0A	TAS153*020P0A	TAS153*035P0A*	.....
.018	TAS183K006P0A	TAS183K010P0A	TAS183K015P0A	TAS183K020P0A	TAS183K035P0A*	.....
.022	TAS223*006P0A	TAS223*010P0A	TAS223*015P0A	TAS223*020P0A	TAS223*035P0A*	.....
.027	TAS273K006P0A	TAS273K010P0A	TAS273K015P0A	TAS273K020P0A	TAS273K035P0A*	.....
.033	TAS333*006P0A	TAS333*010P0A	TAS333*015P0A	TAS333*020P0A	TAS333*035P0A*	.....
.039	TAS393K006P0A	TAS393K010P0A	TAS393K015P0A	TAS393K020P0A	TAS393K035P0A*	.....
.047	TAS473*006P0A	TAS473*010P0A	TAS473*015P0A	TAS473*020P0A	TAS473*035P0A*	.....
.056	TAS563K006P0A	TAS563K010P0A	TAS563K015P0A	TAS563K020P0A	TAS563K035P0A*	.....
.068	TAS683*006P0A	TAS683*010P0A	TAS683*015P0A	TAS683*020P0A	TAS683*035P0A*	.....
.082	TAS823K006P0A	TAS823K010P0A	TAS823K015P0A	TAS823K020P0A	TAS823K035P0A*	.....
.10	TAS104*006P0A	TAS104*010P0A	TAS104*015P0A	TAS104*020P0A	TAS104*035P0A*	.....
.12	TAS124K006P0A	TAS124K010P0A	TAS124K015P0A	TAS124K020P0A	TAS124K035P0A*	.....
.15	TAS154*006P0A	TAS154*010P0A	TAS154*015P0A	TAS154*020P0A	TAS154*035P0A*	.....
.18	TAS184K006P0A	TAS184K010P0A	TAS184K015P0A	TAS184K020P0A	TAS184K035P0A*	.....
.22	TAS224*006P0A	TAS224*010P0A	TAS224*015P0A	TAS224*020P0A	TAS224*035P0A*	.....
.27	TAS274K006P0A	TAS274K010P0A	TAS274K015P0A	TAS274K020P0A	TAS274K035P0A*	.....
.33	TAS334*006P0A	TAS334*010P0A	TAS334*015P0A	TAS334*020P0A	TAS334*035P0A*	TAS334*050P0A
.39	TAS394K006P0A	TAS394K010P0A	TAS394K015P0A	TAS394K020P0A	TAS394K035P0A*	TAS394K050P0A
.47	TAS474*006P0A	TAS474*010P0A	TAS474*015P0A	TAS474*020P0A	TAS474*035P0A*	TAS474*050P0A
.56	TAS564K006P0A	TAS564K010P0A	TAS564K015P0A	TAS564K020P0A	TAS564K035P0A*	TAS564K050P0A
.68	TAS684*006P0A	TAS684*010P0A	TAS684*015P0A	TAS684*020P0A	TAS684*035P0A*	TAS684*050P0A
.82	TAS824K006P0A	TAS824K010P0A	TAS824K015P0A	TAS824K020P0A	TAS824K035P0A*	TAS824K050P0A
1.0	TAS105*006P0A	TAS105*010P0A	TAS105*015P0A	TAS105*020P0A	TAS105*035P0A*	TAS105*050P0A
1.2	TAS125K006P0A	TAS125K010P0A	TAS125K015P0A	TAS125K020P0A*	TAS125K035P0C*	TAS125K050P0C
1.5	TAS155*006P0A	TAS155*010P0A	TAS155*015P0A	TAS155*020P0A*	TAS155*035P0C*	TAS155*050P0C
1.8	TAS185K006P0A	TAS185K010P0A	TAS185K015P0A	TAS185K020P0A*	TAS185K035P0C*	TAS185K050P0C
2.2	TAS225*006P0A	TAS225*010P0A	TAS225*015P0A	TAS225*020P0A*	TAS225*035P0C*	TAS225*050P0C
2.7	TAS275K006P0A	TAS275K010P0A	TAS275K015P0A*	TAS275K020P0C	TAS275K035P0C*	TAS275K050P0C
3.3	TAS335*006P0A	TAS335*010P0A	TAS335*015P0A*	TAS335*020P0C	TAS335*035P0C*	TAS335*050P0C
3.9	TAS395K006P0A	TAS395K010P0A*	TAS395K015P0C	TAS395K020P0C	TAS395K035P0C*	TAS395K050P0C
4.7	TAS475*006P0A	TAS475*010P0A*	TAS475*015P0C	TAS475*020P0C	TAS475*035P0C*	TAS475*050P0C
5.6	TAS565K006P0A*	TAS565K010P0C	TAS565K015P0C	TAS565K020P0C	TAS565K035P0C*	TAS565K050P0F
6.8	TAS685*006P0A*	TAS685*010P0C	TAS685*015P0C	TAS685*020P0C	TAS685*035P0C*	TAS685*050P0F
8.2	TAS825K006P0C	TAS825K010P0C	TAS825K015P0C	TAS825K020P0C*	TAS825K035P0F*	TAS825K050P0F
10	TAS106*006P0C	TAS106*010P0C	TAS106*015P0C	TAS106*020P0C*	TAS106*035P0F*	TAS106*050P0F
12	TAS126K006P0C	TAS126K010P0C	TAS126K015P0C	TAS126K020P0C*	TAS126K035P0F*	TAS126K050P0F
15	TAS156*006P0C	TAS156*010P0C	TAS156*015P0C	TAS156*020P0C*	TAS156*035P0F*	TAS156*050P0F
18	TAS186K006P0C	TAS186K010P0C	TAS186K015P0C*	TAS186K020P0F	TAS186K035P0F*	TAS186K050P0F
22	TAS226*006P0C	TAS226*010P0C	TAS226*015P0C*	TAS226*020P0F	TAS226*035P0F*	TAS226*050P0G
27	TAS276K006P0C	TAS276K010P0C*	TAS276K015P0F	TAS276K020P0F*	TAS276K035P0G*	.....
33	TAS336*006P0C	TAS336*010P0C*	TAS336*015P0F	TAS336*020P0F*	TAS336*035P0G*	.....
39	TAS396K006P0C	TAS396K010P0C*	TAS396K015P0F	TAS396K020P0F*	TAS396K035P0G*	.....
47	TAS476*006P0C*	TAS476*010P0F	TAS476*015P0F	TAS476*020P0F*	TAS476*035P0G	.....
56	TAS566K006P0C*	TAS566K010P0F	TAS566K015P0F*	TAS566K020P0G*	.....	.....
68	TAS686*006P0F	TAS686*010P0F	TAS686*015P0F*	TAS686*020P0G*	TAS686M035P0G	.....
82	TAS826K006P0F	TAS826K010P0F*	TAS826K015P0G	TAS826K020P0G*	.....	.....
00	TAS107*006P0F	TAS107*010P0F*	TAS107*015P0G	TAS107*020P0G*	.....	.....
20	TAS127K006P0F	TAS127K010P0F*	TAS127K015P0G*	.....	.....	.....
50	TAS157*006P0F*	TAS157*010P0G	TAS157*015P0G*	.....	.....	.....
80	TAS187K006P0F*	TAS187K010P0G*	.....	.....	.....	.....
20	TAS227*006P0G	TAS227*010P0G*	.....	.....	.....	.....
70	TAS277K006P0G*	.....	.....	.....	.....	.....
30	TAS337*006P0G*	.....	.....	.....	.....	.....

*Specify **K** for ±10% tolerance or **M** for ±20%. *Parent value; Max. WVDC vs. capacity, size and price. †Last letter indicates size; ee pricing below.

TAS AND CS12/13 INDUSTRIAL NET PRICES

For types with insulating sleeve; add .010" dia. and .036" lg. for sleeve; consult factory for pricing.

FOR 6, 10, 15, 20 AND 35 WVDC

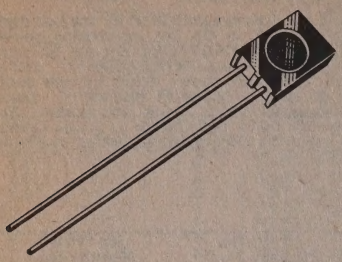
Case Code	Case Size, Inches Dia. x L.	WVDC	Capacity Range, µF	For ±10% Tol. (K), Net Each 1-24	25-49	50-99	100-499	500-999	For ±20% Tol. (M), Net Each 1-24	25-49	50-99	100-499	500-999
A	.125 x .250	6, 10, 15, 20, 35	.0047–6.8	Prices on Request					Prices on Request				
C	.175 x .438	6, 10, 15, 20, 35	1.2–56	Prices on Request					Prices on Request				
F	.279 x .650	6, 10, 15, 20	18–180	Prices on Request					Prices on Request				
		35	8.2–22	Prices on Request					Prices on Request				
G	.341 x .750	6, 10, 15, 20	56–330	Prices on Request					Prices on Request				
		35	27–33	Prices on Request					Prices on Request				
		35	39–47	Prices on Request					Prices on Request				
		35	68	Prices on Request					Prices on Request				

FOR 50 WVDC

A	.125 x .250	50	0.33–1.0	Prices on Request					Prices on Request				
C	.175 x .438	50	1.2–4.7	Prices on Request					Prices on Request				
F	.279 x .650	50	5.6–18	Prices on Request					Prices on Request				
G	.341 x .750	50	22	Prices on Request					Prices on Request				

MALLORY Tantalum Capacitors

TIM MOLDED RECTANGULAR SOLID ELECTROLYTE TANTALUMS



Solid electrolyte tantalums molded in rectangular epoxy case. Precision-spaced radial leads for easy PC board mounting. Electrically and environmentally meet computer and industrial needs. **Size:** Indicated by final suffix letter (e.g., TIM186K006POX): **V,** .325″ w. x .170″ th. x .415″ h.; **W,** .228″ w. x .105″ th. x .340″ h.; **X,** .285″ w. x .170″ th. x .225″ h.; **Y,** .380″ w. x .170″ th. x .335″ h.

STOCK VALUES

Mallory Number	Cap., μF	WVDC at +85° C	Price Code
TIM336*003POV	33	3	B
TIM396*003POV	39	3	C
TIM476*003POV	47	3	C
TIM566*003POV	56	3	C
TIM686*003POV	68	3	C
TIM105*006POX	1.0	6	A
TIM125*006POX	1.2	6	A
TIM155*006POX	1.5	6	A
TIM185*006POX	1.8	6	A
TIM225*006POX	2.2	6	A
TIM275*006POX	2.7	6	A
TIM335*006POX	3.3	6	A
TIM395*006POX	3.9	6	A
TIM475*006POX	4.7	6	A
TIM565*006POX	5.6	6	A
TIM685*006POX	6.8	6	A
TIM825*006POX	8.2	6	B
TIM106*006POW	10	6	B
TIM106*006POX	10	6	B
TIM126*006POX	12	6	B
TIM156*006POX	15	6	B
TIM186*006POW	18	6	B
TIM186*006POX	18	6	B
TIM226*006POV	22	6	B
TIM226*006POW	22	6	B
TIM226*006POX	22	6	B
TIM276*006POV	27	6	B
TIM276*006POX	27	6	B
TIM276*006POY	27	6	B
TIM336*006POV	33	6	B
TIM336*006POX	33	6	B
TIM336*006POY	33	6	B
TIM396*006POV	39	6	C
TIM396*006POY	39	6	C
TIM476*006POV	47	6	C
TIM476*006POY	47	6	C
TIM566*006POV	56	6	C
TIM566*006POY	56	6	C
TIM686*006POY	68	6	C
TIM826*006POY	82	6	D
TIM105*010POX	1.0	10	A
TIM125*010POX	1.2	10	A
TIM155*010POX	1.5	10	A
TIM185*010POX	1.8	10	A
TIM225*010POX	2.2	10	A
TIM275*010POX	2.7	10	A
TIM335*010POX	3.3	10	A
TIM395*010POX	3.9	10	A
TIM475M010POW	4.7	10	B
TIM475*010POX	4.7	10	A
TIM565*010POX	5.6	10	B
TIM685M010POX	6.8	10	B
TIM685*010POX	6.8	10	B
TIM825*010POX	8.2	10	B
TIM106*010POW	10	10	B
TIM106*010POX	10	10	B
TIM126*010POW	12	10	B
TIM126*010POX	12	10	B
TIM156*010POV	15	10	B
TIM156*010POW	15	10	B
TIM156*010POX	15	10	B
TIM186*010POX	18	10	B
TIM186*010POY	18	10	B
TIM226*010POV	22	10	B
TIM226*010POX	22	10	B
TIM226*010POY	22	10	B
TIM276*010POV	27	10	C
TIM276*010POY	27	10	C
TIM336*010POV	33	10	C
TIM336*010POY	33	10	C
TIM396*010POV	39	10	C
TIM396*010POY	39	10	C
TIM476*010POY	47	10	D

*Specify tol. (e.g., TIM336M003POV): **M,** ±20%; **K,** ±10%.

STOCK VALUES

Mallory Number	Cap., μF	WVDC at +85° C	Price Code
TIM566*010POY	56	10	D
TIM105*015POX	1.0	15	A
TIM125*015POX	1.2	15	A
TIM155*015POX	1.5	15	A
TIM185*015POX	1.8	15	A
TIM225*015POX	2.2	15	A
TIM275*015POX	2.7	15	A
TIM335M015POW	3.3	15	B
TIM335*015POX	3.3	15	A
TIM395*015POX	3.9	15	B
TIM475*015POX	4.7	15	B
TIM565*015POX	5.6	15	B
TIM685*015POX	6.8	15	B
TIM825*015POW	8.2	15	B
TIM825*015POX	8.2	15	B
TIM106*015POV	10	15	C
TIM106*015POX	10	15	C
TIM106*015POY	10	15	C
TIM126*015POV	12	15	C
TIM126*015POX	12	15	C
TIM126*015POY	12	15	C
TIM156*015POV	15	15	C
TIM156*015POX	15	15	C
TIM156*015POY	15	15	C
TIM186*015POV	18	15	C
TIM186*015POY	18	15	C
TIM226*015POV	22	15	C
TIM226*015POY	22	15	C
TIM276*015POY	27	15	D
TIM336*015POY	33	15	D
TIM396*015POY	39	15	D
TIM155M020POW	1.5	20	B
TIM225M020POW	2.2	20	B
TIM565*020POW	5.6	20	B
TIM565*020POX	5.6	20	B
TIM685*020POW	6.8	20	B
TIM685*020POX	6.8	20	B
TIM825*020POV	8.2	20	C
TIM106*020POV	10	20	C
TIM106*020POY	10	20	C
TIM126*020POV	12	20	C
TIM126*020POY	12	20	C
TIM156*020POV	15	20	C
TIM156*020POY	15	20	C
TIM186*020POV	18	20	C
TIM186*020POY	18	20	C
TIM105*025POX	1.0	25	A
TIM125*025POX	1.2	25	A
TIM155*025POX	1.5	25	A
TIM185*025POX	1.8	25	A
TIM225*025POX	2.2	25	A
TIM275*025POX	2.7	25	B
TIM335*025POW	3.3	25	B
TIM335*025POX	3.3	25	B
TIM395*025POW	3.9	25	B
TIM395*025POX	3.9	25	B
TIM475*025POW	4.7	25	B
TIM475*025POX	4.7	25	B
TIM565*025POV	5.6	25	C
TIM565*025POX	5.6	25	C
TIM565*025POY	5.6	25	C
TIM685*025POV	6.8	25	C
TIM685*025POY	6.8	25	C
TIM825*025POV	8.2	25	C
TIM825*025POY	8.2	25	C
TIM106*025POV	10	25	C
TIM106*025POY	10	25	C
TIM126*025POV	12	25	C
TIM126*025POY	12	25	C
TIM156*025POV	15	25	C

STOCK VALUES

Mallory Number	Cap., μF	WVDC at +85° C	Price Code
TIM156*025POY	15	25	C
TIM823*035POX	.082	35	A
TIM104*035POX	.10	35	A
TIM124*035POX	.12	35	A
TIM154*035POX	.15	35	A
TIM184*035POX	.18	35	A
TIM224*035POX	.22	35	A
TIM274*035POX	.27	35	A
TIM334*035POX	.33	35	A
TIM394*035POX	.39	35	A
TIM474*035POX	.47	35	A
TIM564*035POX	.56	35	A
TIM684*035POX	.68	35	A
TIM824*035POX	.82	35	A
TIM105*035POX	1.0	35	A
TIM125K035POW	1.2	35	A
TIM125*035POX	1.2	35	A
TIM155*035POX	1.5	35	B
TIM185*035POW	1.8	35	A
TIM185*035POX	1.8	35	B
TIM225*035POW	2.2	35	A
TIM225*035POX	2.2	35	B
TIM275*035POW	2.7	35	A
TIM275*035POX	2.7	35	B
TIM335*035POX	3.3	35	B
TIM395*035POY	3.9	35	C
TIM475*035POV	4.7	35	C
TIM475*035POY	4.7	35	C
TIM565*035POY	5.6	35	C
TIM685*035POY	6.8	35	C
TIM825*035POY	8.2	35	D
TIM106K035POY	10	35	D
TIM823*050POX	.082	50	A
TIM104*050POX	.10	50	A
TIM124*050POW	.12	50	B
TIM124*050POX	.12	50	A
TIM154*050POX	.15	50	A
TIM184*050POW	.18	50	B
TIM184*050POX	.18	50	A
TIM224*050POW	.22	50	B
TIM224*050POX	.22	50	A
TIM274*050POW	.27	50	B
TIM274*050POX	.27	50	A
TIM334*050POW	.33	50	B
TIM334*050POX	.33	50	A
TIM394*050POW	.39	50	B
TIM394*050POX	.39	50	A
TIM474*050POW	.47	50	B
TIM474*050POX	.47	50	A
TIM564*050POW	.56	50	A
TIM564*050POX	.56	50	A
TIM684*050POW	.68	50	A
TIM684*050POX	.68	50	A
TIM824*050POW	.82	50	A
TIM824*050POX	.82	50	A
TIM105*050POW	1.0	50	A
TIM105*050POX	1.0	50	A
TIM125*050POW	1.2	50	B
TIM125*050POX	1.2	50	B
TIM155*050POW	1.5	50	B
TIM155*050POX	1.5	50	B
TIM185*050POX	1.8	50	B
TIM225*050POX	2.2	50	B
TIM275*050POY	2.7	50	C
TIM335*050POY	3.3	50	C
TIM395*050POY	3.9	50	C
TIM475*050POY	4.7	50	C
TIM565*050POY	5.6	50	D

*Specify tol. (e.g., TIM566M010POY): **M,** ±20%; **K,** ±10%.

INDUSTRIAL NET PRICES
FOR CASE SIZES V, X, AND Y

Price Code	Tol.	Case †	6 to 35 Volts Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	50 Volts Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
A	±10%	X	$1.63	$1.30	$0.89	$0.73	$0.72	$2.00	$1.61	$1.12	$0.90	$0.73
B	±10%	X	1.65	1.32	.91	.75	.64	2.19	1.74	1.20	.97	.79
C	±10%	V & Y	1.65	1.32	.91	.75	.64	2.19	1.74	1.20	.97	.79
D	±10%	Y	3.13	2.51	1.73	1.41	1.18	5.16	4.12	3.09	2.50	2.00
A	±20%	X	1.59	1.27	.86	.69	.54	1.87	1.49	1.03	.83	.67
B	±20%	X	1.61	1.29	.88	.72	.59	1.99	1.60	1.11	.89	.72
C	±20%	V & Y	1.61	1.29	.88	.72	.59	1.99	1.60	1.11	.89	.72
D	±20%	Y	3.07	2.47	1.68	1.36	1.14	3.91	3.12	2.34	1.89	1.51

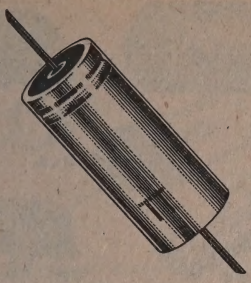
FOR CASE SIZE W

Price Code	Tol.	Case †	3 to 50 Volts Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
A	±10%	W	$1.56	$1.38	$0.81	$0.74	$0.68
B	±10%	W	1.25	1.02	.74	.63	.50
A	±20%	W	1.31	1.05	.63	.51	.43
B	±20%	W	1.25	1.00	.60	.50	.42

†Indicated by last digit of Mallory Number (e.g., TIM336M003POV). Leads spaced .125″ for case W; .200″, all others.

MALLORY Electrolytic Capacitors

TT TINY TUBULAR ALUMINUM ELECTROLYTIC CAPACITORS

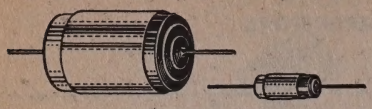


Mallory TT capacitors are made from very high purity aluminum foil, deep-etched to provide maximum capacity per unit of volume. Etched cathode construction assures long, hum-free operation. Utilize all-welded construction; exhibit exceptionally low DCL and ESR. Supplied in aluminum case with insulating sleeve; wire leads 2" lg. (±¼"). **Temperature Range:** −55° C to +85° C, 3 to 150-volt units; −30° C to +85° C, all others. **Tolerance:** −10%, +75%, 1-100 WVDC; −10%, +50%, 100 WVDC and up.

Mallory No.	Cap., µF	WV DC	Size, In.* Dia. x L.	Net Each
TT3X1	1	3	¼ x ⅝	$0.58
TT3X5	5	3	¼ x ⅝	.58
TT3X8	8	3	¼ x ⅝	.58
TT3X20	20	3	¼ x ⅝	.58
TT3X25	25	3	¼ x ⅝	.58
TT3X40	40	3	¼ x ⅝	.58
TT3X50	50	3	¼ x ⅝	.58
TT3X75A	75	3	¼ x ⅝	.66
TT3X100A	100	3	5/16 x ⅝	.66
TT3X110A	110	3	5/16 x ⅝	.81
TT3X150A	150	3	5/16 x ⅝	.81
TT3X200A	200	3	5/16 x 1 1/16	.81
TT3X250A	250	3	5/16 x ¾	.85
TT3X300A	300	3	⅜ x ¾	.85
TT3X400A	400	3	⅜ x ⅞	.88
TT3X500A	500	3	⅜ x ⅞	.93
TT3X590	590	3	⅜ x 1	.93
TT3X1000	1K	3	⅜ x 1⅜	.97
TT3X1500	1.5K	3	7/16 x 1⅜	.97
TT3X2500	2.5K	3	7/16 x 2	1.00
TT3X3600	3.6K	3	7/16 x 2½	1.03
TT6X1	1	6	¼ x ⅝	.58
TT6X2	2	6	¼ x ⅝	.58
TT6X3	3	6	¼ x ⅝	.58
TT6X4	4	6	¼ x ⅝	.58
TT6X5	5	6	¼ x ⅝	.58
TT6X6	6	6	¼ x ⅝	.58
TT6X8	8	6	¼ x ⅝	.58
TT6X10	10	6	¼ x ⅝	.58
TT6X15	15	6	¼ x ⅝	.58
TT6X20	20	6	¼ x ⅝	.58
TT6X25	25	6	¼ x ⅝	.58
TT6X30	30	6	¼ x ⅝	.58
TT6X35	35	6	¼ x ⅝	.58
TT6X40	40	6	¼ x ⅝	.58
TT6X50A	50	6	¼ x ⅝	.58
TT6X60B	60	6	¼ x ⅝	.66
TT6X75A	75	6	¼ x ⅝	.66
TT6X80A	80	6	¼ x 1 1/16	.66
TT6X100A	100	6	5/16 x ⅝	.81
TT6X150A	150	6	5/16 x ⅝	.85
TT6X200A	200	6	5/16 x ¾	.85
TT6X250A	250	6	⅜ x ¾	.88
TT6X300B	300	6	⅜ x ¾	.88
TT6X400	400	6	⅜ x ⅞	.88
TT6X560	560	6	⅜ x 1⅛	.96
TT6X1000	1K	6	⅜ x 1½	1.00
TT6X1500	1.5K	6	7/16 x 1½	1.03
TT6X2000	2K	6	7/16 x 2	1.05
TT6X3000	3K	6	½ x 2	1.18
TT10X2	2	10	¼ x ⅝	.58
TT10X6	6	10	¼ x ⅝	.58
TT10X10	10	10	¼ x ⅝	.58
TT10X15	15	10	¼ x ⅝	.58
TT10X25	25	10	¼ x ⅝	.58
TT10X30A	30	10	¼ x ⅝	.66
TT10X40A	40	10	¼ x ⅝	.66
TT10X50A	50	10	¼ x ⅝	.66
TT10X60A	60	10	¼ x ⅝	.81
TT10X100A	100	10	5/16 x ⅝	.85
TT10X200A	200	10	⅜ x ¾	.93
TT10X300	300	10	⅜ x ⅞	.96
TT10X400	400	10	⅜ x 1	.96
TT10X500	500	10	⅜ x 1⅛	.96
TT10X600	600	10	⅜ x 1⅜	.96
TT10X800	800	10	7/16 x 1⅛	.97
TT10X1000	1K	10	7/16 x 1⅜	1.00
TT10X1500	1.5K	10	7/16 x 1¾	1.03
TT10X2000	2K	10	7/16 x 2¼	$1.05
TT10X2400	2.4K	10	½ x 2	1.21
TT12X1	1	12	¼ x ⅝	.58
TT12X2	2	12	¼ x ⅝	.58
TT12X3	3	12	¼ x ⅝	.58
TT12X4	4	12	¼ x ⅝	.58
TT12X5	5	12	¼ x ⅝	.58
TT12X6	6	12	¼ x ⅝	.58
TT12X8	8	12	¼ x ⅝	.58
TT12X10	10	12	¼ x ⅝	.58
TT12X15	15	12	¼ x ⅝	.58
TT12X20	20	12	¼ x ⅝	.58
TT12X25A	25	12	¼ x ⅝	.58
TT12X35A	35	12	¼ x ⅝	.58
TT12X50A	50	12	¼ x ⅝	.66
TT12X75A	75	12	¼ x ¾	.81
TT12X100A	100	12	5/16 x ⅝	.85
TT12X150A	150	12	5/16 x ¾	.88
TT12X200A	200	12	⅜ x ¾	.93
TT12X250A	250	12	⅜ x ⅞	.93
TT12X450	450	12	7/16 x ⅞	.97
TT12X500	500	12	7/16 x 1	.97
TT12X600	600	12	7/16 x 1⅛	.97
TT12X800	800	12	7/16 x 1⅜	1.00
TT12X1000	1K	12	7/16 x 1½	1.03
TT12X1500	1.5K	12	7/16 x 2	1.05
TT12X2000	2K	12	½ x 2	1.21
TT15X1	1	15	¼ x ⅝	.58
TT15X2	2	15	¼ x ⅝	.58
TT15X3	3	15	¼ x ⅝	.58
TT15X4	4	15	¼ x ⅝	.58
TT15X5	5	15	¼ x ⅝	.58
TT15X6	6	15	¼ x ⅝	.58
TT15X8	8	15	¼ x ⅝	.58
TT15X10	10	15	¼ x ⅝	.58
TT15X15	15	15	¼ x ⅝	.58
TT15X20A	20	15	¼ x ⅝	.58
TT15X25A	25	15	¼ x ⅝	.58
TT15X30A	30	15	¼ x ⅝	.66
TT15X35B	35	15	¼ x ⅝	.66
TT15X40B	40	15	¼ x ⅝	.66
TT15X50A	50	15	¼ x ⅝	.66
TT15X75A	75	15	¼ x ¾	.81
TT15X100A	100	15	5/16 x ⅝	.85
TT15X150A	150	15	5/16 x ¾	.88
TT15X200A	200	15	⅜ x ¾	.93
TT15X260A	260	15	⅜ x ⅞	.93
TT15X350	350	15	⅜ x 1 1/8	.96
TT15X400	400	15	⅜ x 1⅛	.97
TT15X500	500	15	⅜ x 1⅜	.97
TT15X600	600	15	⅜ x 1½	.97
TT15X800	800	15	7/16 x 1⅜	1.00
TT15X1000	1K	15	7/16 x 1¾	1.03
TT15X1500	1.5K	15	½ x 1¾	1.05
TT25X1	1	25	¼ x ⅝	.58
TT25X2	2	25	¼ x ⅝	.58
TT25X3	3	25	¼ x ⅝	.58
TT25X4	4	25	¼ x ⅝	.58
TT25X5	5	25	¼ x ⅝	.58
TT25X6	6	25	¼ x ⅝	.58
TT25X8	8	25	¼ x ⅝	.58
TT25X10	10	25	¼ x ⅝	.58
TT25X15A	15	25	¼ x ⅝	.58
TT25X20A	20	25	¼ x ⅝	.66
TT25X25A	25	25	¼ x 1 1/16	.66
TT25X30A	30	25	¼ x ¾	.66
TT25X35A	35	25	¼ x ¾	.66
TT25X50A	50	25	5/16 x 1 1/16	$0.81
TT25X75A	75	25	⅜ x ¾	.85
TT25X100A	100	25	⅜ x ⅞	.88
TT25X150	150	25	⅜ x 1	.93
TT25X200	200	25	⅜ x 1⅛	.96
TT25X300	300	25	⅜ x 1½	.97
TT25X400	400	25	7/16 x 1⅜	1.00
TT25X500	500	25	7/16 x 1½	1.03
TT25X600	600	25	7/16 x 1¾	1.05
TT25X800	800	25	½ x 1¾	1.05
TT50X1	1	50	¼ x ⅝	.58
TT50X2	2	50	¼ x ⅝	.58
TT50X3	3	50	¼ x ⅝	.58
TT50X4	4	50	¼ x ⅝	.58
TT50X5A	5	50	¼ x ⅝	.58
TT50X6A	6	50	¼ x ⅝	.58
TT50X8A	8	50	¼ x ⅝	.58
TT50X10B	10	50	¼ x ⅝	.66
TT50X15A	15	50	¼ x ¾	.66
TT50X20B	20	50	5/16 x ⅝	.81
TT50X25A	25	50	5/16 x 1 1/16	.81
TT50X35A	35	50	⅜ x ¾	.85
TT50X50A	50	50	⅜ x ⅞	.88
TT50X75	75	50	⅜ x 1	.93
TT50X100	100	50	⅜ x 1⅛	.96
TT50X150	150	50	7/16 x 1⅛	.97
TT50X200	200	50	7/16 x 1⅜	1.03
TT50X250	250	50	7/16 x 1¾	1.05
TT50X300	300	50	7/16 x 2	1.18
TT50X350	350	50	7/16 x 2¼	1.18
TT50X400	400	50	7/16 x 2½	1.18
TT50X450	450	50	½ x 2	1.35
TT100X1	1	100	¼ x ⅝	.66
TT100X2	2	100	¼ x ⅝	.66
TT100X3	3	100	¼ x ⅝	.66
TT100X4	4	100	¼ x ¾	.81
TT100X5	5	100	5/16 x ⅝	.81
TT100X6	6	100	5/16 x ¾	.81
TT100X10	10	100	⅜ x ¾	.85
TT100X15	15	100	⅜ x ⅞	.88
TT100X20	20	100	⅜ x 1	.93
TT100X25	25	100	⅜ x 1⅛	.96
TT100X30	30	100	⅜ x 1⅜	.96
TT100X40	40	100	7/16 x 1⅜	1.00
TT100X45	45	100	7/16 x 1½	1.03
TT100X50	50	100	7/16 x 1¾	1.05
TT100X65	65	100	7/16 x 2	1.18
TT150X1	1	150	¼ x ⅝	.58
TT150X2	2	150	¼ x ¾	.66
TT150X3	3	150	5/16 x ⅝	.66
TT150X4	4	150	⅜ x ⅝	.81
TT150X5	5	150	⅜ x ¾	.81
TT150X6	6	150	⅜ x ¾	.85
TT150X8	8	150	⅜ x ⅞	.85
TT150X10	10	150	⅜ x ⅞	.88
TT150X12	12	150	⅜ x 1	.93
TT150X15	15	150	⅜ x 1⅛	.93
TT150X20	20	150	⅜ x 1⅜	.96
TT150X25	25	150	7/16 x 1⅜	1.00
TT150X30	30	150	7/16 x 1½	1.00
TT150X35	35	150	7/16 x 1¾	1.03
TT150X40	40	150	7/16 x 2	1.05

*Size shown for plain case. For insulating sleeve add .010" dia. x 1/16" l.

POLYSTYRENE CAPACITORS



Manufactured from a unique form of stretched and fused polystyrene to provide the ultimate in temperature stability and humidity protection. Can replace mica, film, paper, ceramic types in most uses. **Insulation Resistance:** Greater than 100,000 megohms. **Power Factor:** Less than 0.05%. **Temperature Coefficient:** −150 ppm/° C, ±60 ppm/° C. **Temperature Range:** −40° C to +85° C; for best operating stability, −10° C to +70° C. Sizes shown are ±.010″ dia. x ±.032″ lg. **Ask for Bulletin 9-370 for complete specifications.**

63 WVDC

Tolerance, ±2.5%.

Mallory No.	Cap., pF	Size, In. Dia. x L.	Net Each
SXL111	11,000	.320 x .790	$0.30
SXL112	12,000	.320 x .790	.30
SXL113	13,000	.320 x .790	.30
SXL115	15,000	.320 x .790	.30
SXL116	16,000	.320 x .790	.36
SXL118	18,000	.320 x .790	.36
SXL120	20,000	.320 x .790	.36
SXL122	22,000	.370 x .790	.36
SXL124	24,000	.370 x .790	.36
SXL133	33,000	.440 x .790	.53
SXL136	36,000	.440 x .790	.53
SXL139	39,000	.440 x .790	.53
SXL147	47,000	.380 x 1.180	.56
SXL156	56,000	.410 x 1.180	.62
SXL162	62,000	.430 x 1.180	.62
SXL168	68,000	.430 x 1.180	.62
SXL175	75,000	.470 x 1.180	.79
SXL182	82,000	.480 x 1.180	1.72
SXL022	220,000	.531 x 1.574	2.57
SXL033	330,000	.630 x 1.574	2.98
SXL047	470,000	.787 x 1.574	

160 WVDC

Tolerance, ±2.5%.

SXM330	300	.143 x .473	$0.20
SXM333	330	.147 x .473	.20
SXM336	360	.150 x .473	.20
SXM339	390	.169 x .473	.20
SXM343	430	.172 x .473	.20
SXM347	470	.173 x .473	.20
SXM350	500	.173 x .473	.20
SXM351	510	.173 x .473	.20
SXM356	560	.173 x .473	.19
SXM362	620	.173 x .473	.19
SXM368	680	.173 x .473	.19
SXM375	750	.176 x .473	.19
SXM382	820	.181 x .473	.19
SXM391	910	.186 x .473	.19
SXM210	1,000	.228 x .473	.19
SXM211	1,100	.241 x .473	.19
SXM212	1,200	.251 x .473	.19
SXM213	1,300	.253 x .473	.19
SXM215	1,500	.257 x .473	.19
SXM216	1,600	.262 x .473	.19
SXM218	1,800	.271 x .473	.19
SXM220	2,000	.275 x .473	.19
SXM222	2,200	.280 x .473	.19
SXM224	2,400	.230 x .710	.19
SXM227	2,700	.241 x .710	.19
SXM230	3,000	.252 x .710	.19
SXM233	3,300	.260 x .710	.19
SXM236	3,600	.266 x .710	.19
SXM239	3,900	.271 x .710	.18
SXM243	4,300	.273 x .710	.18
SXM247	4,700	.275 x .710	.18
SXM250	5,000	.293 x .710	.18
SXM251	5,100	.297 x .710	.18
SXM256	5,600	.308 x .710	.18
SXM262	6,200	.320 x .710	.18
SXM268	6,800	.331 x .710	.18
SXM275	7,500	.338 x .710	.18
SXM282	8,200	.309 x .886	.18
SXM291	9,100	.318 x .886	.18
SXM110	10,000	.329 x .886	.25
SXM111	11,000	.309 x .787	.29
SXM112	12,000	.319 x .787	.29
SXM113	13,000	.323 x .787	.29
SXM115	15,000	.347 x .787	.29
SXM116	16,000	.352 x .787	.33
SXM118	18,000	.394 x .787	.33
SXM120	20,000	.404 x .787	.33
SXM122	22,000	.419 x .787	.33
SXM124	24,000	.429 x .787	.41
SXM127	27,000	.463 x .787	.41
SXM130	30,000	.500 x .787	.41
SXM133	33,000	.488 x .787	$0.51
SXM136	36,000	.404 x 1.182	.51
SXM139	39,000	.423 x 1.182	.51
SXM147	47,000	.463 x 1.182	.54
SXM150	50,000	.478 x 1.182	.54
SXM151	51,000	.480 x 1.182	.65
SXM156	56,000	.490 x 1.182	.65
SXM162	62,000	.518 x 1.182	.65
SXM168	68,000	.543 x 1.182	.65
SXM175	75,000	.577 x 1.182	.35
SXM182	82,000	.581 x 1.182	.99
SXM191	91,000	.604 x 1.182	1.10
SXM015	150,000	.728 x 1.574	1.65
SXM022	220,000	.866 x 1.574	2.04
SXM033	330,000	1.024 x 1.574	2.83

600 WVDC

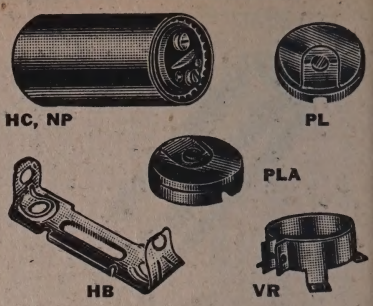
Tolerance, ±1 pF for values 5–18 pF; ±5%, all others.

SX550	5	.165 x .395	$0.18
SX568	6.8	.166 x .395	.18
SX410	10	.167 x .395	.18
SX412	12	.167 x .395	.18
SX415	15	.168 x .395	.18
SX418	18	.169 x .395	.18
SX420	20	.170 x .395	.18
SX422	22	.170 x .395	.18
SX424	24	.171 x .395	.18
SX427	27	.172 x .395	.18
SX430	30	.173 x .395	.18
SX433	33	.173 x .395	.18
SX436	36	.174 x .395	.18
SX439	39	.175 x .395	.18
SX443	43	.177 x .395	.18
SX447	47	.178 x .395	.18
SX456	56	.180 x .395	.18
SX462	62	.182 x .395	.18
SX468	68	.184 x .395	.18
SX475	75	.188 x .395	.18
SX482	82	.189 x .395	.18
SX491	91	.192 x .395	.18
SX310	100	.195 x .395	.18
SX311	110	.198 x .395	.18
SX312	120	.201 x .395	.18
SX313	130	.204 x .395	.18
SX315	150	.210 x .395	.18
SX316	160	.213 x .395	.18
SX318	180	.221 x .395	.18
SX320	200	.227 x .395	.18
SX322	220	.233 x .395	.18
SX324	240	.239 x .395	.18
SX327	270	.248 x .395	.18
SX330	300	.255 x .395	.18
SX333	330	.194 x .590	.18
SX336	360	.195 x .590	.18
SX339	390	.197 x .590	.18
SX343	430	.200 x .590	.18
SX347	470	.202 x .590	.18
SX351	510	.204 x .590	.18
SX356	560	.207 x .590	.18
SX362	620	.211 x .590	.18
SX368	680	.215 x .590	.18
SX375	750	.219 x .590	.18
SX382	820	.223 x .590	.18
SX391	910	.228 x .590	.18
SX210	1,000	.233 x .590	.18
SX211	1,100	.238 x .590	.21
SX212	1,200	.245 x .590	.21
SX213	1,300	.250 x .590	.21
SX215	1,500	.262 x .590	.21
SX216	1,600	.267 x .590	.21
SX218	1,800	.279 x .590	.21
SX220	2,000	.291 x .590	.21
SX222	2,200	.300 x .590	.21
SX224	2,400	.314 x .590	.21
SX225	2,500	.320 x .590	.21
SX227	2,700	.331 x .590	.21
SX230	3,000	.348 x .590	.21
SX233	3,300	.366 x .590	.25
SX236	3,600	.383 x .590	.25
SX239	3,900	.402 x .590	.25
SX243	4,300	.425 x .590	.25
SX247	4,700	.448 x .590	.25
SX250	5,000	.466 x .590	.25
SX251	5,100	.470 x .590	.31
SX256	5,600	.465 x .790	.31
SX262	6,200	.480 x .790	.31
SX268	6,800	.500 x .790	.31
SX275	7,500	.520 x .790	.31
SX282	8,200	.540 x .790	.31
SX291	9,100	.565 x .790	.31
SX110	10,000	.590 x .790	.31

HC AND NP HARDWARE

Mal. No.	Description	Net
PL3	1 7/16″ end cap—In	$0.24
PLA3	1 7/16″ end cap—Out	.24
PL6	1 13/16″ end cap—In	.28
PLA6	1 13/16″ end cap—Out	.28
PL8	2 1/16″ end cap—In	.33
PLA8	2 1/16″ end cap—Out	.33
HB2	3 1/64″ horiz. bracket	.33
HB4	3 21/32″ horiz. bracket	.33
HB8	4 21/32″ horiz. bracket	.37

HIGH CAPACITY DRY ELECTROLYTICS



HC and NP capacitors are furnished in heavy-duty molded phenolic cases with integral safety vent. HC types are polarized; NP types are non-polarized. **Temp. Range:** −20° C to +85° C. **Tolerance:** Type HC—0–50 WVDC, −10%, +150%; 51–350 WVDC, −10%, +100%; 351 WVDC up, −10%, +50%. Type NP—±25%, all units.

POLARIZED TYPE HC

Mallory No.	Cap., μF	WV DC	* Size	Net Each
HC1020A	2,000	10	1	$ 3.73
HC1040A	4,000	10	2	5.11
HC1060A	6,000§	10‡	8	5.77
HC10100	10,000	10†	7	8.68
HC10120	12,000	10	7	7.92
HC1520A	2,000	15	1	3.84
HC1540A	4,000	15	3	5.96
HC1560A	6,000	15	4	6.24
HC15100	10,000	15	7	7.92
HC2050-50	2x5,000§	20	7	8.88
HC2060	6,000	20	7	7.33
HC2060A	6,000	20†	5	6.78
HC2510A	1,000	25	1	3.53
HC2520A	2,000	25	2	4.61
HC2530	3,000	25	4	5.42
HC2540A	4,000	25	4	6.20
HC2550	5,000	25	7	7.00
HC4040	4,000	40	7	8.39
HC4040A	4,000	40	5	7.78
HC5005	500	50	2	3.98
HC5005A	500	50	1	3.68
HC5010A	1,000	50	2	4.73
HC5020A	2,000	50	4	5.62
HC5030	3,000	50	7	7.78
HC5040	4,000	50	7	8.13
HC8010	1,000	80	4	5.93
HC8020	2,000	80	7	7.34
HC10005	500	100	2	4.66
HC10015	1,500	100	7	7.15
HC15005	500	150	4	5.65
HC15010	1,000	150	7	7.72
HC15010A	1,000	150	5	7.15
HC20002	200	200	4	4.54
HC20005	500	200	7	6.62
HC20005A	500	200	4	6.13
HC25002	200	250	4	5.42
HC45001	100	450	4	6.62
HC45002	200	450	7	8.30
HC45003	300	450	7	9.41

NON-POLARIZED TYPE NP

NP1225A	200	125	2	$4.50
NP1235A	300	125	4	5.40
NP1255A	500	125	5	7.00
NP2514	100	250	5	6.60
NP2520	150	250	5	6.68
NP3003A	15	300	1	3.17
NP3006	30	300	2	4.27
NP3008	50	300	2	5.83
NP3014A	100	300	4	6.80
NP3020	150	300	7	7.30
NP3025	200	300	7	7.78
NP4505	50	450	4	7.00
NP4510	100	450	7	8.54

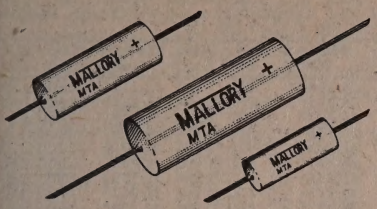
†Semi-polarized. ‡Aluminum can, post terminals. §Temp. Range to +65° C max.

*HC AND NP CASE SIZES

Code	Size, In. Dia. x Lg.	Use Hardware No. for Cap	Brkt.	Clamp
1	1 7/16 x 2 3/4	PL3, PLA3	HB2	VR3
2	1 7/16 x 3 3/4	PL3, PLA3	HB4	VR3
3	1 7/16 x 4 3/8	PL3, PLA3	HB8	VR3
4	1 13/16 x 3 3/8	PL6, PLA6	HB4	VR6
5	1 13/16 x 4 3/8	PL6, PLA6	HB8	VR6
6	2 1/16 x 3 3/8	PL8, PLA8	HB4	VR8
7	2 1/16 x 4 3/8	PL8, PLA8	HB8	VR8
8	1 1/2 x 4 1/8	.....	.....	VR14

MALLORY Tubular Electrolytics

MTA MOLDED TUBULAR ALUMINUM ELECTROLYTIC CAPACITORS



High quality electrolytics, precision molded by an exclusive new technique. Precision molding assures case uniformity and quality unattainable by conventional tube-and-fill methods. Polypropylene case material provides extreme humidity protection; actually excludes water molecules while allowing for molecular venting of the electrolyte if necessary. All-welded construction. **Temperature Range:** −20° C to +65° C. **Tolerance:** −10%, +100%. **Write for complete specifications.**

†MTA CASE SIZES

Case Code	Size, Inches Dia. x L.	Leads
D	5/16 x 3/4	2
E	3/8 x 1	2
F	1/2 x 1 3/8	2
G	3/4 x 1 3/4	2

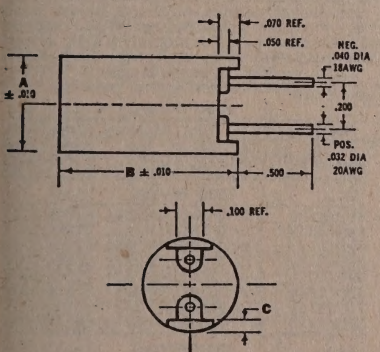
Mallory No.	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
MTA1000F1	1000	1	2	F	$0.68
MTA60D3	60	3	4	D	.43
MTA175E3	175	3	4	E	.54
MTA600F3	600	3	4	F	.54
MTA750F3	750	3	4	F	.68
MTA50D6	50	6	8	D	.43

MTA STOCK VALUES

Mallory No.	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
MTA125E6	125	6	8	E	$0.47
MTA150E6	150	6	8	E	.47
MTA450F6	450	6	8	F	.60
MTA500F6	500	6	8	F	.60
MTA3000G6	3000	6	8	G	.97
MTA40D10	40	10	12	D	.43
MTA75E10	75	10	12	E	.47
MTA100E10	100	10	12	E	.47
MTA200E10	200	10	12	E	.54
MTA400F10	400	10	12	F	.64
MTA30D15	30	15	18	D	.43
MTA35D15	35	15	18	D	.43
MTA50E15	50	15	18	E	.47
MTA80E15	80	15	18	E	.47
MTA90E15	90	15	18	E	.47
MTA100E15	100	15	18	E	.47
MTA250F15	250	15	18	F	.60
MTA300F15	300	15	18	F	.68
MTA350F15	350	15	18	F	.68
MTA2000-G15	2000	15	18	G	.97
MTA25D20	25	20	25	D	.43
MTA60E20	60	20	25	E	.47
MTA70E20	70	20	25	E	.47
MTA250F20	250	20	25	F	.68
MTA50E25	50	25	30	E	.47
MTA175F25	175	25	30	F	.64
MTA200F25	200	25	30	F	.68
MTA500G25	500	25	30	G	.97
MTA1000-G25	1000	25	30	G	.97
MTA20D30	20	30	35	D	.43
MTA40E30	40	30	35	E	.47
MTA9D35	9	35	40	D	.43
MTA10D35	10	35	40	D	.43
MTA15D35	15	35	40	D	.43
MTA25D35	25	35	40	D	.47
MTA30E35	30	35	40	E	.47
MTA35E35	35	35	40	E	.47
MTA90F35	90	35	40	F	.60
MTA100F35	100	35	40	F	.60
MTA125F35	125	35	40	F	.64
MTA150F35	150	35	40	F	.68
MTA1D50	1	50	60	D	.43

Mallory No.	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
MTA2D50	2	50	60	D	$0.43
MTA3D50	3	50	60	D	.43
MTA4D50	4	50	60	D	.43
MTA5D50	5	50	60	D	.43
MTA6D50	6	50	60	D	.43
MTA7D50	7	50	60	D	.43
MTA8D50	8	50	60	D	.43
MTA9D50	9	50	60	D	.47
MTA10D50	10	50	60	D	.47
MTA15D50	15	50	60	D	.47
MTA20E50	20	50	60	E	.47
MTA25E50	25	50	60	E	.54
MTA30E50	30	50	60	E	.54
MTA35E50	35	50	60	E	.54
MTA40E50	40	50	60	E	.54
MTA50E50	50	50	60	E	.54
MTA60F50	60	50	60	F	.60
MTA70F50	70	50	60	F	.60
MTA80F50	80	50	60	F	.64
MTA200G50	200	50	60	G	.97
MTA300G50	300	50	60	G	.97
MTA400G50	400	50	60	G	.97
MTA5D75	5	75	100	D	.54
MTA15E75	15	75	100	E	.54
MTA50F75	50	75	100	F	.60
MTA100G75	100	75	100	G	.97
MTA250G75	250	75	100	G	.97
MTA1D100	1	100	120	D	.54
MTA2D100	2	100	120	D	.54
MTA3D100	3	100	120	D	.54
MTA4D100	4	100	120	D	.54
MTA5D100	5	100	120	D	.54
MTA6E100	6	100	120	E	.54
MTA8E100	8	100	120	E	.54
MTA10E100	10	100	120	E	.54
MTA15E100	15	100	120	E	.54
MTA20F100	20	100	120	F	.54
MTA25F100	25	100	120	F	.60
MTA30F100	30	100	120	F	.60
MTA35F100	35	100	120	F	.60
MTA40F100	40	100	120	F	.60
MTA50G100	50	100	120	G	.97
MTA100-G100	100	100	120	G	.97
MTA150-G100	150	100	120	G	.97

MTV MOLDED CASE VERTICAL-MOUNT ELECTROLYTICS



†MTV CASE SIZES

Case Code	Size, Inches A	B	C
CB	.375	.812	.040
CD	.375	.937	.040
CF	.375	1.062	.040
CK	.375	1.312	.040
DB	.500	.812	.050
DE	.500	1.000	.050
DJ	.500	1.250	.050
DN	.500	1.500	.050

Mallory No. MTV-	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
150CD3	150	3	4	CD	$0.49
200CD3	200	3	4	CD	.56
300CF3	300	3	4	CF	.56
700DE3	700	3	4	DE	.67

MTV STOCK VALUES

Mallory No. MTV-	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
1000DJ3	1000	3	4	DJ	$0.71
100CB6	100	6	8	CB	.49
150CD6	150	6	8	CD	.49
250CK6	250	6	8	CK	.56
300CK6	300	6	8	CK	.56
400DE6	400	6	8	DE	.56
500DE6	500	6	8	DE	.64
750DJ6	750	6	8	DJ	.71
800DN6	800	6	8	DN	.71
70CB10	70	10	12	CB	.49
100CB10	100	10	12	CB	.49
200DB10	200	10	12	DB	.56
250DB10	250	10	12	DB	.56
300DE10	300	10	12	DE	.64
400DE10	400	10	12	DE	.67
600DJ10	600	10	12	DJ	.71
50CB15	50	15	18	CB	.49
60CB15	60	15	18	CB	.49
75CD15	75	15	18	CD	.49
90CD15	90	15	18	CD	.49
100CD15	100	15	18	CD	.49
120CF15	120	15	18	CF	.56
150DB15	150	15	18	DB	.56
150CK15	150	15	18	CK	.56
200DE15	200	15	18	DE	.64
250DE15	250	15	18	DE	.64
400DJ15	400	15	18	DJ	.71
500DN15	500	15	18	DN	.71
30CB25	30	25	30	CB	.47
35CB25	35	25	30	CB	.49
50CD25	50	25	30	CD	.49
50DB25	50	25	30	DB	.56
60CD25	60	25	30	CD	.56
75CF25	75	25	30	CF	.56
100DB25	100	25	30	DB	.56
140DE25	140	25	30	DE	.64
200DE25	200	25	30	DE	.71
250DJ25	250	25	30	DJ	.71
25CB35	25	35	45	CB	.49
50CD35	50	35	45	CD	.56
70DB35	70	35	45	DB	.56
100DB35	100	35	45	DB	.64

Mallory No. MTV-	Cap., µF	Max. WVDC	Surge VDC	Size †	Net Each
150DE35	150	35	45	DE	$0.71
200DJ35	200	35	45	DJ	.71
1CB50	1	50	60	CB	.47
2CB50	2	50	60	CB	.47
3CB50	3	50	60	CB	.47
4CB50	4	50	60	CB	.47
5CB50	5	50	60	CB	.47
6CB50	6	50	60	CB	.47
8CB50	8	50	60	CB	.47
10CB50	10	50	60	CB	.49
15CB50	15	50	60	CB	.49
20CB50	20	50	60	CB	.49
25CB50	25	50	60	CB	.56
35CD50	35	50	60	CD	.56
35DB50	35	50	60	DB	.67
50DB50	50	50	60	DB	.56
70DE50	70	50	60	DE	.64
100DE50	100	50	60	DE	.71
8CB75	8	75	100	CB	.56
15CF75	15	75	100	CF	.56
20DB75	20	75	100	DB	.56
25CF75	25	75	100	CF	.64
30DB75	30	75	100	DB	.64
35DB75	35	75	100	DB	.64
40DB75	40	75	100	DB	.64
50DE75	50	75	100	DE	.64
70DJ75	70	75	100	DJ	.71
1CB100	1	100	120	CB	.47
2CB100	2	100	120	CB	.47
3CB100	3	100	120	CB	.47
4CB100	4	100	120	CB	.47
5CB100	5	100	120	CB	.56
6CB100	6	100	120	CB	.56
8CB100	8	100	120	CB	.56
10CD100	10	100	120	CD	.56
15CF100	15	100	120	CF	.56
20DB100	20	100	120	DB	.56
25DB100	25	100	120	DB	.64
30DE100	30	100	120	DE	.64
35DE100	35	100	120	DE	.64
40DJ100	40	100	120	DJ	.64
50DJ100	50	100	120	DJ	.64

MALLORY Ceramic Capacitors

DISCAP® ceramic disc capacitors offer the widest range of types available. Meet or exceed all requirements of EIA Specification RS-198, Class 2.

LOW VOLTAGE
RMC-MAGNACAPS®

For low-voltage transistor circuits; rated 3, 12, 25 and 50 WVDC. **Tol.:** ±20%. **Power Factor:** 3% at 3 WVDC; 5% at 12 and 25 WVDC. **Temp. Coef.:** 3 V units, X5S: ±22%. All others, X5U: +22%, −56%. **Temp. Range:** −55° C to +85° C.

Mallory No.	Cap., µF	WV DC	IR* Ohms	Dia., In.	Net Ea.
MAG301	.1	3	40K	.290	53c
MAG3022	.22	3	18K	.310	30c
MAG3033	.33	3	12.5K	.425	38c
MAG3047	.47	3	9K	.425	30c
MAG3068	.68	3	6K	.550	41c
MAG31	1.0	3	4K	.615	45c
MAG32P2	2.2	3	1820	.880	53c
MAG1215	.05	12	800K	.290	23c
MAG1201	.1	12	400K	.400	23c
MAG12015	.15	12	280K	.480	28c
MAG12022	.22	12	180K	.550	30c
MAG12033	.33	12	120K	.775	41c
MAG12047	.47	12	8.5K	.840	53c
MAG1611	.01	16	10 megs	.262	17c
MAG16115	.015	16	10 megs	.290	17c
MAG1612	.02	16	10 megs	.340	17c
MAG16133	.033	16	10 megs	.400	19c
MAG1615	.05	16	10 megs	.480	19c
MAG16168	.068	16	10 megs	.550	23c
MAG1601	.10	16	10 megs	.650	23c
MAG16015	.15	16	10 megs	.775	33c
MAG16022	.22	16	10 megs	.910	38c
MAG2511	.01	25	10 megs	.265	23c
MAG25115	.015	25	10 megs	.290	19c
MAG2512	.02	25	10 megs	.340	23c
MAG25133	.033	25	10 megs	.400	23c
MAG2515	.05	25	10 megs	.480	30c
MAG25168	.068	25	10 megs	.550	28c
MAG2501	.10	25	10 megs	.650	45c
MAG25015	.15	25	10 megs	.775	38c
MAG25022	.22	25	10 megs	.910	50c
MAG5011	.01	50	10 megs	.290	23c
MAG50115	.015	50	10 megs	.290	23c
MAG5012	.02	50	10 megs	.340	23c
MAG50133	.033	50	10 megs	.400	26c
MAG5015	.05	50	10 megs	.480	28c
MAG50168	.068	50	10 megs	.550	38c
MAG5001	.10	50	10 megs	.650	41c

*Insulation resistance at rated voltage.
®P. R. Mallory & Co. Inc. trademark.

GENERAL PURPOSE 1000 VOLTS

Rated 1000 WVDC except 30K, 40K and 50K pF units, 500 WVDC.

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
GP533*	3.3	14c	GP336*	360	14c
GP550*	5.0	14c	GP339*	390	14c
GP568*	6.8	14c	GP340*	400	14c
GP580*	8.0	14c	GP347*	470	14c
GP410*	10	14c	GP350*	500	14c
GP412*	12	14c	GP356*	560	14c
GP415*	15	14c	GP360*	600	14c
GP418*	18	14c	GP368*	680	14c
GP420*	20	14c	GP375†	750	14c
GP422*	22	14c	GP382†	820	14c
GP425*	25	14c	GP210†	1000	14c
GP427*	27	14c	GP212‡	1200	14c
GP430*	30	14c	GP215‡	1500	14c
GP433*	33	14c	GP216‡	1600	14c
GP439*	39	14c	GP218‡	1800	14c
GP447*	47	14c	GP220‡	2000	14c
GP450*	50	14c	GP222‡	2200	14c
GP456*	56	14c	GP225‡	2500	14c
GP468*	68	14c	GP227‡	2700	14c
GP475*	75	14c	GP230‡	3000	14c
GP482*	82	14c	GP233‡	3300	14c
GP491*	91	14c	GP239‡	3900	14c
GP310*	100	14c	GP240‡	4000	14c
GP312*	120	14c	GP243‡	4300	14c
GP313*	130	14c	GP247#	4700	14c
GP315*	150	14c	GP250#	5000	14c
GP318*	180	14c	GP256#	5600	19c
GP320*	200	14c	GP268#	6800	19c
GP322*	220	14c	GP275§	7500	19c
GP324*	240	14c	GP110•	10K	19c
GP325*	250	14c	GP115•	15K	19c
GP327*	270	14c	GP120•	20K	26c
GP330*	300	14c	GP130•	30K	34c
GP333*	330	14c	GP140■	40K	43c
GP335*	350	14c	GP150♦	50K	45c

Max. Dia.: *9/32"; †3/8"; ‡17/32"; #5/8"; §21/32"; •25/32"; ■31/32"; ♦2 1/32".

MINIATURE 100 VOLTS

High capacity miniatures rated 100 WVDC; flash, 200 VDC. **Tol.:** −20%, +80%. **Power Factor:** 3% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** Z5V +22%, −82%. **Temp. Range:** +10° C to +85° C.

Mallory No.	Cap., µF	Net Ea.	Mallory No.	Cap., µF	Net Ea.
TA250*	.005	14c	TA125†	.025	23c
TA110*	.01	14c	TA150‡	.05	26c
TA120†	.02	23c	TA010‡	.1	66c

Dia.: *1 1/32"; †1 1/2"; ‡5/8".

MINIATURE 500 VOLTS

Miniature bypass types rated 500 WVDC; flash 1250 VDC. **Tol.:** ±20% except, GMV. **Power Factor:** 1.5% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** Z5U: +22%, −56%. **Temp. Range:** +10° C to +85° C.

SM210*•	.001	11c	SM110#	.01	14c
SM215†•	.0015	11c	SM120#	.02	19c
SM250‡	.005	11c			

Dia.: *1/4"; †3/32"; ‡3/8"; #1/2". •GMV.

HEAVY-DUTY BYPASS

High reliability; rated 1000 WVDC for bypass and audio coupling; 2000 VDC flash. **Tol.:** GMV‡ except B120, −20%, +80%. **Power Factor:** 1.5% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** X5U: +22%, −56%. **Temp. Range:** +10° C to +85° C.

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
B315*	150	14c	B218†	1800	14c
B318*	180	14c	B220†	2000	14c
B327*	270	14c	B222†	2200	14c
B347*	470	14c	B227‡	2700	14c
B350*	500	14c	B240‡	4000	14c
B356*	560	14c	B250§	5000	14c
B210*	1000	14c	B110•	10K	14c
B212*	1200	14c	B120■	20K	26c
B215†	1500	14c			

Dia.: *9/32"; †3/8"; ‡17/32"; §5/8"; •3/4"; ■31/16". ‡Guaranteed Minimum Value.

TEMPERATURE COMPENSATING

Stocked in both NPO (CNO) and N750 (CN7) values. Others, from P100 to N5200 available. Rated 1000 WVDC; 2000 VDC flash. **Tol.:** 1−4.7 pF, ±0.25 pF, all others, ±5%. **Power Factor:** 0.1% max. at 1 MHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** NPO, N750 and N1500. **Temp. Range:** −55° C to +85° C.

NPO TEMPERATURE COEFFICIENT

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
CNO510*	1	14c	CNO427†	27	14c
CNO515*	1.5	14c	CNO433†	33	14c
CNO522*	2.2	14c	CNO439‡	39	19c
CNO533*	3.3	14c	CNO447‡	47	19c
CNO547*	4.7	14c	CNO450‡	50	19c
CNO568*	6.8	14c	CNO456‡	56	19c
CNO410*	10	14c	CNO468‡	68	19c
CNO412*	12	14c	CNO475§	75	19c
CNO415*	15	14c	CNO482§	82	19c
CNO418†	18	14c	CNO310#	100	19c
CNO420†	20	14c	CNO312•	120	19c
CNO422†	22	14c	CNO315•	150	19c
CNO425†	25	14c			

N750 TEMPERATURE COEFFICIENT

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
CN7522*	2.2	14c	CN7433†	33	14c
CN7533*	3.3	14c	CN7439†	39	14c
CN7547*	4.7	14c	CN7447†	47	14c
CN7550*	5	14c	CN7468†	68	14c
CN7568*	6.8	14c	CN7482‡	82	19c
CN7410*	10	14c	CN7310‡	100	19c
CN7412*	12	14c	CN7315§	150	19c
CN7415*	15	14c	CN7322#	220	19c
CN7420*	20	14c	CN7327#	270	19c
CN7422*	22	14c	CN7333•	330	19c
CN7427*	27	14c			

Dia.: *9/32'; †1 3/16"; ‡9/16"; §2 1/32"; #3/4"; •7/8".

N1500 TEMPERATURE COEFFICIENT

CN15410	10	14c	CN15468	68	14c
CN15412	12	14c	CN15482	82	19c
CN15415	15	14c	CN15310	100	19c
CN15418	18	14c	CN15311	110	19c
CN15422	22	14c	CN15312	120	19c
CN15427	27	14c	CN15322	220	19c
CN15430	30	14c	CN15327	270	19c
CN15439	39	14c	CN15339	390	19c
CN15447	47	14c	CN15347	470	19c
CN15450	50	14c	CN15356	560	19c

TEMPERATURE STABLE

Extreme temperature stability for filter networks. Rated 1000 WVDC; 2000 VDC flash. **Tol.:** ±10%. **Power Factor:** 1.5% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** ±7.5%. **Temp. Range:** −55° C to +85° C.

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
JL310*	100	19c	JL212‡	1200	19c
JL315*	150	19c	JL215‡	1500	19c
JL322*	220	19c	JL218‡	1800	19c
JL333*	330	19c	JL220§	2000	23c
JL347†	470	19c	JL222§	2200	23c
JL356†	560	19c	JL233#	3300	26c
JL368†	680	19c	JL239#	3900	26c
JL375†	750	19c	JL247•	4700	34c
JL382†	820	19c	JL250•	5000	34c
JL210‡	1000	19c			

Dia.: *9/32"; †3/8"; ‡17/32"; §5/8"; #3/4"; •7/8".

FREQUENCY STABLE

Capacitance changes less than 10% from 100 Hz to 100 MHz. Rated 1000 WVDC; 2000 VDC flash. **Tol.:** ±10%. **Power Factor:** 1.5% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** ±7.5% (+10° C to +85° C).

JF482*	82	14c	JF210†	1000	14c
JF310*	100	14c	JF212‡	1200	14c
JF312*	120	14c	JF215‡	1500	14c
JF315*	150	14c	JF218‡	1800	14c
JF322*	220	14c	JF220‡	2000	14c
JF333*	330	14c	JF222‡	2200	14c
JF347*	470	14c	JF233■	3300	14c
JF350*	500	14c	JF239■	3900	14c
JF356*	560	14c	JF247#	4700	19c
JF368*	680	14c	JF250#	5000	19c
JF375†	750	14c	JF268^	6800	19c
JF382†	820	14c	JF110^§	10K	19c

Dia.: *9/32"; †3/8"; ‡17/32"; #3/4"; ■21/32"; ^2 3/32". §500 WVDC.

AC LINE AND BUFFER

UL Approved for AC line bypass. Rated 1400 WVDC; 150 V rms at 60 Hz; 210 VAC/DC peak; 2800 VDC flash. **Tol.:** ±20%. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** +22%, −56% (+10° C to +85° C); stamped Z5U.

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
UAC210†	1000	30c	UAC110§	10K	30c
UAC250‡	5000	30c			

Dia.: †2 3/32"; ‡2 1/32"; §1".

HIGH VOLTAGE

High voltage DISCAPS for low frequency use. Rated voltages as listed, below; flash is two times rated voltage. **Tol.:** ±20%. **Power Factor:** 1.5% max. at 1 kHz. **Insul. Resis.:** 7500 megs min. **Temp. Coef.:** Z5U: +22%, −56%. **Temp. Range:** −35° C to +85° C. **Not for deflection yoke use.**

2000 WVDC

Mallory No.	Cap., pF	Net Ea.	Mallory No.	Cap., pF	Net Ea.
2HV210§	1000	23c	2HV110♦	10K	30c

3000 WVDC

3HV322#	220	23c	3HV210§	1000	23c
3HV327#	270	23c	3HV212§	1200	30c
3HV333#	330	30c	3HV215§	1500	30c
3HV347#	470	30c	3HV218§	1800	30c
3HV356§	560	38c	3HV222†	2200	30c
3HV368§	680	23c	3HV233^	3300	30c
3HV375§	750	23c	3HV239^	3900	30c
3HV382§	820	23c	3HV247♦	4700	30c

6000 WVDC

6HV310#	100	45c	6HV339	390	45c
6HV312#	120	45c	6HV347†	470	45c
6HV313#	130	45c	6HV356†	560	45c
6HV315#	150	45c	6HV368^	680	45c
6HV322#	220	45c	6HV375^	750	45c
6HV327#	270	45c	6HV382^	820	45c
6HV333†	330	45c	6HV21C♦	1000	60c

Dia.: †1 3/16"; #1 1/32"; §2 1/32"; ^1 3/16"; ♦1 1/16".

SPARKCAP★ CAPACITORS

Provide circuit protection in color TV high voltage circuits.

Mallory No.	Cap., µF	WVDC	Dia., In.	Net Each
SPG2	*	1–2 kV	.35	23c
SPG3	*	2–3 kV	.35	23c
SPG113	.01	2–3 kV	.75	45c

*0.75 pF, inherent capacity of gap only. No parallel capacitors used.
★Mallory trademark.

MALLORY DISCAP® CERAMIC CAPACITORS CONTINUED ON NEXT PAGE

DECI-CAPS

Meets requirements of MIL-C-11015C for moisture, vibration and shock resistance. Epoxy-molded monolithic construction offers low power factor and high stability. High density cordwood packaging. **Operating Range:** −55° C to +125° C. **Capacitance Range:** 4.7–27,000 pF. **Tolerance:** ±10%. **Working Voltage:** 4.7–470 pF, 200 VDC; 560–27,000 pF, 100 VDC. **Insulation Resistance:** 20,000 megs min. **Dielectric Strength:** 500 VDC to 470 pF; 250 VDC, 560–27,000 pF. **Life:** 1000 hours at 125° C under twice rated voltage. **Size:** .250″ x .100″.

Nytronics No.	Cap., pF	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
DC-047	4.7	$1.44	$0.96	$0.69	$0.53	$0.44	$0.40
DC-056	5.6	1.44	.96	.69	.53	.44	.40
DC-068	6.8	1.44	.96	.69	.53	.44	.40
DC-082	8.2	1.44	.96	.69	.53	.44	.40
DC-100	10	1.44	.96	.69	.53	.44	.40
DC-120	12	1.44	.96	.69	.53	.44	.40
DC-150	15	1.44	.96	.69	.53	.44	.40
DC-180	18	1.44	.96	.69	.53	.44	.40
DC-220	22	1.44	.96	.69	.53	.44	.40
DC-270	27	1.44	.96	.69	.53	.44	.40
DC-330	33	1.44	.96	.69	.53	.44	.40
DC-390	39	1.44	.96	.69	.53	.44	.40
DC-470	47	1.44	.96	.69	.53	.44	.40
DC-560	56	1.44	.96	.69	.53	.44	.40
DC-680	68	1.44	.96	.69	.53	.44	.40
DC-820	82	1.44	.96	.69	.53	.44	.40
DC-101	100	1.44	.96	.69	.53	.44	.40
DC-121	120	1.44	.96	.69	.53	.44	.40
DC-151	150	1.44	.96	.69	.53	.44	.40
DC-181	180	1.44	.96	.69	.53	.44	.40
DC-221	220	1.44	.96	.69	.53	.44	.40
DC-271	270	1.44	.96	.69	.53	.44	.40
DC-331	330	1.44	.96	.69	.53	.44	.40
DC-391	390	1.44	.96	.69	.53	.44	.40
DC-471	470	1.44	.96	.69	.53	.44	.40
DC-561	560	2.00	1.33	.95	.73	.61	.56
DC-681	680	2.00	1.33	.95	.73	.61	.56
DC-821	820	2.00	1.33	.95	.73	.61	.56
DC-102	1000	2.00	1.33	.95	.73	.61	.56
DC-122	1200	2.52	1.68	1.20	.92	.77	.70
DC-152	1500	2.52	1.68	1.20	.92	.77	.70
DC-182	1800	2.52	1.68	1.20	.92	.77	.70
DC-222	2200	2.52	1.68	1.20	.92	.77	.70
DC-272	2700	3.11	2.07	1.48	1.14	.95	.86
DC-332	3300	3.11	2.07	1.48	1.14	.95	.86
DC-392	3900	3.11	2.07	1.48	1.14	.95	.86
DC-472	4700	3.11	2.07	1.48	1.14	.95	.86
DC-562	5600	3.44	2.29	1.64	1.26	1.05	.96
DC-682	6800	3.44	2.29	1.64	1.26	1.05	.96
DC-822	8200	3.44	2.29	1.64	1.26	1.05	.96
DC-103	10,000	3.44	2.29	1.64	1.26	1.05	.96
DC-123	12,000	4.00	2.66	1.90	1.46	1.22	1.11
DC-153	15,000	4.00	2.66	1.90	1.46	1.22	1.11
DC-183	18,000	4.00	2.66	1.90	1.46	1.22	1.11
DC-223	22,000	4.52	3.01	2.15	1.66	1.38	1.26
DC-273	27,000	4.52	3.01	2.15	1.66	1.38	1.26

HY-CAPS

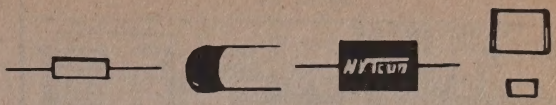
Meets requirements of MIL-C-11015 for moisture, vibration and shock resistance. Monolithic construction for coupling, bypass and filter circuits. **Operating Range:** −55° C to +125° C; less than ±15% capacitance change. **Capacitance Range:** .01–2.5 μF. **Tolerance:** ±20%. **Working Voltage:** 100 VDC. **Life:** 1000 hours at 125° C under twice rated voltage.

Nytronics No.*	Cap., μF	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
HCA-103M	.01	$ 3.57	$ 2.38	$ 1.70	$ 1.31	$ 1.09	$ 0.99
HCA-123M	.012	3.57	2.38	1.70	1.31	1.09	.99
HCA-153M	.015	3.57	2.38	1.70	1.31	1.09	.99
HCA-183M	.018	3.57	2.38	1.70	1.31	1.09	.99
HCA-223M	.022	4.58	3.23	2.31	1.78	1.48	1.34
HCA-273M	.027	4.58	3.23	2.31	1.78	1.48	1.34
HCA-333M	.033	4.58	3.23	2.31	1.78	1.48	1.34
HCB-393M	.039	7.93	5.29	3.78	2.90	2.42	2.20
HCB-473M	.047	7.93	5.29	3.78	2.90	2.42	2.20
HCB-563M	.056	7.93	5.29	3.78	2.90	2.42	2.20
HCB-683M	.068	10.25	6.68	4.77	3.67	3.06	2.78
HCB-823M	.082	10.25	6.68	4.77	3.67	3.06	2.78
HCB-104M	.10	10.25	6.68	4.77	3.67	3.06	2.78
HCB-124M	.12	11.17	7.45	5.32	4.09	3.41	3.10
HCC-154M	.15	11.17	7.45	5.32	4.09	3.41	3.10
HCC-184M	.18	11.17	7.45	5.32	4.09	3.41	3.10
HCC-224M	.22	11.86	7.91	5.65	4.34	3.62	3.29
HCC-274M	.27	11.86	7.91	5.65	4.34	3.62	3.29
HCC-334M	.33	11.86	7.91	5.65	4.34	3.62	3.29
HCC-394M	.39	15.40	10.26	7.33	5.64	4.70	4.27
HCC-474M	.47	15.40	10.26	7.33	5.64	4.70	4.27
HCD-105M	1.0	25.32	16.88	12.06	9.28	7.73	7.03
HCE-155M	1.5	33.87	22.58	16.13	12.41	10.34	9.40
HCF-205M	2.0	44.91	22.94	21.39	16.45	13.71	12.46
HCG-255M	2.5	60.84	40.36	28.97	22.28	18.57	16.88

*Third letter of part number indicates case size.

CASE SIZES FOR HY-CAPS

Type	Maximum Size, Inches Width	Height	Thickness	Nom. Between Leads, In.
A	.225	.175	.11	.2
B	.325	.31	.15	.3
C	.67	.355	.15	.625
D	.8	.55	.225	.625
E	.8	.55	.25	.625
F	.8	.55	.3	.625
G	.8	.55	.375	.625



Deci-Cap Hy-Cap Nyt-Cap Nyt-Chip

NYT-CAPS

Ultra-high stability; epoxy-molded monolithic construction. **Operating Range:** −55° C to +125° C. **Temperature Coefficient:** ±25 ppm/° C max. **Tolerance:** ±10%. **Working Voltage:** 200 VDC. **Dissipation:** Less than 0.001 at 25° C; 0.002 at 125° C; measured at 1 kHz. **Insulation Resistance:** 1000K megs min. at 25° C; 10 K megs min. at 125° C.

Nytronics No.	Cap., pF	Case Size*	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
NC-047	4.7	A	$2.65	$1.77	$1.26	$0.97	$0.81	$0.74
NC-056	5.6	A	2.65	1.77	1.26	.97	.81	.74
NC-068	6.8	A	2.65	1.77	1.26	.97	.81	.74
NC-082	8.2	A	2.65	1.77	1.26	.97	.81	.74
NC-100	10	A	2.65	1.77	1.26	.97	.81	.74
NC-120	12	A	2.65	1.77	1.26	.97	.81	.74
NC-150	15	A	2.65	1.77	1.26	.97	.81	.74
NC-180	18	A	2.98	1.99	1.42	1.09	.91	.82
NC-220	22	A	2.98	1.99	1.42	1.09	.91	.82
NC-270	27	A	2.98	1.99	1.42	1.09	.91	.82
NC-330	33	A	2.98	1.99	1.42	1.09	.91	.82
NC-390	39	A	2.98	1.99	1.42	1.09	.91	.82
NC-470	47	A	2.98	1.99	1.42	1.09	.91	.82
NC-560	56	A	2.98	1.99	1.42	1.09	.91	.82
NC-680	68	A	2.98	1.99	1.42	1.09	.91	.82
NC-820	82	A	2.98	1.99	1.42	1.09	.91	.82
NC-101	100	A	3.34	2.23	1.59	1.22	1.02	.92
NC-121	120	A	3.34	2.23	1.59	1.22	1.02	.92
NC-151	150	A	3.34	2.23	1.59	1.22	1.02	.92
NC-181	180	A	3.34	2.23	1.59	1.22	1.02	.92
NC-221	220	A	3.34	2.23	1.59	1.22	1.02	.92
NC-271	270	B	6.55	4.37	3.12	2.40	2.00	1.82
NC-331	330	B	6.55	4.37	3.12	2.40	2.00	1.82
NC-391	390	B	6.55	4.37	3.12	2.40	2.00	1.82
NC-471	470	B	6.55	4.37	3.12	2.40	2.00	1.82
NC-561	560	B	7.40	4.94	3.53	2.71	2.26	2.06
NC-681	680	B	7.40	4.94	3.53	2.71	2.26	2.06
NC-821	820	B	7.40	4.94	3.53	2.71	2.26	2.06
NC-102	1000	B	7.40	4.94	3.53	2.71	2.26	2.06
NC-122	1200	B	8.35	5.57	3.98	3.06	2.55	2.32
NC-152	1500	B	8.35	5.57	3.98	3.06	2.55	2.32
NC-182	1800	B	8.35	5.57	3.98	3.06	2.55	2.32
NC-222	2200	B	8.35	5.57	3.98	3.06	2.55	2.32
NC-272	2700	B	9.30	6.20	4.43	3.41	2.84	2.58
NC-332	3300	B	9.30	6.20	4.43	3.41	2.84	2.58
NC-392	3900	B	9.30	6.20	4.43	3.41	2.84	2.58
NC-472	4700	B	9.30	6.20	4.43	3.41	2.84	2.58

*A, 0.100″ dia. x 0.250″ lg.; B, 0.350″ w. x 0.250″ d. x 0.100″ h.

NYT-CHIPS

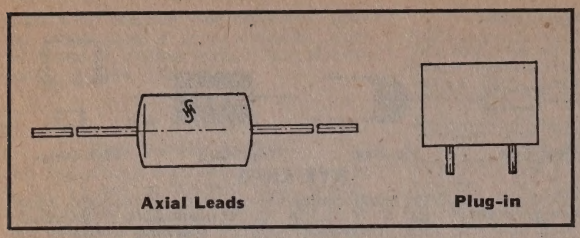
Slug-form monolithic construction; ultra-high stability. **Operating Range:** −55° C to +125° C. **Temp. Coefficient:** ±25 ppm/° C max. **Tolerance:** ±10%. **Working Voltage:** 200 VDC. **Dissipation:** Less than 0.001 at 25° C; 0.002 at 125° C; measured at 1 kHz. **Insulation Resistance:** 1000K megs min. at 25° C; 10K megs at 125° C.

Nytronics No.	Cap., pF	Case Size*	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
NCU-047	4.7	A	$2.33	$1.55	$1.11	$0.85	$0.71	$0.64
NCU-056	5.6	A	2.33	1.55	1.11	.85	.71	.64
NCU-068	6.8	A	2.33	1.55	1.11	.85	.71	.64
NCU-082	8.2	A	2.33	1.55	1.11	.85	.71	.64
NCU-100	10	A	2.33	1.55	1.11	.85	.71	.64
NCU-120	12	A	2.33	1.55	1.11	.85	.71	.64
NCU-150	15	A	2.33	1.55	1.11	.85	.71	.64
NCU-180	18	A	2.33	1.55	1.11	.85	.71	.64
NCU-220	22	A	2.33	1.55	1.11	.85	.71	.64
NCU-270	27	A	2.33	1.55	1.11	.85	.71	.64
NCU-330	33	A	2.34	1.56	1.20	.92	.77	.70
NCU-390	39	A	2.34	1.56	1.20	.92	.77	.70
NCU-470	47	A	2.34	1.56	1.20	.92	.77	.70
NCU-560	56	A	2.34	1.56	1.20	.92	.77	.70
NCU-680	68	A	2.34	1.56	1.20	.92	.77	.70
NCU-820	82	A	2.34	1.56	1.20	.92	.77	.70
NCU-101	100	A	2.92	1.94	1.39	1.07	.89	.81
NCU-121	120	A	2.92	1.94	1.39	1.07	.89	.81
NCU-151	150	A	2.92	1.94	1.39	1.07	.89	.81
NCU-181	180	A	2.92	1.94	1.39	1.07	.89	.81
NCU-221	220	A	2.92	1.94	1.39	1.07	.89	.81
NCU-271	270	B	4.72	3.14	2.25	1.73	1.44	1.31
NCU-331	330	B	4.72	3.14	2.25	1.73	1.44	1.31
NCU-391	390	B	4.72	3.14	2.25	1.73	1.44	1.31
NCU-471	470	B	4.72	3.14	2.25	1.73	1.44	1.31
NCU-561	560	B	5.96	3.97	2.84	2.18	1.82	1.66
NCU-681	680	B	5.96	3.97	2.84	2.18	1.82	1.66
NCU-821	820	B	5.96	3.97	2.84	2.18	1.82	1.66
NCU-102	1000	B	5.96	3.97	2.84	2.18	1.82	1.66
NCU-122	1200	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-152	1500	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-182	1800	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-222	2200	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-272	2700	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-332	3300	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-392	3900	B	8.12	5.42	3.87	2.93	2.48	2.25
NCU-472	4700	B	8.12	5.42	3.87	2.93	2.48	2.25

*A, 0.170″ w. x 0.65″ d. x 0.70″ th.; B, 0.280″ w. x 0.195″ d. x 0.70″ th.

SIEMENS CORPORATION

TYPE MKH METALLIZED POLYESTER FOIL CAPACITORS



Metallized polyester foil capacitors are small in size with excellent characteristics for a wide variety of applications, especially in filters or for blocking and coupling. Metallized, self-healing polyester foil is joined at the face ends and the leads are soldered to the metallized low loss winding to ensure reliable contact. Can be used in high current pulse forming networks with minimum failure due to arc-over or direct shorts. Operating temperature, −40° to +100° C. Available in oval axial-lead style, or in rectangular plug-in type.

SPECIFICATIONS

Voltage Loading: DC voltage may reach 1.25 times rated WVDC for up to 2000 hours of intermittent operation; 1.5 times rated WVDC in voltage peaks (milliseconds). **Capacitance Drift:** ±3% up to 85° C; +3%, −6% up to 100° C. **Operating Temperature:** −40° to +100° C. **Relative Humidity:** Type B 32 234, average annual relative humidity less than or equal to 75% with maximum of 95% during 30 days per annum, otherwise 85%; type B 32 231, average annual relative humidity less than or equal to 65% with maximum of 85% during 60 days per annum, otherwise 75%. **Insulation (Time Constant):** During operational life, the insulation may decrease for a short period to about 10% of value at time of delivery, especially when the capacitor is subjected to the maximum permissible humidity for a long period. **Dissipation Factor:** Tan δ value less than 10 x 10^{-3} (5 x 10^{-3} average) at 1 kHz, less than 20 x 10^{-3} (15 x 10^{-3} average) at 10 kHz, for capacitance values less than 3.9 μF. Tan δ value less than 12 x 10^{-3} (7 x 10^{-3} average) at 1 kHz, less than 30 x 10^{-3} (18 x 10^{-3} average) at 10 kHz, for capacitance values greater than 3.9 μF. Measured at +20° C. **Capacitance Tolerance:** ±10%. Available with ±20% tolerance on request.

TYPE B 32 231 WITH AXIAL LEADS

250 WVDC

Siemens No. B 32 231-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.047/10/250	.047	.59x.22x.34	$0.60	$0.40	$0.27	$0.20	$0.17
.068/10/250	.068	.59x.26x.36	.64	.43	.29	.21	.18
.1/10/250	.1	.59x.28x.39	.68	.45	.30	.23	.19
.15/10/250	.15	.79x.22x.36	.74	.49	.33	.25	.21
.22/10/250	.22	.79x.22x.45	.79	.53	.35	.26	.22
.33/10/250	.33	.83x.28x.51	.95	.63	.42	.32	.26
.47/10/250	.47	1.08x.22x.59	1.09	.73	.48	.36	.30
.68/10/250	.68	1.08x.24x.59	1.31	.87	.58	.44	.36
1.0/10/250	1.0	1.08x.34x.71	1.56	1.04	.69	.52	.43
1.5/10/250	1.5	1.24x.37x.83	2.67	1.78	1.19	.89	.74
2.2/10/250	2.2	1.24x.49x.93	3.05	2.03	1.36	1.02	.85
2.7/10/250	2.7	1.14x.47x.95	4.19	2.80	1.86	1.40	1.17
3.3/10/250	3.3	1.14x.53x1.0	4.56	3.04	2.03	1.52	1.27
3.9/10/250	3.9	1.73x.43x1.02	4.93	3.29	2.19	1.64	1.37
4.7/10/250	4.7	1.73x.47x1.08	5.33	3.55	2.37	1.78	1.48
5.6/10/250	5.6	1.73x.53x1.14	6.50	4.33	2.89	2.17	1.81
6.8/10/250	6.8	1.73x.61x1.20	7.07	4.71	3.14	2.36	1.96
8.2/10/250	8.2	1.73x.67x1.28	8.77	5.84	3.90	2.92	2.44
10/10/250	10.0	1.73x.77x1.36	9.50	6.33	4.22	3.49	2.79

400 WVDC

Siemens No. B 32 231-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.022/10/400	.022	.59x.22x.34	$0.64	$0.43	$0.29	$0.21	$0.18
.033/10/400	.033	.59x.22x.34	.68	.45	.30	.23	.19
.047/10/400	.047	.75x.18x.32	.70	.47	.31	.23	.19
.068/10/400	.068	.79x.18x.32	.74	.49	.33	.25	.20
.1/10/400	.1	.79x.26x.37	.76	.51	.34	.25	.21
.15/10/400	.15	.79x.26x.39	.86	.57	.38	.29	.24
.22/10/400	.22	1.08x.24x.51	1.04	.70	.46	.35	.29
.33/10/400	.33	1.08x.28x.61	1.14	.76	.51	.38	.32
.47/10/400	.47	1.08x.28x.63	1.42	.95	.63	.47	.40
.68/10/400	.68	1.22x.40x.83	2.03	1.35	.90	.68	.56
1.0/10/400	1.0	1.22x.48x.95	2.65	1.76	1.18	.88	.74
1.5/10/400	1.5	1.73x.44x1.03	3.40	2.27	1.51	1.13	.95
2.2/10/400	2.2	1.73x.56x1.2	4.66	3.11	2.07	1.55	1.30
2.7/10/400	2.7	1.73x.63x1.23	5.30	3.53	2.36	1.77	1.47
3.3/10/400	3.3	1.73x.77x1.28	7.23	4.82	3.21	2.41	2.01
3.9/10/400	3.9	1.73x.85x1.36	8.50	5.66	3.78	2.83	2.36
4.7/10/400	4.7	1.73x.91x1.54	9.69	6.46	4.31	3.23	2.69

630 WVDC

Siemens No. B 32 231-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.01/10/630	.01	.55x.20x.32	$0.68	$0.45	$0.32	$0.26	$0.21
.015/10/630	.015	.55x.20x.32	.72	.48	.33	.27	.22
.022/10/630	.022	.55x.26x.40	.82	.55	.36	.28	.23
.033/10/630	.033	.75x.20x.34	.83	.56	.37	.28	.23
.047/10/630	.047	.75x.22x.44	.87	.58	.39	.29	.24
.068/10/630	.068	.75x.26x.61	.90	.60	.40	.30	.25
.1/10/630	.1	1.08x.24x.59	1.04	.69	.46	.35	.29
.15/10/630	.15	1.08x.32x.65	1.20	.80	.53	.40	.33
.22/10/630	.22	1.08x.34x.83	1.41	.94	.63	.47	.39
.33/10/630	.33	1.24x.32x.79	1.94	1.29	.86	.65	.54
.47/10/630	.47	1.24x.39x.91	2.29	1.52	1.02	.76	.64

*Intermediate capacitance values available on request.

TYPE B 32 234 PLUG-IN

250 WVDC

Siemens No. B 32 234-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.033/10/250	.033	.51x.16x.38	$0.65	$0.46	$0.30	$0.23	$0.19
.047/10/250	.047	.51x.16x.38	.65	.46	.30	.23	.19
.068/10/250	.068	.51x.20x.42	.68	.47	.32	.24	.20
.1/10/250	.1	.71x.22x.44	.69	.51	.34	.26	.21
.12/10/250	.12	.71x.22x.44	.74	.54	.36	.27	.23
.15/10/250	.15	.71x.22x.44	.77	.56	.38	.28	.24
.18/10/250	.18	.71x.28x.51	.86	.63	.42	.32	.26
.22/10/250	.22	.71x.28x.51	.88	.65	.43	.32	.27
.27/10/250	.27	.71x.36x.58	1.04	.76	.51	.38	.32
.33/10/250	.33	.71x.36x.58	1.06	.78	.52	.39	.33
.39/10/250	.39	1.07x.26x.59	1.15	.84	.56	.42	.35
.47/10/250	.47	1.07x.26x.59	1.32	.88	.59	.44	.37
.56/10/250	.56	1.07x.28x.65	1.34	.98	.65	.49	.41
.68/10/250	.68	1.07x.28x.65	1.39	1.01	.68	.51	.42
.82/10/250	.82	1.07x.34x.73	1.79	1.30	.87	.65	.55
1.0/10/250	1.0	1.07x.34x.73	1.79	1.33	.89	.67	.56
1.5/10/250	1.5	1.26x.44x.79	2.19	1.64	1.10	.82	.69
2.2/10/250	2.2	1.26x.52x.89	3.22	2.42	1.61	1.21	1.01

400 WVDC

Siemens No. B 32 234-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.01/10/400	.01	.51x.16x.38	$0.63	$0.44	$0.29	$0.22	$0.19
.015/10/400	.015	.51x.16x.38	.65	.46	.31	.23	.19
.022/10/400	.022	.51x.16x.38	.68	.47	.32	.24	.20
.033/10/400	.033	.51x.20x.42	.70	.49	.33	.25	.21
.047/10/400	.047	.71x.22x.44	.77	.54	.36	.27	.23
.068/10/400	.068	.71x.22x.44	.82	.58	.38	.29	.24
.1/10/400	.1	.71x.28x.52	.88	.64	.43	.32	.27
.12/10/400	.12	.71x.28x.52	.92	.68	.45	.34	.28
.15/10/400	.15	.71x.28x.52	.95	.70	.47	.35	.29
.18/10/400	.18	1.07x.26x.59	1.04	.76	.51	.38	.32
.22/10/400	.22	1.07x.26x.59	1.10	.81	.54	.41	.34
.27/10/400	.27	1.07x.26x.59	1.24	.91	.61	.46	.38
.33/10/400	.33	1.07x.28x.65	1.32	.96	.64	.48	.40
.39/10/400	.39	1.07x.34x.73	1.52	1.11	.74	.56	.47
.47/10/400	.47	1.07x.34x.73	1.57	1.14	.76	.57	.48
.68/10/400	.68	1.26x.44x.79	2.23	1.63	1.09	.82	.68
1.0/10/400	1.0	1.26x.56x.89	2.66	1.74	1.33	1.00	.83

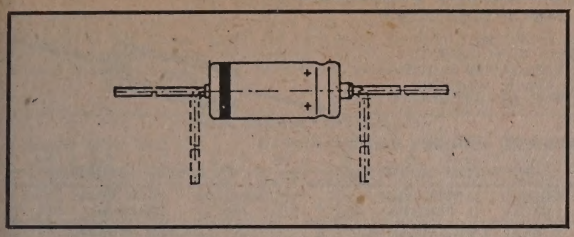
630 WVDC

Siemens No. B 32 234-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.01/10/630	.01	.51x.20x.42	$0.70	$0.49	$0.33	$0.25	$0.21
.015/10/630	.015	.51x.24x.46	.78	.54	.36	.27	.23
.022/10/630	.022	.51x.24x.46	.90	.63	.42	.32	.26
.033/10/630	.033	.71x.22x.44	.95	.65	.44	.33	.28
.047/10/630	.047	.71x.28x.52	.99	.70	.47	.35	.29
.068/10/630	.068	.71x.36x.58	1.09	.76	.51	.38	.32
.1/10/630	.1	1.07x.28x.65	1.13	.82	.55	.41	.34
.12/10/630	.12	1.07x.28x.65	1.25	.91	.61	.46	.38
.15/10/630	.15	1.07x.34x.73	1.29	.94	.63	.47	.39
.18/10/630	.18	1.07x.34x.73	1.62	1.18	.79	.59	.50
.22/10/630	.22	1.07x.34x.73	1.64	1.20	.80	.60	.50
.33/10/630	.33	1.26x.44x.79	2.12	1.54	1.03	.77	.64
.47/10/630	.47	1.26x.52x.89	2.62	1.92	1.28	.96	.80

SPECIAL HIGH CAPACITANCE VALUES ARE AVAILABLE. WRITE FOR INFORMATION.

ALUMINUM ELECTROLYTIC AND POLY-CARBONATE STACKED-FOIL CAPACITORS

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



All welded electrolytic capacitors combine very small volume with outstanding electrical characteristics, specially suitable for transistorized equipment. Offer long life at temperatures from −40° to +85° C, with excellent loss factor, leakage currents and impedance values. All connections are welded to assure contact reliability; negative pole is connected to case. Axial leads, with etched foil anodes in an insulated cylindrical aluminum case fitted with a rubber seal at one end. **Loss Factor:** Approximate value of Tan δ is .10 for 3 WVDC types, .08 for 6 WVDC, .06 for 10 to 35 WVDC, .03 for 70 WVDC, .02 for 100 WVDC (all at 50 Hz and +25° C). **Leakage Current:** I_r (μA) = .02 x C (μF) x V (Volts) when storage without voltage does not amount to more than four weeks, measured 5 minutes after application of rated voltage at 20° C. **Lead Size:** 1.57″ long; #20 AWG except microminiature type B41313(*), #24. **Tolerance:** +50%, −10% except microminiature type B41313(*), +100%, −10%.

6.3 WVDC

Siemens Number	Cap., µF	Size Code†	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
B41283	100	E	$0.56	$0.37	$0.25	$0.19	$0.16
B41283	220	D	.57	.38	.25	.19	.16
B41283	470	H	.67	.45	.30	.23	.19
B41283	1000	J	.92	.61	.41	.31	.26
B41010	2200	L	1.25	.84	.56	.42	.35
B41010	4700	N	2.00	1.33	.89	.67	.56
B41010	10,000	P	3.62	2.41	1.61	1.21	1.00

10 WVDC

B41313*	10	A	$0.66	$0.44	$0.30	$0.22	$0.18
B41313*	47	C	.54	.36	.24	.18	.15
B41283	100	G	.56	.37	.25	.19	.16
B41283	220	F	.59	.39	.26	.20	.17
B41283	470	I	.70	.47	.31	.23	.19
B41010	1000	K	.88	.59	.39	.29	.25
B41010	2200	N	1.62	1.08	.72	.54	.45
B41010	4700	O	2.75	1.83	1.22	.92	.76
B41010	10,000	Q	4.43	2.95	1.97	1.48	1.23

16 WVDC

B41313*	4.7	A	$0.66	$0.44	$0.29	$0.22	$0.18
B41313*	10	B	.52	.35	.23	.17	.14
B41313*	22	B	.52	.35	.23	.17	.14
B41283	47	E	.56	.37	.25	.19	.16
B41283	100	D	.57	.38	.25	.19	.16
B41283	220	H	.67	.45	.30	.23	.19
B41283	470	J	.74	.49	.33	.25	.21
B41010	1000	L	1.22	.82	.54	.41	.34
B41010	2200	N	1.80	1.20	.80	.60	.50
B41010	4700	O	3.05	2.04	1.36	1.02	.85

25 WVDC

B41313*	2.2	A	$0.66	$0.44	$0.29	$0.22	$0.18
B41313*	10	B	.52	.35	.23	.17	.14
B41313*	22	C	.54	.36	.24	.18	.15
B41283	47	G	.56	.37	.25	.19	.16
B41283	100	F	.59	.39	.26	.20	.17
B41283	220	I	.71	.47	.32	.24	.20
B41010	470	K	.88	.59	.39	.29	.25
B41010	1000	M	1.42	.95	.63	.47	.40
B41010	2200	O	2.59	1.73	1.15	.87	.72
B41010	4700	Q	4.41	2.94	1.96	1.47	1.23

40 WVDC

B41313*	1.0	A	$0.66	$0.44	$0.29	$0.22	$0.18
B41313*	4.7	B	.52	.35	.23	.17	.14
B41313*	10	C	.54	.36	.24	.18	.15
B41283	22	E	.56	.37	.25	.19	.16
B41283	47	D	.57	.38	.25	.19	.16
B41283	100	I	.70	.46	.31	.23	.19
B41283	220	J	.74	.49	.33	.25	.21
B41010	470	L	1.22	.82	.54	.41	.34
B41010	1000	N	1.75	1.17	.78	.59	.49
B41010	2200	P	3.65	2.43	1.62	1.22	1.01

63 WVDC

B41313*	.47	A	$0.66	$0.44	$0.29	$0.22	$0.18
B41313*	1.0	B	.52	.35	.23	.17	.14
B41313*	2.2	B	.52	.35	.23	.17	.14
B41313*	4.7	C	.54	.36	.24	.18	.15
B41283	10	E	.56	.37	.25	.19	.16
B41283	22	D	.57	.38	.25	.19	.16
B41283	47	H	.67	.45	.30	.23	.19
B41283	100	J	.87	.58	.39	.29	.24
B41010	220	L	1.22	.82	.54	.41	.34
B41010	470	N	1.69	1.13	.75	.57	.47
B41010	1000	P	3.57	2.38	1.59	1.19	.99

100 WVDC

B41313*	.47	B	$0.52	$0.35	$0.23	$0.17	$0.14
B41313*	1.0	B	.52	.35	.23	.17	.14
B41313*	2.2	C	.54	.36	.24	.18	.15
B41283	4.7	E	.56	.37	.25	.19	.16
B41283	10	D	.57	.38	.25	.19	.16
B41283	22	H	.67	.44	.30	.22	.19
B41283	47	J	.86	.57	.38	.29	.24
B41010	100	L	1.34	.90	.60	.45	.37
B41010	220	N	1.97	1.31	.88	.66	.55
B41010	470	P	3.59	2.40	1.60	1.20	1.00

†SIZE CODES

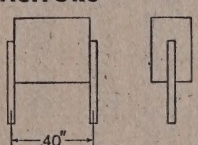
Size Code	Size, In. Dia. x L.	Size Code	Size, In. Dia. x L.	Size Code	Size, In. Dia. x L.
A	.142 x .480	G	.272 x .835	M	.658 x 1.240
B	.193 x .480	H	.350 x .835	N	.736 x 1.240
C	.244 x .480	I	.410 x .835	O	.736 x 1.440
D	.350 x .638	J	.410 x 1.032	P	.815 x 1.634
E	.272 x .736	K	.531 x 1.240	Q	1.032 x 1.654
F	.350 x .736	L	.580 x 1.240	R	1.032 x 2.050

TYPE MKM (B 32 541) STACKED-FOIL CAPACITORS

Metallized polycarbonate capacitors with fixed 0.40″ lead spacing for PC mounting. Unique, stack foil construction holds volume to half that of equivalent metallized film types; and, offers extremely low self-induction. **Temp. Range:** −40° C to +100° C operating. **Capacitance Drift:** ±3% max. up to 85° C. **Dissipation:** Less than or equal to 3 x 10^{-3} at 1 kHz. **AC Voltage:** 250 VDC units are capable of 100 VAC operation; 100 VDC units handle 75 VAC, 2000 hours at 85° C. **Insulation Resistance:** Greater than 30,000 megohms for operating voltages less than 100 V; 75,000 megohms or 100 volts or over. **Tolerance:** ±5%. **Also Available:** Type B 32 540 version with 0.30″ lead spacing.

100 WVDC

Siemens No. B 32 541-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
0.18/5/100	.18	.45 x .14 x .30	$0.61	$0.40	$0.27	$0.20	$0.17
0.22/5/100	.22	.45 x .14 x .30	.56	.37	.25	.19	.15
0.27/5/100	.27	.45 x .14 x .45	.61	.41	.27	.20	.17
0.33/5/100	.33	.45 x .16 x .45	.73	.48	.32	.24	.20
0.39/5/100	.39	.45 x .18 x .45	.81	.54	.36	.27	.23
0.47/5/100	.47	.45 x .21 x .45	.85	.57	.38	.28	.24
0.56/5/100	.56	.45 x .24 x .45	.95	.63	.42	.32	.26
0.68/5/100	.68	.45 x .28 x .45	1.20	.80	.53	.40	.33
0.82/5/100	.82	.45 x .33 x .45	1.32	.88	.59	.44	.37
1.00/5/100	1.0	.45 x .39 x .45	1.42	.95	.63	.47	.39



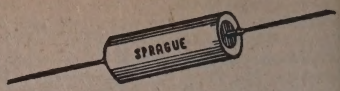
250 WVDC

Siemens No. B 32 541-	Cap., µF	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
0.01/5/250	.01	.45 x .13 x .26	$0.32	$0.21	$0.14	$0.11	$0.09
0.012/5/250	.012	.45 x .13 x .26	.35	.23	.15	.12	.10
0.015/5/250	.015	.45 x .13 x .26	.32	.21	.14	.11	.09
0.018/5/250	.018	.45 x .13 x .26	.36	.24	.16	.12	.10
0.022/5/250	.022	.45 x .13 x .26	.32	.22	.14	.11	.09
0.027/5/250	.027	.45 x .13 x .26	.36	.24	.16	.12	.10
0.033/5/250	.033	.45 x .15 x .26	.34	.23	.15	.11	.09
0.039/5/250	.039	.45 x .17 x .26	.39	.26	.17	.13	.11
0.047/5/250	.047	.45 x .13 x .26	.35	.24	.16	.12	.10
0.056/5/250	.056	.45 x .14 x .26	.40	.26	.18	.13	.11
0.068/5/250	.068	.45 x .13 x .26	.37	.25	.17	.12	.10
0.082/5/250	.082	.45 x .14 x .26	.41	.27	.18	.14	.11
0.1/5/250	.1	.45 x .14 x .33	.39	.26	.17	.13	.11
0.12/5/250	.12	.45 x .17 x .30	.45	.30	.20	.15	.13
0.15/5/250	.15	.45 x .17 x .38	.49	.33	.22	.16	.14
0.18/5/250	.18	.45 x .17 x .45	.54	.36	.24	.18	.15
0.22/5/250	.22	.45 x .19 x .45	.64	.43	.28	.21	.18

SPRAGUE Tantalum Capacitors

TYPE CSR13 SOLID ELECTROLYTE TUBULAR TANTALUM CAPACITORS TO MIL-C-39003/1A SPECIFICATIONS

Established reliability, solid tantalums meet satellite, missile, military equipment, computer and other complex equipment requirements for minimum failure. Meet MIL-C-39003 requirements in choice of 2%, 1% or 0.1% failure rate versions. Extensively tested and culled to meet highest environmental conditions such as high G shock, vibration, immersion, etc. (Full specifications on request.) **Temp. Range:** −55° C to +125° C. Supplied with insulating sleeve.



STOCK VALUES MIL-C-39003 (2% FAILURE RATE)

6 WVDC

Cap., µF	MIL Type Number	*
5.6	CSR13B565KL	A
6.8	CSR13B685KL†	A
47	CSR13B476KL†	B
56	CSR13B566KL	B
150	CSR13B157KL†	C
180	CSR13B187KL	C
270	CSR13B277KL	D
330	CSR13B337KL†	D

10 WVDC

Cap., µF	MIL Type Number	*
3.9	CSR13C395KL	A
4.7	CSR13C475KL†	A
27	CSR13C276KL	B
33	CSR13C336KL†	B
39	CSR13C396KL	B
82	CSR13C826KL	C
100	CSR13C107KL†	C
120	CSR13C127KL	C
180	CSR13C187KL	D
220	CSR13C227KL†	D

15 WVDC

Cap., µF	MIL Type Number	*
2.7	CSR13D275KL	A
3.3	CSR13D335KL†	A
18	CSR13D186KL	B
22	CSR13D226KL†	B
56	CSR13D566KL	C
68	CSR13D686KL†	C
120	CSR13D127KL	D
150	CSR13D157KL†	D

20 WVDC

Cap., µF	MIL Type Number	*
1.2	CSR13E125KL	A
1.5	CSR13E155KL†	A
1.8	CSR13E185KL	A
2.2	CSR13E225KL†	A
8.2	CSR13E825KL	B
10	CSR13E106KL†	B
12	CSR13E126KL	B
15	CSR13E156KL†	B
27	CSR13E276KL	C
33	CSR13E336KL†	C
39	CSR13E396KL	C

20 WVDC (CONT'D)

Cap., µF	MIL Type Number	*
47	CSR13E476KL†	C
56	CSR13E566KL	D
68	CSR13E686KL†	D
82	CSR13E826KL	D
100	CSR13E107KL†	D

35 WVDC

Cap., µF	MIL Type Number	*
5.6	CSR13F565KL	B
6.8	CSR13F685KL†	B
22	CSR13F226KL†	C
27	CSR13F276KL	D
33	CSR13F336KL†	D
39	CSR13F396KL	D
47	CSR13F476KL†	D

50 WVDC

Cap., µF	MIL Type Number	*
.0047	CSR13G472KL†	A
.0056	CSR13G562KL	A
.0068	CSR13G682KL†	A
.0082	CSR13G822KL	A
.01	CSR13G103KL†	A
.012	CSR13G123KL	A
.015	CSR13G153KL†	A
.018	CSR13G183KL	A
.022	CSR13G223KL†	A
.027	CSR13G273KL	A
.033	CSR13G333KL†	A
.039	CSR13G393KL	A
.047	CSR13G473KL†	A
.056	CSR13G563KL	A
.068	CSR13G683KL†	A
.082	CSR13G823KL	A
.1	CSR13G104KL†	A
.12	CSR13G124KL	A
.15	CSR13G154KL†	A
.18	CSR13G184KL	A
.22	CSR13G224KL†	A
.27	CSR13G274KL	A
.33	CSR13G334KL†	A
.39	CSR13G394KL	A
.47	CSR13G474KL†	A
.56	CSR13G564KL	A

50 WVDC (CONT'D)

Cap., µF	MIL Type Number	*
.68	CSR13G684KL†	A
.82	CSR13G824KL	A
1	CSR13G105KL†	A
1.2	CSR13G125KL	B
1.5	CSR13G155KL†	B
1.8	CSR13G185KL	B
2.2	CSR13G225KL†	B
2.7	CSR13G275KL	B
3.3	CSR13G335KL†	B
3.9	CSR13G395KL	B
4.7	CSR13G475KL†	B
5.6	CSR13G565KL	C
6.8	CSR13G685KL†	C
8.2	CSR13G825KL	C
10	CSR13G106KL†	C
12	CSR13G126KL	C
15	CSR13G156KL†	C
18	CSR13G186KL	C
22	CSR13G226KL†	D

75 WVDC

Cap., µF	MIL Type Number	*
.1	CSR13H104KL†	A
.12	CSR13H124KL	A
.15	CSR13H154KL†	A
.18	CSR13H184KL	A
.22	CSR13H224KL†	A
.27	CSR13H274KL	A
.33	CSR13H334KL†	A
.39	CSR13H394KL	A
.47	CSR13H474KL†	A
.56	CSR13H564KL	A
.68	CSR13H684KL†	A
.82	CSR13H824KL	B
1	CSR13H105KL†	B
1.2	CSR13H125KL	B
1.5	CSR13H155KL†	B
1.8	CSR13H185KL	B
2.2	CSR13H225KL†	B
2.7	CSR13H275KL	B
3.3	CSR13H335KL†	B
3.9	CSR13H395KL	B
4.7	CSR13H475KL†	C

75 WVDC (CONT'D)

Cap., µF	MIL Type Number	*
5.6	CSR13H565KL	C
6.8	CSR13H685KL†	C
8.2	CSR13H825KL	C
10	CSR13H106KL†	C
12	CSR13H126KL	D
15	CSR13H156KL†	D

100 WVDC

Cap., µF	MIL Type Number	*
.0047	CSR13J472KL†	A
.0056	CSR13J562KL	A
.0068	CSR13J682KL†	A
.0082	CSR13J822KL	A
.01	CSR13J103KL†	A
.012	CSR13J123KL	A
.015	CSR13J153KL†	A
.018	CSR13J183KL	A
.022	CSR13J223KL†	A
.027	CSR13J273KL	A
.033	CSR13J333KL†	A
.039	CSR13J393KL	A
.047	CSR13J473KL†	A
.056	CSR13J563KL	A
.068	CSR13J683KL†	A
.082	CSR13J823KL	A
.1	CSR13J104KL†	A
.12	CSR13J124KL	A
.15	CSR13J154KL†	A
.18	CSR13J184KL	A
.22	CSR13J224KL†	A
.27	CSR13J274KL	A
.33	CSR13J334KL†	A
.39	CSR13J394KL	A
.47	CSR13J474KL†	A
.56	CSR13J564KL	A
.68	CSR13J684KL†	B
.82	CSR13J824KL	B
1.0	CSR13J105KL†	B
1.2	CSR13J125KL	B
1.5	CSR13J155KL†	B
1.8	CSR13J185KL	B
2.2	CSR13J225KL†	B
2.7	CSR13J275KL	B

Tolerance: All units shown, ±10%. †±20% available; to order, change next to last letter to **M** (e.g., CSR13B685**M**L).

ORDERING AND PRICING INFORMATION

Above stock values are for 2% Failure Rate. **For 1% Failure Rate:** Change suffix L to **M** (e.g., CSR13B565K**M**); prices shown at right. **For 0.1% Failure Rate:** Change suffix L to **P** (CSR13B565K**P**), available in values 6 thru 50 WVDC only; prices as shown at right.

2% FAILURE RATE (L Suffix)

±10% Tolerance

WV DC	*	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
6 thru 35	A	$0.81	$0.57	$0.41	$0.33	$0.26
	B	.96	.68	.49	.39	.30
	C	2.92	2.05	1.47	1.18	.92
	D	5.38	3.78	2.71	2.17	1.69
50	A†	.94	.66	.47	.38	.30
	B	1.11	.78	.56	.45	.35
	C§	3.32	2.33	1.67	1.34	1.04
	D	6.13	4.30	3.08	2.47	1.92
75	A	2.02	1.42	1.02	.82	.64
	B	2.37	1.67	1.20	.96	.75
	C	5.34	3.75	2.69	2.16	1.68
	D	9.76	6.85	4.91	3.94	3.07
100	A	3.64	2.56	1.84	1.48	1.16
	B	4.35	3.06	2.20	1.77	1.38

±20% Tolerance

6 thru 35	A	$0.80	$0.56	$0.40	$0.32	$0.25
	B	.95	.67	.48	.38	.29
	C	2.90	2.03	1.45	1.16	.90
	D	5.35	3.75	2.68	2.14	1.66
50	A†	.93	.65	.46	.37	.29
	B	1.10	.77	.55	.44	.34
	C§	3.30	2.31	1.65	1.32	1.02
	D	6.10	4.27	3.05	2.44	1.89
75	A	2.00	1.40	1.00	.80	.62
	B	2.35	1.65	1.18	.94	.73
	C	5.30	3.71	2.65	2.12	1.64
	D	9.70	6.79	4.85	3.88	3.01
100	A	3.60	2.52	1.80	1.44	1.12
	B	4.30	3.01	2.15	1.72	1.33

1% FAILURE RATE (M Suffix)

WV DC	*	Range, µF	±10% Tolerance, Net Ea., Lots 1-24	25-49	50-99	100-499	500-999	±20% Tolerance, Net Ea., Lots 1-24	25-49	50-99	100-499	500-999
6 thru 35	A	1.2–6.8**	$0.84	$0.60	$0.44	$0.36	$0.29	$0.83	$0.59	$0.43	$0.35	$0.28
	B	5.6–56**	.99	.71	.52	.42	.33	.98	.70	.51	.41	.32
	C	22–180**	2.95	2.08	1.50	1.21	.95	2.93	2.06	1.48	1.19	.93
	D	27–330**	5.41	3.81	2.74	2.20	1.72	5.38	3.78	2.71	2.17	1.69
50	A	.033–1	.97	.69	.50	.41	.33	.96	.68	.49	.40	.32
	B	1.2–4.7	1.14	.81	.59	.48	.38	1.13	.80	.58	.47	.37
	C	5.6–18	3.35	2.36	1.70	1.37	1.07	3.33	2.34	1.68	1.35	1.05
	D	22	6.16	4.33	3.11	2.50	1.95	6.13	4.30	3.08	2.47	1.92
75	A	.1–.68	2.09	1.49	1.09	.89	.71	2.07	1.47	1.07	.87	.69
	B	.82–3.9	2.44	1.74	1.27	1.03	.82	2.42	1.72	1.25	1.01	.80
	C	4.7–10	5.41	3.82	2.76	2.23	1.75	5.37	3.78	2.72	2.19	1.71
	D	12, 15	9.83	6.92	4.98	4.01	3.14	9.77	6.86	4.92	3.95	3.08
100	A	.0047–.56	3.78	2.70	1.98	1.62	1.30	3.74	2.66	1.94	1.58	1.26
	B	.68–.27	4.49	3.20	2.34	1.91	1.52	4.44	3.15	2.29	1.86	1.47

0.1% FAILURE RATE (P Suffix)

Minimum item charge, $50.00. Orders accepted on a non-cancellable, non-returnable basis only.

6–20	A	1.2–6.8**	$ 1.68	$1.20	$0.88	$0.72	$0.58	$ 1.66	$1.18	$0.86	$0.70	$0.56
6–20	B	8.2–56**	1.98	1.42	1.04	.84	.66	1.96	1.40	1.02	.82	.64
6–15	C	56–180**	5.90	4.16	3.00	2.42	1.90	5.86	4.12	2.96	2.38	1.86
20	C	27–47	5.90	4.16	3.00	2.42	1.90	5.86	4.12	2.96	2.38	1.86
6–20	D	56–330	10.82	7.62	5.48	4.40	3.44	10.76	7.56	5.42	4.34	3.38
35	B	5.6, 6.8	2.28	1.62	1.18	.96	.76	2.26	1.60	1.16	.94	.74
	C	22	6.70	4.72	3.40	2.74	2.14	6.66	4.68	3.36	2.70	2.10
	D	27–47	12.32	8.66	6.22	5.00	3.90	12.26	8.60	6.16	4.94	3.84
50	A	.0047–1	4.18	2.98	2.18	1.78	1.42	4.14	2.94	2.14	1.74	1.38
	B	1.2–4.7	4.88	3.48	2.54	2.06	1.64	4.84	3.44	2.50	2.02	1.60
	C	5.6–18	10.82	7.64	5.52	4.46	3.50	10.74	7.56	5.44	4.38	3.42
	D	22	19.66	13.84	9.96	8.02	6.28	19.54	13.72	9.84	7.90	6.16

*Case Size: A, 0.135″ dia. x 0.286″ lg.; B, 0.185″ dia. x 0.474″ lg.; C, 0.289″ dia. x 0.686″ lg.; D, 0.351″ dia. x 0.786″ lg.; †In range .0047–.027 µF. ‡In range .033–1.0 µF. §In range 5.6–10 µF. ♯In range 12–18 µF. **Varies according to voltage; see tables of stock values, above.

SPRAGUE Tantalum Capacitors

TYPE CLR65 SINTERED-ANODE TANTALUM CAPACITORS TO MIL-C-39006

Available as hermetically sealed and non-hermetically sealed types. Designed to meet MIL-STD-790 specs. Rated for operation to 85° C (to 125° C with voltage derating). Come in four different failure rates: L = 2%; M = 1%; P = 0.1%; R = 0.01%. Hermetically-sealed types MIL-C-39006/9C are not available in "R" failure rate.

ELASTOMER-SEALED CAPACITORS TO MIL-C-39006/9B

Cap., µF	WV DC	Tol. ±%	MIL Number M39006/09- Failure Rate L	M	P	R	Size Code*	Price Code*
30	6	20	1621	1826	2652	2857	A	BET1
30	6	10	1622	1827	2653	2858	A	BET2
68	6	20	1624	1829	2655	2860	A	BET1
68	6	10	1625	1830	2656	2861	A	BET2
140	6	20	1627	1832	2658	2863	B	BET3
140	6	10	1628	1833	2659	2864	B	BET4
270	6	20	1630	1835	2661	2866	B	BET3
270	6	10	1631	1836	2662	2867	B	BET4
330	6	20	1633	1838	2664	2869	C	BET5
330	6	10	1634	1839	2665	2870	C	BET6
560	6	20	1636	1841	2667	2872	C	BET5
560	6	10	1637	1842	2668	2873	C	BET6
1200	6	20	1639	1844	2670	2875	D	BET7
1200	6	10	1640	1845	2671	2876	D	BET8
25	8	20	1641	1846	2672	2877	A	BET1
25	8	10	1642	1847	2673	2878	A	BET2
56	8	20	1644	1849	2675	2880	A	BET1
56	8	10	1645	1850	2676	2881	A	BET2
220	8	20	1647	1852	2678	2883	B	BET3
220	8	10	1648	1853	2679	2884	B	BET4
430	8	20	1650	1855	2681	2886	C	BET5
430	8	10	1651	1856	2682	2887	C	BET6
850	8	20	1653	1858	2684	2889	D	BET7
850	8	10	1654	1859	2685	2890	D	BET8
20	10	20	1655	1860	2686	2891	A	BET1
20	10	10	1656	1861	2687	2892	A	BET2
47	10	20	1658	1863	2689	2894	A	BET1
47	10	10	1659	1864	2690	2895	A	BET2
100	10	20	1661	1866	2692	2897	B	BET3
100	10	10	1662	1867	2693	2898	B	BET4
180	10	20	1664	1869	2695	2900	B	BET3
180	10	10	1665	1870	2696	2901	B	BET4
250	10	20	1667	1872	2698	2903	C	BET5
250	10	10	1668	1873	2699	2904	C	BET6
390	10	20	1670	1875	2701	2906	C	BET5
390	10	10	1671	1876	2702	2907	C	BET6
750	10	20	1673	1878	2704	2909	D	BET7
750	10	10	1674	1879	2705	2910	D	BET8
15	15	20	1675	1880	2706	2911	A	BET1
15	15	10	1676	1881	2707	2912	A	BET2
33	15	20	1678	1883	2709	2914	A	BET1
33	15	10	1679	1884	2710	2915	A	BET2
70	15	20	1681	1886	2712	2917	B	BET3
70	15	10	1682	1887	2713	2918	B	BET4
120	15	20	1684	1889	2715	2920	B	BET3
120	15	10	1685	1890	2716	2921	B	BET4
170	15	20	1687	1892	2718	2923	C	BET5
170	15	10	1688	1893	2719	2924	C	BET6
270	15	20	1690	1895	2721	2926	C	BET5
270	15	10	1691	1896	2722	2927	C	BET6
540	15	20	1693	1898	2724	2929	D	BET7
540	15	10	1694	1899	2725	2930	D	BET8
10	25	20	1695	1900	2726	2931	A	BET1
10	25	10	1696	1901	2727	2932	A	BET2
22	25	20	1698	1903	2729	2934	A	BET1
22	25	10	1699	1904	2730	2935	A	BET2
100	25	20	1701	1906	2732	2937	B	BET3
100	25	10	1702	1907	2733	2938	B	BET4
180	25	20	1704	1909	2735	2940	C	BET5
180	25	10	1705	1910	2736	2941	C	BET6
350	25	20	1707	1912	2738	2943	D	BET7
350	25	10	1708	1913	2739	2944	D	BET8
8	30	20	1709	1914	2740	2945	A	BET1
8	30	10	1710	1915	2741	2946	A	BET2
15	30	20	1712	1917	2743	2948	A	BET1
15	30	10	1713	1918	2744	2949	A	BET2
40	30	20	1715	1920	2746	2951	B	BET3
40	30	10	1716	1921	2747	2952	B	BET4
68	30	20	1718	1923	2749	2954	B	BET3
68	30	10	1719	1924	2750	2955	B	BET4
100	30	20	1721	1926	2752	2957	C	BET5
100	30	10	1722	1927	2753	2958	C	BET6
150	30	20	1724	1929	2755	2960	C	BET5
150	30	10	1725	1930	2756	2961	C	BET6
300	30	20	1727	1932	2758	2963	D	BET7
300	30	10	1728	1933	2759	2964	D	BET8
5	50	20	1729	1934	2760	2965	A	BET1
5	50	10	1730	1935	2761	2966	A	BET2
10	50	20	1732	1937	2763	2968	A	BET1
10	50	10	1733	1938	2764	2969	A	BET2
25	50	20	1735	1940	2766	2971	B	BET3
25	50	10	1736	1941	2767	2972	B	BET4
47	50	20	1738	1943	2769	2974	B	BET3
47	50	10	1739	1944	2770	2975	B	BET4
60	50	20	1741	1946	2772	2977	C	BET5
60	50	10	1742	1947	2773	2978	C	BET6
82	50	20	1744	1949	2775	2980	C	BET5
82	50	10	1745	1950	2776	2981	C	BET6
160	50	20	1747	1952	2778	2983	D	BET7
160	50	10	1748	1953	2779	2984	D	BET8
4	60	20	1749	1954	2780	2985	A	BET9
4	60	10	1750	1955	2781	2986	A	BET10
8.2	60	20	1752	1957	2783	2988	A	BET9
8.2	60	10	1753	1958	2784	2989	A	BET10
20	60	20	1755	1960	2786	2991	B	BET3
20	60	10	1756	1961	2787	2992	B	BET4
39	60	20	1758	1963	2789	2994	B	BET3
39	60	10	1759	1964	2790	2995	B	BET4
50	60	20	1761	1966	2792	2997	C	BET5
50	60	10	1762	1967	2793	2998	C	BET6
68	60	20	1764	1969	2795	3000	C	BET5
68	60	10	1765	1970	2796	3001	C	BET6
140	60	20	1767	1972	2798	3003	D	BET7
140	60	10	1768	1973	2799	3004	D	BET8
3.5	75	20	1769	1974	2800	3005	A	BET9
3.5	75	10	1770	1975	2801	3006	A	BET10
6.8	75	20	1772	1977	2803	3008	A	BET9
6.8	75	10	1773	1978	2804	3009	A	BET10
15	75	20	1775	1980	2806	3011	B	BET11
15	75	10	1776	1981	2807	3012	B	BET12
33	75	20	1778	1983	2809	3014	B	BET11
33	75	10	1779	1984	2810	3015	B	BET12
40	75	20	1781	1986	2812	3017	C	BET13
40	75	10	1782	1987	2813	3018	C	BET14
56	75	20	1784	1989	2815	3020	C	BET13
56	75	10	1785	1990	2816	3021	C	BET14
110	75	20	1787	1992	2818	3023	D	BET7
110	75	10	1788	1993	2819	3024	D	BET8
2.5	100	20	1789	1994	2820	3025	A	BET9
2.5	100	10	1790	1995	2821	3026	A	BET10
4.7	100	20	1792	1997	2823	3028	A	BET9
4.7	100	10	1793	1998	2824	3029	A	BET10
11	100	20	1795	2621	2826	3031	B	BET11
11	100	10	1796	2622	2827	3032	B	BET12
22	100	20	1798	2624	2829	3034	B	BET11
22	100	10	1799	2625	2830	3035	B	BET12
30	100	20	1801	2627	2832	3037	C	BET13
30	100	10	1802	2628	2833	3038	C	BET14
43	100	20	1804	2630	2835	3040	C	BET13
43	100	10	1805	2631	2836	3041	C	BET14
86	100	20	1807	2633	2838	3043	D	BET15
86	100	10	1808	2634	2839	3044	D	BET16
1.7	125	20	1809	2635	2840	3045	A	BET9
1.7	125	10	1810	2636	2841	3046	A	BET10
3.6	125	20	1812	2638	2843	3048	A	BET9
3.6	125	10	1813	2639	2844	3049	A	BET10
9	125	20	1815	2641	2846	3051	B	BET11
9	125	10	1816	2642	2847	3052	B	BET12
14	125	20	1818	2644	2849	3054	B	BET11
14	125	10	1819	2645	2850	3055	B	BET12
18	125	20	3267	3270	3273	3276	C	BET13
18	125	10	3268	3271	3274	3277	C	BET14
25	125	20	1821	2647	2852	3057	C	BET13
25	125	10	1822	2648	2853	3058	C	BET14
56	125	20	1824	2650	2855	3060	D	BET15
56	125	10	1825	2651	2856	3061	D	BET16

PRICES FOR ELASTOMER-SEALED CAPACITORS

$250.00 minimum item charge applies to all "R" failure rate items; **$50.00** minimum item charge applies to all other items.

* Code	Failure Rate—L Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—M Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—P Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—R Net Each, Lots of 1-49	50-99	100-499	500-999
BET1	$1.56	$1.27	$1.02	$0.88	$1.72	$1.40	$1.12	$0.97	$ 3.42	$ 2.78	$ 2.22	$ 1.92	$15.30	$ 7.01	$ 2.97	$ 2.65
BET2	1.72	1.41	1.12	.97	1.89	1.55	1.23	1.07	3.76	3.08	2.44	2.12	18.36	8.41	3.58	3.17
BET3	2.50	2.04	1.63	1.40	2.75	2.24	1.79	1.54	5.48	4.46	3.56	3.06	26.47	12.10	6.03	5.29
BET4	2.75	2.24	1.79	1.54	3.03	2.46	1.97	1.69	6.04	4.90	3.92	3.36	31.76	14.52	7.23	6.34
BET5	3.99	3.25	2.59	2.23	4.39	3.58	2.85	2.45	8.76	7.14	5.68	4.88	31.97	14.59	7.25	6.32
BET6	4.39	3.58	2.86	2.45	4.83	3.94	3.15	2.70	9.64	7.86	6.28	5.38	38.36	17.50	8.70	7.58
BET7	6.21	5.08	4.05	3.47	6.83	5.59	4.46	3.82	13.64	11.16	8.90	7.62	72.22	32.97	14.82	12.83
BET8	6.85	5.59	4.45	3.82	7.54	6.15	4.90	4.20	15.06	12.28	9.78	8.38	86.66	39.56	17.78	15.39
BET9	1.73	1.43	1.14	.98	1.90	1.57	1.25	1.08	3.78	3.12	2.48	2.14	15.30	7.01	2.97	2.65
BET10	1.91	1.56	1.25	1.07	2.10	1.72	1.38	1.18	4.18	3.42	2.74	2.34	18.36	8.41	3.58	3.17
BET11	2.91	2.37	1.89	1.63	3.20	2.61	2.08	1.79	6.38	5.20	4.14	3.56	26.47	12.10	6.03	5.29
BET12	3.21	2.62	2.09	1.79	3.53	2.88	2.30	1.97	7.04	5.74	4.58	3.92	31.76	14.52	7.23	6.34
BET13	4.80	3.91	3.12	2.69	5.28	4.30	3.43	2.96	10.54	8.58	6.84	5.90	31.97	14.59	7.25	6.32
BET14	5.29	4.31	3.43	2.93	5.82	4.74	3.77	3.22	11.62	9.46	7.52	6.42	38.36	17.50	8.70	7.58
BET15	7.53	6.14	4.89	4.19	8.28	6.75	5.38	4.61	16.54	13.48	10.74	9.20	72.22	32.97	14.82	12.83
BET16	8.28	6.75	5.38	4.61	9.11	7.43	5.92	5.07	18.20	14.84	11.82	10.12	86.66	39.56	17.78	15.39

†500–999 prices on request.

*SEE LAST PAGE OF LISTING FOR CASE SIZES

TYPE CLR65 TANTALUM CAPACITORS (CONT'D)

HERMETICALLY-SEALED CAPACITORS TO MIL-C-39006/9B

Cap., µF	WV DC	Tol. ± %	MIL Number M39006/09- Failure Rate L	M	P	R	Size Code*	Price Code*
30	6	20	4001	4206	4411	4616	A	BGT1
30	6	10	4002	4207	4412	4617	A	BGT2
68	6	20	4004	4209	4414	4619	A	BGT1
68	6	10	4005	4210	4415	4620	A	BGT2
140	6	20	4007	4212	4417	4622	B	BGT3
140	6	10	4008	4213	4418	4623	B	BGT4
270	6	20	4010	4215	4420	4625	B	BGT3
270	6	10	4011	4216	4421	4626	B	BGT4
330	6	20	4013	4218	4423	4628	C	BGT5
330	6	10	4014	4219	4424	4629	C	BGT6
560	6	20	4016	4221	4426	4631	C	BGT5
560	6	10	4017	4222	4427	4632	C	BGT6
1200	6	20	4019	4224	4429	4634	E	BGT7
1200	6	10	4020	4225	4430	4635	E	BGT8
25	8	20	4021	4226	4431	4636	A	BGT1
25	8	10	4022	4227	4432	4637	A	BGT2
56	8	20	4024	4229	4434	4639	A	BGT1
56	8	10	4025	4230	4435	4640	A	BGT2
220	8	20	4027	4232	4437	4642	B	BGT3
220	8	10	4028	4233	4438	4643	B	BGT4
430	8	20	4030	4235	4440	4645	C	BGT5
430	8	10	4031	4236	4441	4646	C	BGT6
850	8	20	4033	4238	4443	4648	E	BGT7
850	8	10	4034	4239	4444	4649	E	BGT8
20	10	20	4035	4240	4445	4650	A	BGT1
20	10	10	4036	4241	4446	4651	A	BGT2
47	10	20	4038	4243	4448	4653	A	BGT1
47	10	10	4039	4244	4449	4654	A	BGT2
100	10	20	4041	4246	4451	4656	B	BGT3
100	10	10	4042	4247	4452	4657	B	BGT4
180	10	20	4044	4249	4454	4659	B	BGT3
180	10	10	4045	4250	4455	4660	B	BGT4
250	10	20	4047	4252	4457	4662	C	BGT5
250	10	10	4048	4253	4458	4663	C	BGT6
390	10	20	4050	4255	4460	4665	C	BGT5
390	10	10	4051	4256	4461	4666	C	BGT6
750	10	20	4053	4258	4463	4668	E	BGT7
750	10	10	4054	4259	4464	4669	E	BGT8
15	15	20	4055	4260	4465	4670	A	BGT1
15	15	10	4056	4261	4466	4671	A	BGT2
33	15	20	4058	4263	4468	4673	A	BGT1
33	15	10	4059	4264	4469	4674	A	BGT2
70	15	20	4061	4266	4471	4676	B	BGT3
70	15	10	4062	4267	4472	4677	B	BGT4
120	15	20	4064	4269	4474	4679	B	BGT3
120	15	10	4065	4270	4475	4680	B	BGT4
170	15	20	4067	4272	4477	4682	C	BGT5
170	15	10	4068	4273	4478	4683	C	BGT6
270	15	20	4070	4275	4480	4685	C	BGT5
270	15	10	4071	4276	4481	4786	C	BGT6
540	15	20	4073	4278	4483	4688	E	BGT7
540	15	10	4074	4279	4484	4689	E	BGT8
10	25	20	4075	4280	4485	4690	A	BGT1
10	25	10	4076	4281	4486	4691	A	BGT2
22	25	20	4078	4283	4488	4693	A	BGT1
22	25	10	4079	4284	4489	4694	A	BGT2
100	25	20	4081	4286	4491	4696	B	BGT3
100	25	10	4082	4287	4492	4697	B	BGT4
180	25	20	4084	4289	4494	4699	C	BGT5
180	25	10	4085	4290	4495	4700	C	BGT6
350	25	20	4087	4292	4497	4702	E	BGT7
350	25	10	4088	4293	4496	4703	E	BGT8
8	30	20	4089	4294	4499	4704	A	BGT1
8	30	10	4090	4295	4500	4705	A	BGT2
15	30	20	4092	4297	4502	4707	A	BGT1
15	30	10	4093	4298	4503	4708	A	BGT2
40	30	20	4095	4300	4505	4710	B	BGT3
40	30	10	4096	4301	4506	4711	B	BGT4
68	30	20	4098	4303	4508	4713	B	BGT3
68	30	10	4099	4304	4509	4714	B	BGT4
100	30	20	4101	4306	4511	4716	C	BGT5
100	30	10	4102	4307	4512	4717	C	BGT6
150	30	20	4104	4309	4514	4719	C	BGT5
150	30	10	4105	4310	4515	4720	C	BGT6
300	30	20	4107	4312	4517	4722	E	BGT7
300	30	10	4108	4313	4518	4723	E	BGT8
5	50	20	4109	4314	4519	4724	A	BGT1
5	50	10	4110	4315	4520	4725	A	BGT2
10	50	20	4112	4317	4522	4727	A	BGT1
10	50	10	4113	4318	4523	4728	A	BGT2
25	50	20	4115	4320	4525	4730	B	BGT3
25	50	10	4116	4321	4526	4731	B	BGT4
47	50	20	4118	4323	4528	4733	B	BGT3
47	50	10	4119	4324	4529	4734	B	BGT4
60	50	20	4121	4326	4531	4736	C	BGT5
60	50	10	4122	4327	4532	4737	C	BGT6
82	50	20	4124	4329	4534	4739	C	BGT5
82	50	10	4125	4330	4535	4740	C	BGT6
160	50	20	4127	4332	4537	4742	E	BGT7
160	50	10	4128	4333	4538	4743	E	BGT8
4	60	20	4129	4334	4539	4744	A	BGT9
4	60	10	4130	4335	4540	4745	A	BGT10
8.2	60	20	4132	4337	4542	4747	A	BGT9
8.2	60	10	4133	4338	4543	4748	A	BGT10
20	60	20	4135	4340	4545	4750	B	BGT3
20	60	10	4136	4341	4546	4751	B	BGT4
39	60	20	4138	4343	4548	4753	B	BGT3
39	60	10	4139	4344	4549	4754	B	BGT4
50	60	20	4141	4346	4551	4756	C	BGT5
50	60	10	4142	4347	4552	4757	C	BGT6
68	60	20	4144	4349	4554	4759	C	BGT5
68	60	10	4145	4350	4555	4760	C	BGT6
140	60	20	4147	4352	4557	4762	E	BGT7
140	60	10	4148	4353	4558	4763	E	BGT8
3.5	75	20	4149	4354	4559	4764	A	BGT9
3.5	75	10	4150	4355	4560	4765	A	BGT10
6.8	75	20	4152	4357	4562	4767	A	BGT9
6.8	75	10	4153	4358	4563	4768	A	BGT10
15	75	20	4155	4360	4565	4770	B	BGT11
15	75	10	4156	4361	4566	4771	B	BGT12
33	75	20	4158	4363	4568	4773	B	BGT11
33	75	10	4159	4364	4569	4774	B	BGT12
40	75	20	4161	4366	4571	4776	C	BGT13
40	75	10	4162	4367	4572	4777	C	BGT14
56	75	20	4164	4369	4574	4779	C	BGT13
56	75	10	4165	4370	4575	4780	C	BGT14
110	75	20	4167	4372	4577	4782	E	BGT7
110	75	10	4168	4373	4578	4783	E	BGT8
2.5	100	20	4169	4374	4579	4784	A	BGT9
2.5	100	10	4170	4375	4580	4785	A	BGT10
4.7	100	20	4172	4377	4582	4787	A	BGT9
4.7	100	10	4173	4378	4583	4788	A	BGT10
11	100	20	4175	4380	4585	4790	B	BGT11
11	100	10	4176	4381	4586	4791	B	BGT12
22	100	20	4178	4383	4588	4793	B	BGT11
22	100	10	4179	4384	4589	4794	B	BGT12
30	100	20	4181	4386	4591	4796	C	BGT13
30	100	10	4182	4387	4592	4797	C	BGT14
43	100	20	4184	4389	4594	4799	C	BGT13
43	100	10	4185	4390	4595	4800	C	BGT14
86	100	20	4187	4392	4597	4802	E	BGT15
86	100	10	4188	4393	4598	4803	E	BGT16
1.7	125	20	4189	4394	4599	4804	A	BGT9
1.7	125	10	4190	4395	4600	4805	A	BGT10
3.6	125	20	4192	4397	4602	4807	A	BGT9
3.6	125	10	4193	4398	4603	4808	A	BGT10
9	125	20	4195	4400	4605	4810	B	BGT11
9	125	10	4196	4401	4606	4811	B	BGT12
14	125	20	4198	4403	4608	4813	B	BGT11
14	125	10	4199	4404	4609	4814	B	BGT12
18	125	20	5026	5029	5032	5035	C	BGT13
18	125	10	5027	5030	5033	5036	C	BGT14
25	125	20	4201	4406	4611	4816	C	BGT13
25	125	10	4202	4407	4612	4817	C	BGT14
56	125	20	4204	4409	4614	4819	E	BGT15
56	125	10	4205	4410	4615	4820	E	BGT16

PRICING FOR HERMETICALLY-SEALED CAPACITORS TO MIL-C-39006/9B

$250.00 min. item charge applies to all "R" failure rate items; **$50.00** min. item charge applies to all other items. For ±5% tolerance, double the price shown for ±20% tolerance.

* Code	Failure Rate—L Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—M Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—P Net Each, Lots of† 1-24	25-49	50-99	100-499	Failure Rate—R Net Each, Lots of 1-49	50-99	100-499	500-999
BGT1	$ 2.13	$1.74	$1.39	$1.19	$ 2.34	$ 1.91	$1.53	$1.31	$ 3.42	$ 2.78	$ 2.22	$ 1.92	$33.48	$16.75	$ 7.19	$ 6.24
BGT2	2.34	1.91	1.53	1.31	2.57	2.10	1.68	1.44	3.76	3.06	2.44	2.11	40.17	20.10	8.62	7.49
BGT3	3.42	2.79	2.23	1.91	3.77	3.08	2.45	2.11	5.48	4.46	3.56	3.06	46.22	23.12	9.92	8.61
BGT4	3.77	3.08	2.45	2.11	4.15	3.39	2.70	2.32	6.03	4.91	3.92	3.37	55.46	27.74	11.90	10.32
BGT5	5.45	4.44	3.54	3.04	5.99	4.88	3.89	3.34	8.76	7.14	5.68	4.88	65.12	32.57	13.97	12.12
BGT6	5.99	4.88	3.89	3.34	6.59	5.37	4.28	3.67	9.64	7.85	6.25	5.37	78.14	39.08	16.76	14.53
BGT7	8.50	6.93	5.52	4.73	9.34	7.61	6.06	5.20	13.68	11.16	8.90	7.62	107.12	53.57	22.97	19.92
BGT8	9.34	7.61	6.06	5.20	10.27	8.37	6.67	5.72	15.05	12.28	9.79	8.38	128.54	64.28	25.56	23.89
BGT9	2.37	1.93	1.54	1.33	2.61	2.13	1.70	1.46	3.78	3.12	2.48	2.14	33.48	16.75	7.19	6.24
BGT10	2.61	2.13	1.70	1.46	2.87	2.34	1.87	1.61	4.16	3.43	2.73	2.35	40.17	20.10	8.62	7.49
BGT11	3.96	3.23	2.58	2.21	4.37	3.56	2.84	2.44	6.38	5.20	4.14	3.56	46.22	23.12	9.92	8.61
BGT12	4.37	3.56	2.84	2.44	4.81	3.92	3.12	2.68	7.02	5.72	4.55	3.92	55.46	27.74	11.90	10.32
BGT13	6.53	5.32	4.24	3.64	7.18	5.85	4.66	4.00	10.54	8.58	6.84	5.90	65.12	32.57	13.97	12.12
BGT14	7.18	5.85	4.66	4.00	7.90	6.44	5.13	4.40	11.59	9.44	7.52	6.49	78.14	39.08	16.76	14.53
BGT15	10.20	8.31	6.62	5.68	11.23	9.15	7.28	6.25	16.54	13.48	10.74	9.20	107.12	53.57	22.97	19.92
BGT16	11.23	9.15	7.28	6.25	12.35	10.07	8.01	6.88	18.19	14.83	11.81	10.12	128.54	64.28	25.56	23.89

†500–999 prices on request.

*SEE FOLLOWING PAGE FOR CASE SIZES

TYPE CLR65 TANTALUM CAPACITORS (CONT'D)

HERMETICALLY-SEALED CAPACITORS TO MIL-C-39006/09C

Cap., μF	WV DC	Tol. ± %	MIL Number M39006/09- Failure Rate L (2%)	M (1%)	P (0.1%)	Size Code*	Price Code*
30	6	20	6001	6206	6411	A	CGT1
30	6	10	6002	6207	6412	A	CGT2
68	6	20	6004	6209	6414	A	CGT1
68	6	10	6005	6210	6415	A	CGT2
140	6	20	6007	6212	6417	B	CGT3
140	6	10	6008	6213	6418	B	CGT4
270	6	20	6010	6215	6420	B	CGT3
270	6	10	6011	6216	6421	B	CGT4
330	6	20	6013	6218	6423	C	CGT5
330	6	10	6014	6219	6424	C	CGT6
560	6	20	6016	6221	6426	C	CGT5
560	6	10	6017	6222	6427	C	CGT6
1200	6	20	6019	6224	6429	E	CGT7
1200	6	10	6020	6225	6430	E	CGT8
25	8	20	6021	6226	6431	A	CGT1
25	8	10	6022	6227	6432	A	CGT2
56	8	20	6024	6229	6434	A	CGT1
56	8	10	6025	6230	6435	A	CGT2
220	8	20	6027	6232	6437	B	CGT3
220	8	10	6028	6233	6438	B	CGT4
430	8	20	6030	6235	6440	C	CGT5
430	8	10	6031	6236	6441	C	CGT6
850	8	20	6033	6238	6443	E	CGT7
850	8	10	6034	6239	6444	E	CGT8
20	10	20	6035	6240	6445	A	CGT1
20	10	10	6036	6241	6446	A	CGT2
47	10	20	6038	6243	6448	A	CGT1
47	10	10	6039	6244	6449	A	CGT2
100	10	20	6041	6246	6451	B	CGT3
100	10	10	6042	6247	6452	B	CGT4
180	10	20	6044	6249	6454	B	CGT3
180	10	10	6045	6250	6455	B	CGT4
250	10	20	6047	6252	6457	C	CGT5
250	10	10	6048	6253	6458	C	CGT6
390	10	20	6050	6255	6460	C	CGT5
390	10	10	6051	6256	6461	C	CGT6
750	10	20	6053	6258	6463	E	CGT7
750	10	10	6054	6259	6464	E	CGT8
15	15	20	6055	6260	6465	A	CGT1
15	15	10	6056	6261	6466	A	CGT2
33	15	20	6058	6263	6468	A	CGT1
33	15	10	6059	6264	6469	A	CGT2
70	15	20	6061	6266	6471	B	CGT3
70	15	10	6062	6267	6472	B	CGT4
120	15	20	6064	6269	6474	B	CGT3
120	15	10	6065	6270	6475	B	CGT4
170	15	20	6067	6272	6477	C	CGT5
170	15	10	6068	6273	6478	C	CGT6
270	15	20	6070	6275	6480	C	CGT5
270	15	10	6071	6276	6481	C	CGT6
540	15	20	6073	6278	6483	E	CGT7
540	15	10	6074	6279	6484	E	CGT8
10	25	20	6075	6280	6485	A	CGT1
10	25	10	6076	6281	6486	A	CGT2
22	25	20	6078	6283	6488	A	CGT1
22	25	10	6079	6284	6489	A	CGT2
100	25	20	6081	6286	6491	B	CGT3
100	25	10	6082	6287	6492	B	CGT4
180	25	20	6084	6289	6494	C	CGT5
180	25	10	6085	6290	6495	C	CGT6
350	25	20	6087	6292	6497	E	CGT7
350	25	10	6088	6293	6498	E	CGT8
8	30	20	6089	6294	6499	A	CGT1
8	30	10	6090	6295	6500	A	CGT2
15	30	20	6092	6297	6502	A	CGT1
15	30	10	6093	6298	6503	A	CGT2
40	30	20	6095	6300	6505	B	CGT3
40	30	10	6096	6301	6506	B	CGT4
68	30	20	6098	6303	6508	B	CGT3
68	30	10	6099	6304	6509	B	CGT4
100	30	20	6101	6306	6511	C	CGT5
100	30	10	6102	6307	6512	C	CGT6
150	30	20	6104	6309	6514	C	CGT5
150	30	10	6105	6310	6515	C	CGT6
300	30	20	6107	6312	6517	E	CGT7
300	30	10	6108	6313	6518	E	CGT8
5	50	20	6109	6314	6519	A	CGT1
5	50	10	6110	6315	6520	A	CGT2
10	50	20	6112	6317	6522	A	CGT1
10	50	10	6113	6318	6523	A	CGT2
25	50	20	6115	6320	6525	B	CGT3
25	50	10	6116	6321	6526	B	CGT4
47	50	20	6118	6323	6528	B	CGT3
47	50	10	6119	6324	6529	B	CGT4
60	50	20	6121	6326	6531	C	CGT5
60	50	10	6122	6327	6532	C	CGT6
82	50	20	6124	6329	6534	C	CGT5
82	50	10	6125	6330	6535	C	CGT6
160	50	20	6127	6332	6537	E	CGT7
160	50	10	6128	6333	6538	E	CGT8
4	60	20	6129	6334	6539	A	CGT9
4	60	10	6130	6335	6540	A	CGT10
8.2	60	20	6132	6337	6542	A	CGT9
8.2	60	10	6133	6338	6543	A	CGT10
20	60	20	6135	6340	6545	B	CGT3
20	60	10	6136	6341	6546	B	CGT4
39	60	20	6138	6343	6548	B	CGT3
39	60	10	6139	6344	6549	B	CGT4
50	60	20	6141	6346	6551	C	CGT5
50	60	10	6142	6347	6552	C	CGT6
68	60	20	6144	6349	6554	C	CGT5
68	60	10	6145	6350	6555	C	CGT6
140	60	20	6147	6352	6557	E	CGT7
140	60	10	6148	6353	6558	E	CGT8
3.5	75	20	6149	6354	6559	A	CGT9
3.5	75	10	6150	6355	6560	A	CGT10
6.8	75	20	6152	6357	6562	A	CGT9
6.8	75	10	6153	6358	6563	A	CGT10
15	75	20	6155	6360	6565	B	CGT11
15	75	10	6156	6361	6566	B	CGT12
33	75	20	6158	6363	6568	B	CGT11
33	75	10	6159	6364	6569	B	CGT12
40	75	20	6161	6366	6571	C	CGT13
40	75	10	6162	6367	6572	C	CGT14
56	75	20	6164	6369	6574	C	CGT13
56	75	10	6165	6370	6575	C	CGT14
110	75	20	6167	6372	6577	E	CGT7
110	75	10	6168	6373	6578	E	CGT8
2.5	100	20	6169	6374	6579	A	CGT9
2.5	100	10	6170	6375	6580	A	CGT10
4.7	100	20	6172	6377	6582	A	CGT9
4.7	100	10	6173	6378	6583	A	CGT10
11	100	20	6175	6380	6585	B	CGT11
11	100	10	6176	6381	6586	B	CGT12
22	100	20	6178	6383	6588	B	CGT11
22	100	10	6179	6384	6589	B	CGT12
30	100	20	6181	6386	6591	C	CGT13
30	100	10	6182	6387	6592	C	CGT14
43	100	20	6184	6389	6594	C	CGT13
43	100	10	6185	6390	6595	C	CGT14
86	100	20	6187	6392	6597	E	CGT15
86	100	10	6188	6393	6598	E	CGT16
1.7	125	20	6189	6394	6599	A	CGT9
1.7	125	10	6190	6395	6600	A	CGT10
3.6	125	20	6192	6397	6602	A	CGT9
3.6	125	10	6193	6398	6603	A	CGT10
9	125	20	6195	6400	6605	B	CGT11
9	125	10	6196	6401	6606	B	CGT12
14	125	20	6198	6403	6608	B	CGT11
14	125	10	6199	6404	6609	B	CGT12
18	125	20	6201	6406	6611	C	CGT13
18	125	10	6202	6407	6612	C	CGT14
25	125	20	6204	6409	6614	C	CGT13
25	125	10	6205	6410	6615	C	CGT14
56	125	20	7027	7030	7033	E	CGT15
56	125	10	7028	7031	7034	E	CGT16

PRICES FOR HERMETICALLY-SEALED CAPACITORS TO MIL-C-39006/09C

* Code	Failure Rate—L Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	Failure Rate—M Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	Failure Rate—P Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
CGT1	$ 3.12	$ 2.54	$2.02	$1.74	$1.51	$ 3.44	$ 2.81	$ 2.23	$1.91	$1.66	$ 6.86	$ 5.60	$ 4.44	$ 3.80	$ 3.30
CGT2	3.44	2.81	2.23	1.91	1.66	3.78	3.09	2.45	2.10	1.83	7.55	6.16	4.88	4.18	3.63
CGT3	4.49	3.65	2.90	2.50	2.16	4.93	4.02	3.20	2.75	2.88	9.84	8.02	6.38	5.48	4.73
CGT4	4.93	4.02	3.20	2.75	2.38	5.42	4.42	3.52	3.03	2.61	10.82	8.82	7.02	6.03	5.20
CGT5	7.16	5.83	4.64	3.98	3.45	7.88	6.41	5.10	4.38	3.80	15.74	12.80	10.18	8.74	7.57
CGT6	7.88	6.41	5.10	4.38	3.80	8.67	7.05	5.61	4.82	4.17	17.31	14.08	11.20	9.61	8.32
CGT7	13.54	11.03	8.78	7.52	6.53	14.91	12.14	9.67	8.28	7.18	29.80	24.26	19.32	16.54	14.33
CGT8	14.91	12.14	9.67	8.28	7.18	16.40	13.35	10.64	9.11	7.89	32.78	26.69	21.25	18.19	15.76
CGT9	3.27	2.66	2.12	1.82	1.57	3.60	2.93	2.33	2.00	1.73	7.18	5.84	4.64	3.98	3.43
CGT10	3.60	2.93	2.33	2.00	1.73	3.96	3.22	2.56	2.20	1.90	7.90	6.42	5.10	4.38	3.77
CGT11	5.20	4.24	3.37	2.89	2.51	5.73	4.68	3.72	3.19	2.76	11.44	9.34	7.42	6.36	5.49
CGT12	5.73	4.68	3.72	3.19	2.76	6.30	5.15	4.09	3.51	3.03	12.58	10.27	8.16	7.00	6.03
CGT13	8.61	7.02	5.59	4.79	4.79	9.47	7.72	6.14	5.27	4.56	18.92	15.42	12.26	10.52	9.10
CGT14	9.47	7.72	6.14	5.27	4.56	10.42	8.49	6.75	5.80	5.02	20.81	16.96	13.49	11.57	10.01
CGT15	13.54	11.03	8.78	7.52	6.53	14.91	12.14	9.67	8.28	7.18	29.80	24.26	19.32	16.54	14.33
CGT16	14.91	12.14	9.67	8.28	7.18	16.40	13.35	10.64	9.11	7.89	32.78	26.69	21.25	18.19	15.76

*CASE SIZES

Code	Diameter	Length
A	0.188″	0.453″
B	0.281″	0.641″
C	0.375″	0.766″
D	0.375″	1.062″
E	0.375″	1.250″

SPRAGUE Tantalum Capacitors

TYPE 150D SOLID ELECTROLYTE TANTALEX® CAPACITORS

True miniaturization with characteristics previously unobtainable in electrolytics. Solid electrolyte cannot leak or corrode; hermetically sealed. **Temperature Range:** 85° C without derating; to 125° C with derating. **Ordering Information:** Select capacitance and read across chart to voltage desired. Suffix on number (A, B, R or S) refers to size; find this key and your capacitance in the price chart, at bottom of page.

TYPE 150D ±10% TOLERANCE CAPACITANCE VALUES AVAILABLE

Cap., μF	Sprague Prefix†	Suffix for WVDC of: 6	10	15	20	35	50	60	75	100	125
.0047	150D472X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.0056	150D562X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.0068	150D682X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.0082	150D822X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.01	150D103X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.012	150D123X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.015	150D153X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.018	150D183X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.022	150D223X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.027	150D273X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.033	150D333X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.039	150D393X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.047	150D473X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.056	150D563X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.068	150D683X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.082	150D823X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.1	150D104X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.12	150D124X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.15	150D154X	.....	.....	.....	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.18	150D184X	.....	.....	.....	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.22	150D224X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.27	150D274X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.33	150D334X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.39	150D394X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.47	150D474X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.56	150D564X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100B
.68	150D684X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100B*	9100B*
.82	150D824X	9006A	9010A	9015A	9020A	9035A	9050A	9060B	9075B	9100B	9100B
1.0	150D105X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060B*	9075B*	9100B*	9100B*
1.2	150D125X	9006A	9010A	9015A	9020A	9035B	9050B	9060B	9075B	9100B	9100B
1.5	150D155X	9006A*	9010A*	9015A*	9020A*	9035B*	9050B*	9060B*	9075B*	9100B*	9100B*
1.8	150D185X	9006A	9010A	9015A	9020A	9035B	9050B	9060B	9075B	9100B	9100B
2.2	150D225X	9006A*	9010A*	9015A*	9020A*	9035B*	9050B*	9060B*	9075B*	9100B*	9100B*
2.7	150D275X	9006A	9010A	9015A	9020B	9035B	9050B	9060B	9075B	9100B	.....
3.3	150D335X	9006A*	9010A*	9015A*	9020B*	9035B*	9050B*	9060B*	9075B*	9100R*	.....
3.9	150D395X	9006A	9010A	9015B	9020B	9035B	9050B	9060B	9075B	9100R	.....
4.7	150D475X	9006A*	9010A*	9015B*	9020B*	9035B*	9050B*	9060R*	9075R*	9100R*	.....
5.6	150D565X	9006A	9010B	9015B	9020B	9035B	9050R	9060R	9075R	9100R	.....
6.8	150D685X	9006A*	9010B*	9015B*	9020B*	9035B*	9050R*	9060R*	9075R*	9100R*	.....
8.2	150D825X	9006B	9010B	9015B	9020B	9035R	9050R	9060R	9075R	.....	.....
10	150D106X	9006B*	9010B*	9015B*	9020B*	9035R*	9050R*	9060R*	9075R*	.....	.....
12	150D126X	9006B	9010B	9015B	9020B	9035R	9050R	9060S	9075S	.....	.....
15	150D156X	9006B*	9010B*	9015B*	9020B*	9035R*	9050R*	9060S*	9075S*	.....	.....
18	150D186X	9006B	9010B	9015B	9020R	9035R	9050R	9060S	.....	.....	.....
22	150D226X	9006B*	9010B*	9015B*	9020R*	9035R*	9050S*	9060S*	.....	.....	.....
27	150D276X	9006B	9010B	9015R	9020R	9035S	.....	.....	.....	.....	.....
33	150D336X	9006B*	9010B*	9015R*	9020R*	9035S*	.....	.....	.....	.....	.....
39	150D396X	9006B	9010B	9015R	9020R	9035S	.....	.....	.....	.....	.....
40	150D406X	.....	9010B*	.....	.....	.....	.....	.....	.....	.....	.....
47	150D476X	9006B*	9010R*	9015R*	9020R*	9035S*	.....	.....	.....	.....	.....
56	150D566X	9006B	9010R	9015R	9020S	.....	.....	.....	.....	.....	.....
60	150D606X	9006B*	.....	.....	.....	.....	.....	.....	.....	.....	.....
68	150D686X	9006R*	9010R*	9015R*	9020S*	.....	.....	.....	.....	.....	.....
82	150D826X	9006R	9010R	9015S	9020S	.....	.....	.....	.....	.....	.....
100	150D107X	9006R*	9010R*	9015S*	9020S*	.....	.....	.....	.....	.....	.....
120	150D127X	9006R*	9010R*	9015S	.....	.....	.....	.....	.....	.....	.....
150	150D157X	9006R*	9010S*	9015S*	.....	.....	.....	.....	.....	.....	.....
180	150D187X	9006R*	9010S	.....	.....	.....	.....	.....	.....	.....	.....
220	150D227X	9006S*	9010S*	.....	.....	.....	.....	.....	.....	.....	.....
270	150D277X	9006S*	.....	.....	.....	.....	.....	.....	.....	.....	.....
330	150D337X	9006S*	.....	.....	.....	.....	.....	.....	.....	.....	.....

†PRICE CHART AND ORDERING INFORMATION FOR TYPE 150D CAPACITORS

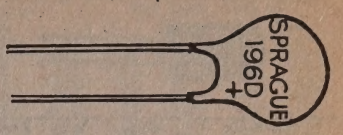
When ordering, show full number (as above for ±10% tol.) for value desired (e.g., 150D224X**9006A**). Items noted (*) available in ±20% tol.; to order, change first digit in suffix to **0** (e.g., 150D224X**0**006A). For ±5% tol., for 6 to 50 volts double ±20% tol. unit prices, for 60 to 125 volts triple ±20% tol. unit prices; to order, change first digit in suffix to **5** (e.g., 150D224X**5**006A). For bare metal case (size as listed below), add final digit **0** (150D224X9006A**0**). For plastic film sleeve (add .010" dia. x .036" lg. for all units), use final digit **2** (150D224X9006A**2**) and add **1c** to prices.

WV DC	Case Size	Size, In. Dia. x Lgth.	Cap. Range μF	±10% Tolerance (X9), Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	±20% Tolerance (X0), Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
6, 10, 15 or 20	A	.125 x .250	.0047–.027†	$0.81	$0.57	$0.41	$0.33	$0.26	$0.80	$0.56	$0.40	$0.32	$0.25
			.033–6.8†	.81	.57	.41	.33	.26	.80	.56	.40	.32	.25
	B	.175 x .438	2.7–60†	.96	.68	.49	.39	.30	.95	.67	.48	.38	.29
	R	.279 x .650	18–180†	2.92	2.05	1.47	1.18	.92	2.90	2.03	1.45	1.16	.90
	S	.341 x .750	56–330†	5.38	3.78	2.71	2.17	1.69	5.35	3.75	2.68	2.14	1.66
35	A	.125 x .250	.0047–.027	.81	.57	.41	.33	.26	.80	.56	.40	.32	.25
			.033–1.0	.81	.57	.41	.33	.26	.80	.56	.40	.32	.25
	B	.175 x .438	1.2–6.8	.96	.68	.49	.39	.30	.95	.67	.48	.38	.29
	R	.279 x .650	8.2–22	2.92	2.05	1.47	1.18	.92	2.90	2.03	1.45	1.16	.90
	S	.341 x .750	27–47	5.38	3.78	2.71	2.17	1.69	5.35	3.75	2.68	2.14	1.66
50	A	.125 x .250	.0047–.027	.94	.66	.47	.38	.30	.93	.65	.46	.37	.29
			.033–1.0	.94	.66	.47	.38	.30	.93	.65	.46	.37	.29
	B	.175 x .438	1.2–4.7	1.11	.78	.56	.45	.35	1.10	.77	.55	.44	.34
	R	.279 x .650	5.6–10	3.32	2.33	1.67	1.34	1.04	3.30	2.31	1.65	1.32	1.02
			12–18	3.32	2.33	1.67	1.34	1.04	3.30	2.31	1.65	1.32	1.02
	S	.341 x .750	22	6.13	4.30	3.08	2.47	1.92	6.10	4.27	3.05	2.44	1.89
60 or 75	A	.125 x .250	.0047–.68	2.02	1.42	1.02	.82	.64	2.00	1.40	1.00	.80	.62
	B	.175 x .438	.82–3.9	2.37	1.67	1.20	.96	.75	2.35	1.65	1.18	.94	.73
	R	.279 x .650	4.7–10	5.34	3.75	2.69	2.16	1.68	5.30	3.71	2.65	2.12	1.64
	S	.341 x .750	12–22‡	9.76	6.85	4.91	3.94	3.07	9.70	6.79	4.85	3.88	3.01
100	A	.125 x .250	.0047–.56	3.64	2.56	1.84	1.48	1.16	3.60	2.52	1.80	1.44	1.12
	B	.175 x .438	.68–1.7	4.35	3.06	2.20	1.77	1.38	4.30	3.01	2.15	1.72	1.33
	R	.279 x .650	3.3–6.8	9.00	6.33	4.55	3.66	2.88	8.90	6.23	4.45	3.56	2.76
125	A	.125 x .250	.0047–.47	4.70	3.35	2.45	2.00	1.60	4.50	3.15	2.25	1.80	1.40
	B	.175 x .438	.56–2.2	5.05	3.60	2.63	2.14	1.70	4.85	3.40	2.43	1.94	1.50

†Min.-max. for all four voltages combined; see individual voltages in table, above, for specific values and range. ‡12 and 15 μF, for 75 WVDC.

TYPE 196D DIPPED TANTALEX® SOLID-TANTALUM CAPACITORS

Epoxy-dipped coating economically provides good electrical and mechanical protection. High stability, very little capacitance change; low dissipation factor permits higher ripples. Radial leads for mounting on PC boards. **Operating Temperature:** −55° C to +85° C. **Tolerance:** ±10%; ±20% available as noted. **Case Size and Leads:** Last three characters indicate case sizes and leads. Case Size: **H,** .175″ dia. x .375″ h.; **J,** .225″ dia. x .425″ h.; **K,** .225″ dia. x .450″ h.; **L,** .450″ dia. x .500″ h.; **M,** .600″ dia. x .800″ h.; **P,** .400″ dia. x .650″ h.; **T,** .400″ dia. x .750″ h. Numbers ending with **A1** have straight leads with .125″ spacing; **A3** indicates straight leads with .250″ spacing. Numbers ending with **E4** have "Hockeystick" leads with .250″ spacing. For short "Hockeystick" pin leads (.187″ l.; .250″ spacing) change A1 or E4 to **E3.** For short "Hairpin Crimped" leads (.187″ l.; .250″ spacing) change A3 to **B3.**



4 WVDC, 5.3 V SURGE

Sprague Number	Cap., μF	Net Each, Lots of 5-Pak 1-49	5-Pak 50-99	Bulk Pack 100-499	Bulk Pack 500-999	Bulk Pack 1000-4999*
196D106X9004HA1*	10	$0.50	$0.32	$0.26	$0.23	$0.17
196D126X9004HA1	12	.50	.32	.26	.23	.17
196D476X9004JA1*	47	.58	.37	.30	.27	.20
196D566X9004JA1	56	.58	.37	.30	.27	.20
196D826X9004KA1	82	.66	.42	.34	.30	.22
196D107X9004KA1*	100	.66	.42	.34	.30	.22
196D187X9004LA3	180	1.30	.82	.66	.58	.41
196D187X9004PE4	180	1.30	.82	.66	.58	.41
196D227X9004LA3*	220	1.30	.82	.66	.58	.41
196D227X9004PE4*	220	1.30	.82	.66	.58	.41

6 WVDC, 8 V SURGE

196D685X9006HA1*	6.8	$0.50	$0.32	$0.26	$0.23	$0.17
196D825X9006HA1	8.2	.50	.32	.26	.23	.17
196D336X9006JA1*	33	.58	.37	.30	.27	.20
196D396X9006JA1	39	.58	.37	.30	.27	.20
196D476X9006KA1*	47	.66	.42	.34	.30	.22
196D566X9006KA1	56	.66	.42	.34	.30	.22
196D686X9006KA1*	68	.66	.42	.34	.30	.22
196D127X9006LA3	120	1.30	.82	.66	.58	.41
196D127X9006PE4	120	1.30	.82	.66	.58	.41
196D157X9006LA3*	150	1.30	.82	.66	.58	.41
196D157X9006PE4*	150	1.30	.82	.66	.58	.41
196D277X9006MA3	270	2.26	1.42	1.14	1.00	.70
196D277X9006TE4	270	2.26	1.42	1.14	1.00	.70
196D337X9006MA3*	330	2.26	1.42	1.14	1.00	.70
196D337X9006TE4*	330	2.26	1.42	1.14	1.00	.70

10 WVDC, 13 V SURGE

196D475X9010HA1*	4.7	$0.50	$0.32	$0.26	$0.23	$0.17
196D565X9010HA1	5.6	.50	.32	.26	.23	.17
196D226X9010JA1*	22	.58	.37	.30	.27	.20
196D276X9010JA1	27	.58	.37	.30	.27	.20
196D336X9010KA1*	33	.66	.42	.34	.30	.22
196D396X9010KA1	39	.66	.42	.34	.30	.22
196D826X9010LA3	82	1.30	.82	.66	58	.41
196D826X9010PE4	82	1.30	.82	.66	.58	.41
196D107X9010LA3*	100	1.30	.82	.66	.58	.41
196D107X9010PE4*	100	1.30	.82	.66	.58	.41
196D187X9010MA3	180	2.26	1.42	1.14	1.00	.70
196D187X9010TE4	180	2.26	1.42	1.14	1.00	.70
196D227X9010MA3*	220	2.26	1.42	1.14	1.00	.70
196D227X9010TE4*	220	2.26	1.42	1.14	1.00	.70

15 WVDC, 20 V SURGE

196D335X9015HA1*	3.3	$0.50	$0.32	$0.26	$0.23	$0.17
196D395X9015HA1	3.9	.50	.32	.26	.23	.17
196D156X9015JA1*	15	.58	.37	.30	.27	.20
196D186X9015JA1	18	.58	.37	.30	.27	.20
196D226X9015KA1*	22	.66	.42	.34	.30	.22
196D566X9015LA3	56	1.30	.82	.66	.58	.41
196D566X9015PE4	56	1.30	.82	.66	.58	.41
196D686X9015LA3*	68	1.30	.82	66	.58	.41
196D686X9015PE4*	68	1.30	.82	.66	.58	.41
196D127X9015MA3	120	2.26	1.42	1.14	1.00	.70
196D127X9015TE4	120	2.26	1.42	1.14	1.00	.70
196D157X9015MA3*	150	2.26	1.42	1.14	1.00	.70
196D157X9015TE4*	150	2.26	1.42	1.14	1.00	.70

20 WVDC, 26 V SURGE

196D275X9020HA1	2.7	$0.50	$0.32	$0.26	$0.23	$.17
196D106X9020JA1*	10	.58	.37	.30	.27	.20
196D126X9020JA1	12	.58	.37	.30	.27	.20
196D156X9020KA1*	15	.66	.42	.34	.30	.22
196D396X9020LA3	39	1.30	.82	.66	.58	.41
196D396X9020PE4	39	1.30	.82	.66	.58	.41
196D476X9020LA3*	47	1.30	.82	.66	.58	.41
196D476X9020PE4*	47	1.30	.82	.66	.58	.41
196D826X9020MA3	82	2.26	1.42	1.14	1.00	.70
196D826X9020TE4	82	2.26	1.42	1.14	1.00	.70
196D107X9020MA3*	100	2.26	1.42	1.14	1.00	.70
196D107X9020TE4*	100	2.26	1.42	1.14	1.00	.70

25 WVDC, 32 V SURGE

196D125X9025HA1	1.2	$0.50	$0.32	$0.26	$0.23	$0.17
196D155X9025HA1*	1.5	.50	.32	.26	.23	.17
196D185X9025HA1	1.8	.50	.32	.26	.23	.17
196D225X9025HA1*	2.2	.50	.32	.26	.23	.17
196D565X9025JA1	5.6	.58	.37	.30	.27	.20
196D685X9025JA1*	6.8	.58	.37	.30	.27	.20
196D825X9025JA1	8.2	.58	.37	.30	.27	.20
196D106X9025KA1*	10	.66	.42	.34	.30	.22
196D126X9025KA1	12	.66	.42	.34	.30	.22

25 WVDC, 32 V SURGE (CONTINUED)

Sprague Number	Cap., μF	Net Each, Lots of 5-Pak 1-49	5-Pak 50-99	Bulk Pack 100-499	Bulk Pack 500-999	Bulk Pack 1000-4999*
196D186X9025LA3	18	$1.30	$0.82	$0.66	$0.58	$0.41
196D226X9025LA3*	22	1.30	.82	.66	.58	.41
196D276X9025LA3	27	1.30	.82	.66	.58	.41
196D276X9025PE4	27	1.30	.82	.66	.58	.41
196D336X9025LA3*	33	1.30	.82	.66	.58	.41
196D336X9025PE4*	33	1.30	.82	.66	.58	.41
196D396X9025MA3	39	2.26	1.42	1.14	1.00	.70
196D476X9025MA3*	47	2.26	1.42	1.14	1.00	.70
196D566X9025MA3	56	2.26	1.42	1.14	1.00	.70
196D566X9025TE4	56	2.26	1.42	1.14	1.00	.70
196D686X9025MA3*	68	2.26	1.42	1.14	1.00	.70
196D686X9025TE4*	68	2.26	1.42	1.14	1.00	.70

35 WVDC, 46 V SURGE

196D104X9035HA1*	.10	$0.50	$0.32	$0.26	$0.23	$0.17
196D124X9035HA1	.12	.50	.32	.26	.23	.17
196D154X9035HA1*	.15	.50	.32	.26	.23	.17
196D184X9035HA1	.18	.50	.32	.26	.23	.17
196D224X9035HA1*	.22	.50	.32	.26	.23	.17
196D274X9035HA1	.27	.50	.32	.26	.23	.17
196D334X9035HA1*	.33	.50	.32	.26	.23	.17
196D394X9035HA1	.39	.50	.32	.26	.23	.17
196D474X9035HA1*	.47	.50	.32	.26	.23	.17
196D564X9035HA1	.56	.50	.32	.26	.23	.17
196D684X9035HA1*	.68	.50	.32	.26	.23	.17
196D824X9035HA1	.82	.50	.32	.26	.23	.17
196D105X9035HA1*	1.0	.50	.32	.26	.23	.17
196D125X9035JA1	1.2	.58	.37	.30	.27	.20
196D155X9035JA1*	1.5	.58	.37	.30	.27	.20
196D185X9035JA1	1.8	.58	.37	.30	.27	.20
196D225X9035JA1*	2.2	.58	.37	.30	.27	.20
196D275X9035JA1	2.7	.58	.37	.30	.27	.20
196D335X9035JA1*	3.3	.58	.37	.30	.27	.20
196D395X9035JA1	3.9	.58	.37	.30	.27	.20
196D475X9035JA1*	4.7	.58	.37	.30	.27	.20
196D565X9035KA1	5.6	.66	.42	.34	.30	.22
196D685X9035KA1*	6.8	.66	.42	.34	.30	.22
196D825X9035LA3	8.2	1.30	.82	.66	.58	.41
196D825X9035PE4	8.2	1.30	.82	.66	.58	.41
196D106X9035LA3*	10	1.30	.82	.66	.58	.41
196D106X9035PE4*	10	1.30	.82	.66	.58	.41
196D126X9035LA3	12	1.30	.82	.66	.58	.41
196D126X9035PE4	12	1.30	.82	.66	.58	.41
196D156X9035LA3*	15	1.30	.82	.66	.58	.41
196D156X9035PE4*	15	1.30	.82	.66	.58	.41
196D186X9035MA3	18	1.42	.90	.72	.63	.45
196D186X9035PE4	18	1.42	.90	.72	.63	.45
196D226X9035MA3*	22	1.42	.90	.72	.63	.45
196D226X9035PE4*	22	1.42	.90	.72	.63	.45
196D276X9035MA3	27	2.26	1.42	1.14	1.00	.70
196D276X9035TE4	27	2.26	1.42	1.14	1.00	.70
196D336X9035MA3*	33	2.26	1.42	1.14	1.00	.70
196D336X9035TE4*	33	2.26	1.42	1.14	1.00	.70
196D396X9035TE4	39	2.26	1.42	1.14	1.00	.70
196D476X9035TE4*	47	2.26	1.42	1.14	1.00	.70

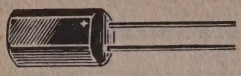
50 WVDC, 65 V SURGE

196D104X9050HA1*	.10	$0.70	$0.45	$0.36	$0.32	$0.23
196D124X9050HA1	.12	.70	.45	.36	.32	.23
196D154X9050HA1*	.15	.70	.45	.36	.32	.23
196D184X9050HA1	.18	.70	.45	.36	.32	.23
196D224X9050HA1*	.22	.70	.45	.36	.32	.23
196D274X9050HA1	.27	.70	.45	.36	.32	.23
196D334X9050HA1*	.33	.70	.45	.36	.32	.23
196D394X9050HA1	.39	.70	.45	.36	.32	.23
196D474X9050HA1*	.47	.70	.45	.36	.32	.23
196D564X9050HA1	.56	.70	.45	.36	.32	.23
196D684X9050HA1*	.68	.70	.45	.36	.32	.23
196D824X9050HA1	.82	.70	.45	.36	.32	.23
196D105X9050HA1*	1.0	.70	.45	.36	.32	.23
196D125X9050JA1	1.2	.78	.50	.40	.35	.25
196D155X9050JA1*	1.5	.78	.50	.40	.35	.25
196D185X9050JA1	1.8	.78	.50	.40	.35	.25
196D225X9050JA1*	2.2	.78	.50	.40	.35	.25
196D275X9050JA1	2.7	.78	.50	.40	.35	.25
196D335X9050JA1*	3.3	.78	.50	.40	.35	.25
196D395X9050KA1	3.9	.86	.55	.44	.39	.28
196D475X9050KA1*	4.7	.86	.55	.44	.39	.28
196D565X9050PE4	5.6	1.32	.90	.68	.61	.44
196D685X9050PE4*	6.8	1.32	.90	.68	.61	.44
196D825X9050PE4	8.2	1.32	.90	.68	.61	.44
196D106X9050PE4*	10	1.32	.90	.68	.61	.44
196D126X9050PE4	12	1.32	.90	.68	.61	.44
196D156X9050PE4*	15	1.32	.90	.68	.61	.44
196D186X9050TE4	18	2.68	1.70	1.35	1.17	.82
196D226X9050TE4*	22	2.68	1.70	1.35	1.17	.82

*±20% tolerance available. Change 9th character in number to **0** (196D106X**0**004HA1) and deduct **2c** per each price break-out.

***5000 UP BULK PRICING AVAILABLE ON REQUEST**

TYPE 198D VERTICAL MOUNTING ECONOLINE™ SOLID TANTALEX® CAPACITORS



Economically priced solid electrolytic capacitors suitable for high speed automatic insertion on printed wiring boards in transistorized entertainment, commercial, and industrial equipment. Unique body shape, similar to that of popular plastic encapsulated Econoline transistors, also facilitates rapid visual inspection of inserted units for proper polarization. Capacitors with working voltages between 4 and 50 VDC are available for operation over the temperature range of −55° C to +85° C without derating. Capacitors listed below are in tolerance of ±10% and ±20% with .100" lead spacing. See ordering information below for other listings available.

Sprague Number	Cap., µF	WV DC	Price Code
198D106X0004H1	10	4	H1
198D106X9004H1	10	4	H2
198D126X9004H1	12	4	H2
198D826X9004K1	82	4	K4
198D107X0004K1	100	4	K3
198D107X9004K1	100	4	K4
198D685X0006H1	6.8	6	H1
198D685X9006H1	6.8	6	H2
198D825X9006H1	8.2	6	H2
198D476X0006K1	47	6	K3
198D476X9006K1	47	6	K4
198D566X9006K1	56	6	K4
198D686X0006K1	68	6	K3
198D686X9006K1	68	6	K4
198D475X0010H1	4.7	10	H1
198D475X9010H1	4.7	10	H2
198D565X9010H1	5.6	10	H2
198D276X9010K1	27	10	K2
198D336X0010K1	33	10	K3
198D336X9010K1	33	10	K4
198D396X9010K1	39	10	K4
198D335X0015H1	3.3	15	H1
198D335X9015H1	3.3	15	H2
198D395X9015H1	3.9	15	H2
198D186X9015K1	18	15	K2
198D226X0015K1	22	15	K3
198D226X9015K1	22	15	K4
198D275X9020H1	2.7	20	H2
198D156X0020K1	15	20	K3
198D156X9020K1	15	20	K4
198D125X9025H1	1.2	25	H2
198D155X0025H1	1.5	25	H1
198D155X9025H1	1.5	25	H2
198D185X9025H1	1.8	25	H2
198D225X0025H1	2.2	25	H1
198D225X9025H1	2.2	25	H2
198D825X9025K1	8.2	25	K2
198D106X0025K1	10	25	K3
198D106X9025K1	10	25	K4
198D126X9025K1	12	25	K4
198D104X0035H1	.1	35	H1
198D104X9035H1	.1	35	H2
198D124X9035H1	.12	35	H2
198D154X0035H1	.15	35	H1
198D154X9035H1	.15	35	H2
198D184X9035H1	.18	35	H2
198D224X0035H1	.22	35	H1
198D224X9035H1	.22	35	H2
198D274X9035H1	.27	35	H2
198D334X0035H1	.33	35	H1
198D334X9035H1	.33	35	H2
198D394X9035H1	.39	35	H2
198D474X0035H1	.47	35	H1
198D474X9035H1	.47	35	H2
198D564X9035H1	.56	35	H2
198D684X0035H1	.68	35	H1
198D684X9035H2	.68	35	H2
198D824X9035H1	.82	35	H2
198D105X0035H1	1.0	35	H1
198D105X9035H2	1.0	35	H2
198D125X9035K1	1.2	35	K2
198D155X0035K1	1.5	35	K1
198D155X9035K1	1.5	35	K2
198D185X9035K1	1.8	35	K2
198D225X0035K1	2.2	35	K1
198D225X9035K1	2.2	35	K2
198D275X9035K1	2.7	35	K2
198D335X0035K1	3.3	35	K1
198D335X9035K1	3.3	35	K2
198D395X9035K1	3.9	35	K2
198D475X0035K1	4.7	35	K1
198D475X9035K1	4.7	35	K2
198D565X9035K1	5.6	35	K4
198D685X0035K1	6.8	35	K3
198D685X9035K1	6.8	35	K4
198D104X0050H1	.1	50	H3
198D104X9050H1	.1	50	H4
198D124X9050H1	.12	50	H4
198D154X0050H1	.15	50	H3
198D154X9050H1	.15	50	H4
198D184X9050H1	.18	50	H4
198D224X0050H1	.22	50	H3
198D224X9050H1	.22	50	H4
198D274X9050H1	.27	50	H4
198D334X0050H1	.33	50	H3
198D334X9050H1	.33	50	H4
198D394X9050H1	.39	50	H4
198D474X0050H1	.47	50	H3
198D474X9050H1	.47	50	H4
198D564X9050H1	.56	50	H4
198D684X0050H1	.68	50	H3
198D684X9050H1	.68	50	H4
198D824X9050H1	.82	50	H4
198D105X0050H1	1.0	50	H3
198D105X9050H1	1.0	50	H4
198D125X9050K1	1.2	50	K6
198D155X0050K1	1.5	50	K5
198D155X9050K1	1.5	50	K6
198D185X9050K1	1.8	50	K6
198D225X0050K1	2.2	50	K5
198D225X9050K1	2.2	50	K6
198D275X9050K1	2.7	50	K6
198D335X0050K1	3.3	50	K5
198D335X9050K1	3.3	50	K6
198D395X9050K1	3.9	50	K8
198D475X0050K1	4.7	50	K7
198D475X9050K1	4.7	50	K8

ORDERING INFORMATION

Order by complete number. Listings shown above are for .100" lead spacing. **For .200" lead spacing,** change the last digit in Sprague number from 1 to **2**; same price. **For .250" lead spacing,** change the last digit in Sprague number to **3**; same price. **Tolerance** is indicated by 9th char. in Sprague number; **9** = ±10%; **0** = ±20%. **Case Size** is indicated by 13th char. in Sprague number (**H** or **K**); dimensions are given in the table below.

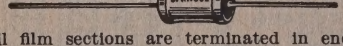
CASE SIZE

Code	Diameter	Height
H	.250"	.325"
K	.250"	.475"

PRICING

Code	Net Each, Lots of 5-Pack 1-24	5-Pack 25-49	5-Pack 50-99	Bulk Pack 100-499	Bulk Pack 500-999
H1	$0.48	$0.36	$0.30	$0.24	$0.21
H2	.51	.38	.32	.26	.23
K1	.57	.42	.35	.28	.25
K2	.60	.44	.37	.30	.27
K3	.66	.48	.40	.32	.28
K4	.69	.50	.42	.34	.30
H3	.69	.51	.43	.34	.30
H4	.72	.53	.45	.36	.32
K5	.78	.57	.48	.38	.33
K6	.81	.59	.50	.40	.35
K7	.84	.63	.53	.42	.37
K8	.87	.65	.55	.44	.39

192P PACER® FILMITE® "E" CAPACITORS



Extended foil film sections are terminated in end caps with wire leads, to assure the best possible non-inductive section. Protected by heat shrinkable plastic sleeve or epoxy coating. Designed for operation to 85° C. Tolerance, ±10%.

80 WVDC

Sprague No.	µF	Dia. x L. Inches	Net Each, Lots of* 1-24	25-49	50-99	100-249
192P2229R8	.0022	.138 x 5/16	$0.54	$0.32	$0.249	$0.213
192P2729R8	.0027	.138 x 5/16	.54	.32	.249	.213
192P3329R8	.0033	.138 x 5/16	.54	.32	.249	.213
192P3929R8	.0039	.138 x 5/16	.54	.32	.249	.213
192P4729R8	.0047	.138 x 5/16	.54	.32	.249	.213
192P5629R8	.0056	.170 x 3/8	.54	.32	.249	.213
192P6829R8	.0068	.170 x 3/8	.54	.32	.249	.213
192P8229R8	.0082	.170 x 3/8	.54	.32	.249	.213
192P1039R8	.01	.170 x 3/8	.48	.299	.233	.20
192P1239R8	.012	.170 x 7/16	.54	.322	.25	.215
192P1539R8	.015	.170 x 7/16	.57	.344	.268	.23
192P1839R8	.018	.170 x 1/2	.57	.349	.271	.233
192P2239R8	.022	.170 x 1/2	.57	.356	.277	.237
192P2739R8	.027	.204 x 7/16	.60	.36	.28	.24
192P3339R8	.033	.204 x 7/16	.60	.356	.284	.243
192P3939R8	.039	.204 x 9/16	.60	.374	.291	.249
192P4739R8	.047	.204 x 9/16	.63	.383	.298	.255
192P5639R8	.056	.225 x 9/16	.63	.394	.306	.263
192P6839R8	.068	.225 x 9/16	.69	.414	.322	.276
192P8239R8	.082	.290 x 1/2	.72	.432	.336	.288
192P1049R8	.1	.290 x 1/2	.72	.441	.343	.294
192P1249R8	.12	.290 x 5/8	.84	.522	.406	.348
192P1549R8	.15	.290 x 5/8	.90	.56	.436	.374
192P1849R8	.18	.318 x 5/8	.99	.617	.48	.411
192P2249R8	.22	.318 x 5/8	1.11	.677	.527	.452
192P2749R8	.27	.318 x 7/8	1.17	.725	.564	.483
192P3349R8	.33	.318 x 7/8	1.23	.765	.595	.51
192P3949R8	.39	.318 x 1 3/16	1.32	.81	.63	.54

200 WVDC

Sprague No.	µF	Dia. x L. Inches	Net Each, Lots of* 1-24	25-49	50-99	100-249
192P10192	.0001	.138 x 5/16	$0.45	$0.275	$0.214	$0.183
192P12192	.00012	.138 x 5/16	.45	.275	.214	.183
192P15192	.00015	.138 x 5/16	.45	.275	.214	.183
192P18192	.00018	.138 x 5/16	.45	.275	.214	.183
192P22192	.00022	.138 x 5/16	.45	.275	.214	.183
192P27192	.00027	.138 x 5/16	.45	.275	.214	.183
192P33192	.00033	.138 x 5/16	.45	.275	.214	.183
192P39192	.00039	.138 x 5/16	.45	.275	.214	.183
192P47192	.00047	.138 x 5/16	.45	.275	.214	.183
192P56192	.00056	.138 x 5/16	.42	.25	.194	.167
192P68192	.00068	.138 x 5/16	.42	.25	.194	.167
192P82192	.00082	.138 x 5/16	.42	.25	.194	.167
192P10292	.001	.138 x 5/16	.36	.221	.172	.147
192P12292	.0012	.138 x 5/16	.36	.221	.172	.147
192P15292	.0015	.138 x 5/16	.36	.221	.172	.147
192P18292	.0018	.170 x 5/16	.36	.221	.172	.147
192P22292	.0022	.170 x 5/16	.36	.223	.173	.149
192P27292	.0027	.170 x 5/16	.36	.223	.173	.149
192P33292	.0033	.170 x 5/16	.36	.223	.173	.149
192P39292	.0039	.170 x 7/16	.36	.225	.175	.15
192P47292	.0047	.170 x 7/16	.39	.227	.177	.152
192P56292	.0056	.170 x 7/16	.39	.23	.179	.153
192P68292	.0068	.170 x 7/16	.39	.232	.18	.155
192P82292	.0082	.170 x 1/2	.39	.243	.189	.162
192P10392	.01	.170 x 1/2	.42	.248	.193	.165
192P12392	.012	.204 x 7/16	.42	.252	.196	.168
192P15392	.015	.204 x 7/16	.42	.254	.198	.17
192P18392	.018	.204 x 9/16	.42	.261	.203	.174
192P22392	.022	.204 x 9/16	.45	.266	.207	.177
192P27392	.027	.225 x 9/16	.45	.281	.219	.188
192P33392	.033	.225 x 9/16	.48	.295	.229	.197
192P39392	.039	.290 x 1/2	.51	.311	.242	.207
192P47392	.047	.290 x 1/2	.54	.324	.252	.216
192P56392	.056	.290 x 5/8	.57	.342	.266	.228
192P68392	.068	.290 x 5/8	.60	.36	.28	.24

SPRAGUE Orange Drop® Capacitors

TYPE PS ORANGE DROP DIFILM® DIPPED TUBULAR CAPACITORS

- Double dipped in bright orange epoxy resin—beats heat and humidity.
- Outside foil on all units identified by black striping.
- Dual dielectric (polyester film–paper) solidly impregnated with exclusive HCX®—produces rock-hard capacitor section.
- Crimped wire leads for correct spacing when mounted on printed wiring boards.

200 VDC

Sprague No. 2PS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
S20	.02	$0.27	$0.176	$0.138	$0.110
S22	.022	.27	.176	.138	.110
S47	.047	.27	.176	.138	.110
S50	.05	.27	.176	.138	.110
P10	.1	.30	.223	.174	.139
P15	.15	.42	.288	.224	.179
P20	.2	.51	.356	.276	.221
P22	.22	.51	.356	.276	.221
P25	.25	.69	.495	.385	.308
P33	.33	.69	.495	.385	.308
P47	.47	.90	.663	.515	.413
P50	.5	.90	.663	.515	.413

400 VDC

Sprague No. 4PS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
S10	.01	$0.24	$0.155	$0.12	$0.096
S15	.015	.27	.176	.138	.11
S20	.02	.27	.191	.149	.119
S22	.022	.27	.191	.149	.119
S25	.025	.30	.201	.156	.125
S30	.03	.30	.201	.156	.125
S33	.033	.30	.201	.156	.125
S40	.04	.30	.201	.156	.125
S47	.047	.30	.201	.156	.125
S50	.05	.30	.201	.156	.125
S56	.056	.30	.223	.174	.139
S68	.068	.30	.223	.174	.139
S75	.075	.42	.288	.224	.179
P10	.1	.42	.288	.224	.179
P15	.15	.51	.356	.276	.221
P20	.2	.69	.495	.385	.308
P22	.22	.69	.495	.385	.308
P25	.25	.90	.663	.515	.413

600 VDC

Sprague No. 6PS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
D10	.001	$0.24	$0.145	$0.113	$0.09
D12	.0012	.24	.145	.113	.09
D15	.0015	.24	.145	.113	.09
D18	.0018	.24	.145	.113	.09
D20	.002	.24	.145	.113	.09
D22	.0022	.24	.145	.113	.09
D25	.0025	.24	.145	.113	.09
D27	.0027	.24	.145	.113	.09
D30	.003	.24	.145	.113	.09
D33	.0033	.24	.145	.113	.09
D39	.0039	.24	.145	.113	.09
D40	.004	.24	.145	.113	.09
D47	.0047	.24	.145	.113	.09
D50	.005	.24	.145	.113	.09
D56	.0056	.24	.145	.113	.09
D60	.006	.24	.145	.113	.09
D68	.0068	.24	.145	.113	.09
D75	.0075	.24	.145	.113	.09
D80	.008	.24	.145	.113	.09
D82	.0082	.24	.145	.113	.09
S10	.01	.24	.155	.12	.096
S12	.012	.27	.176	.138	.110
S15	.015	.27	.176	.138	.110
S20	.02	.27	.191	.149	.119
S22	.022	.27	.191	.149	.119
S25	.025	.30	.201	.156	.125
S27	.027	.30	.201	.156	.125
S30	.03	.30	.201	.156	.125
S33	.033	.30	.201	.156	.125
S35	.035	.30	.201	.156	.125
S39	.039	.30	.223	.174	.139
S40	.04	.30	.223	.174	.139
S47	.047	.30	.223	.174	.139
S50	.05	.30	.223	.174	.139
S56	.056	.36	.248	.193	.154
S60	.06	.36	.248	.193	.154
S68	.068	.36	.248	.193	.154
S75	.075	.36	.248	.193	.154
S82	.082	.42	.288	.224	.179
P10	.1	.42	.288	.224	.179
P15	.15	.60	.436	.339	.271
P20	.2	.90	.663	.515	.413
P22	.22	.90	.663	.515	.413
P25	.25	1.11	.805	.626	.500
P33	.33	1.11	.805	.626	.500
P47	.47	1.32	.959	.746	.596

1000 VDC

Sprague No. 1OPS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
D10	.001	$0.30	$0.178	$0.138	$0.111
D15	.0015	.30	.178	.138	.111
D20	.002	.30	.178	.138	.111
D22	.0022	.30	.178	.138	.111
D30	.003	.30	.182	.142	.113
D33	.0033	.30	.182	.142	.113

1000 VDC (CONT'D)

Sprague No. 1OPS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
D40	.004	$0.33	$0.198	$0.154	$0.123
D47	.0047	.33	.198	.154	.123
D50	.005	.33	.198	.154	.123
D68	.0068	.36	.216	.168	.134
S10	.01	.39	.23	.179	.143
S15	.015	.42	.248	.193	.154
S22	.022	.48	.286	.222	.178
S33	.033	.54	.329	.256	.204
S39	.039	.57	.349	.271	.217
S47	.047	.57	.349	.271	.217
S56	.056	.66	.396	.308	.246
S68	.068	.66	.396	.308	.246
S82	.082	.87	.529	.411	.329
P10	.1	.87	.529	.411	.329

1600 VDC

Sprague No. 16PS-	µF	Net Each, Lots of 1-24	25-49	50 Up	100-249*
D10	.001	$0.33	$0.198	$0.154	$0.123
D15	.0015	.36	.216	.168	.134
D20	.002	.42	.248	.193	.154
D22	.0022	.42	.248	.193	.154
D30	.003	.48	.286	.222	.178
D33	.0033	.48	.286	.222	.178
D39	.0039	.48	.286	.222	.178
D40	.004	.48	.286	.222	.178
D47	.0047	.48	.286	.222	.178
D50	.005	.48	.286	.222	.178
D60	.006	.48	.286	.222	.178
D68	.0068	.48	.286	.222	.178
D70	.007	.48	.286	.222	.178
D75	.0075	.48	.286	.222	.178
D80	.008	.54	.329	.256	.204
S10	.01	.54	.329	.256	.204
S15	.015	.66	.396	.308	.246
S18	.018	.87	.529	.411	.329
S20	.02	.87	.529	.411	.329
S22	.022	.87	.529	.411	.329
S30	.03	1.05	.644	.501	.400
S33	.033	1.05	.644	.501	.400
S40	.04	1.23	.767	.597	.477
S47	.047	1.23	.767	.597	.477
S50	.05	1.23	.767	.597	.477

2000 VDC

2OPS-					
D10	.001	$0.36	$0.216	$0.168	$0.134
D15	.0015	.42	.248	.193	.154
D22	.0022	.48	.286	.222	.178
D33	.0033	.54	.329	.256	.204
D47	.0047	.54	.329	.256	.204
D56	.0056	.54	.329	.256	.204
D68	.0068	.54	.329	.256	.204
D82	.0082	.66	.396	.308	.246
S27	.027	1.23	.767	.597	.477

*100–249, bulk-pack; other quantities, Kleer-Pak. 250 Up bulk-pack available on request.

TYPE 225P FILMITE® "E" ORANGE DROP RECTANGULARS

Designed for PC board use with radial leads. Similar in appearance to PS Series, above. Used in TV sets, radios and commercial equipment. Sections are wound from polyester film and thin gauge foil; wax-free conformal epoxy coating protects against moisture. For operation up to 85° C. Tolerance, ±10%.

100 VDC

Sprague No. 225P-	µF	Net Each, Lots of 1-24	25 Up	50-99	100-249*
10291WD3	.001	$0.27	$0.153	$0.119	$0.095
12291WD3	.0012	.27	.153	.119	.095
15291WD3	.0015	.27	.153	.119	.095
18291WD3	.0018	.27	.153	.119	.095
22291WD3	.0022	.27	.153	.119	.095
27291WD3	.0027	.27	.153	.119	.095
33291WD3	.0033	.27	.153	.119	.095
39291WD3	.0039	.27	.153	.119	.095
47291WD3	.0047	.27	.153	.119	.095
56291WD3	.0056	.27	.153	.119	.095
68291WD3	.0068	.27	.153	.119	.095
82291WD3	.0082	.27	.153	.119	.095
10391WD3	.01	.27	.153	.119	.095
12391WD3	.012	.27	.153	.119	.095
15391WD3	.015	.27	.153	.119	.095
18391WD3	.018	.27	.153	.119	.095
22391WD3	.022	.27	.153	.119	.095
27391WD3	.027	.27	.153	.119	.095
33391WD3	.033	.27	.153	.119	.095
39391WD3	.039	.30	.171	.133	.106
47391WD3	.047	.30	.171	.133	.106
56391WD3	.056	.30	.178	.138	.111
68391WD3	.068	.30	.178	.138	.111
82391WD3	.082	.30	.182	.142	.113
10491WD3	.1	.30	.182	.142	.113
12491XD3	.12	.42	.248	.193	.154
15491XD3	.15	.42	.248	.193	.154

100 VDC (CONT'D)

Sprague No. 225P-	µF	Net Each, Lots of 1-24	25 Up	50-99	100-249*
18491XD3	.18	$0.48	$0.288	$0.224	$0.179
22491XD3	.22	.48	.288	.224	.179
27491XD3	.27	.57	.349	.271	.217
33491XD3	.33	.57	.349	.271	.217
39491XD3	.39	.90	.558	.434	.347
47491XD3	.47	.90	.558	.434	.347
56491YD3	.56	1.02	.632	.492	.393
68491YD3	.68	1.02	.632	.492	.393
82491YD3	.82	1.26	.785	.611	.489
10591YD3	1.0	1.26	.785	.611	.489

200 VDC

Sprague No. 225P-	µF	Net Each, Lots of 1-24	25 Up	50-99	100-249*
10292XD3	.001	$0.30	$0.178	$0.138	$0.111
15292XD3	.0015	.30	.178	.138	.111
22292XD3	.0022	.30	.178	.138	.111
33292XD3	.0033	.30	.178	.138	.111
47292XD3	.0047	.30	.178	.183	.111
68292XD3	.0068	.30	.178	.138	.111
10392XD3	.01	.30	.178	.138	.111
15392XD3	.015	.33	.198	.154	.123
22392XD3	.022	.33	.198	.154	.123
33392XD3	.033	.39	.230	.179	.143
47392XD3	.047	.39	.230	.179	.143

200 VDC (CONT'D)

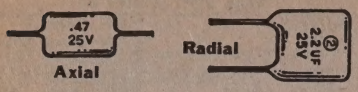
Sprague No. 225P-	µF	Net Each, Lots of 1-24	25 Up	50-99	100-249*
68392XD3	.068	$0.39	$0.230	$0.179	$0.143
10492XD3	.1	.39	.230	.179	.143
15492XD3	.15	.42	.248	.193	.154
22492XD3	.22	.48	.288	.224	.179
33492YD3	.33	.57	.349	.271	.217
47492YD3	.47	.90	.558	.434	.347
68492YD3	.68	1.26	.785	.611	.489

400 VDC

Sprague No. 225P-	µF	Net Each, Lots of 1-24	25 Up	50-99	100-249*
10294XD3	.001	$0.30	$0.178	$0.138	$0.111
15294XD3	.0015	.30	.178	.138	.111
22294XD3	.0022	.30	.178	.138	.111
33294XD3	.0033	.30	.178	.138	.111
47294XD3	.0047	.30	.178	.138	.111
68294XD3	.0068	.30	.178	.138	.111
10394XD3	.01	.30	.178	.138	.111
15394XD3	.015	.33	.198	.154	.123
22394XD3	.022	.33	.198	.154	.123
33394XD3	.033	.39	.230	.179	.143
47394XD3	.047	.39	.230	.179	.143
68394XD3	.068	.42	.248	.193	.154
10494XD3	.1	.48	.288	.224	.179
15494YD3	.15	.57	.349	.271	.217
22494YD3	.22	.90	.558	.434	.347
33494YD3	.33	1.26	.785	.611	.489
47494YD3	.47	2.46	1.523	1.185	.948

*When ordering, include final suffix **XD3** (e.g., 225P1249R75**XD3**). *1-24, 25 Up supplied in Kleer-Pak; all others, bulk-pack. Write for 250 Up bulk-pack prices.

TYPE 1C, 2C, 3C AND 5C MONOLYTHIC® CERAMIC CAPACITORS



Monolythic® ceramic capacitors are available in wide range of body formulations, capacitance values and sizes. These capacitors are made by spraying alternate layers of ceramic dielectric material and metallic electrodes, then firing into a single, all but indestructible homogenous block. Protected against mechanical damage and moisture by tough resin coating. Capacitors with radial leads are listed below. For axial leads, change **C4** or **C5** in Sprague Part No. to **B1.**

GENERAL APPLICATION FORMULATION Z5U (+10° C TO +85° C)

Tolerance: +80, −20%. For ±20% tolerance, change **D8** in Sprague Number to **X0.**

TYPE 1C—50 WVDC

Sprague Number	µF	Size Code*	Price Code†
1CZ5U103D8500C4	.01	A	1R
1CZ5U153D8500C4	.015	A	1R
1CZ5U223D8500C4	.022	A	2R
1CZ5U333D8500C4	.033	A	2R
1CZ5U473D8500C4	.047	A	2R
1CZ5U683D8500C4	.068	A	3R
1CZ5U104D8500C4	.1	B	4R

TYPE 2C—50 WVDC

Sprague Number	µF	Size Code*	Price Code†
2CZ5U103D8500C4	.01	C	1R
2CZ5U153D8500C4	.015	C	1R
2CZ5U223D8500C4	.022	C	2R
2CZ5U333D8500C4	.033	C	2R
2CZ5U473D8500C4	.047	C	2R
2CZ5U683D8500C4	.068	C	3R
2CZ5U104D8500C4	.1	C	4R

TYPE 2C—50 WVDC (CONT'D)

Sprague Number	µF	Size Code*	Price Code†
2CZ5U154D8500C4	.15	D	5R
2CZ5U224D8500C4	.22	D	5R
2CZ5U334D8500C4	.33	F	6R
2CZ5U474D8500C4	.47	F	6R
2CZ5U684D8500C4	.68	F	7R

TYPE 3C—50 WVDC

Sprague Number	µF	Size Code*	Price Code†
3CZ5U103D8500C5	.01	H	1R
3CZ5U153D8500C5	.015	H	1R
3CZ5U223D8500C5	.022	H	2R
3CZ5U333D8500C5	.033	H	2R
3CZ5U473D8500C5	.047	H	2R
3CZ5U683D8500C5	.068	H	3R
3CZ5U104D8500C5	.1	H	4R
3CZ5U154D8500C5	.15	H	5R
3CZ5U224D8500C5	.22	H	5R

TYPE 3C—50 WVDC (CONT'D)

Sprague Number	µF	Size Code*	Price Code†
3CZ5U334D8500C5	.33	I	6R
3CZ5U474D8500C5	.47	I	6R
3CZ5U684D8500C5	.68	M	7R
3CZ5U105D8500C5	1.0	M	8R

TYPE 5C—50 WVDC

Sprague Number	µF	Size Code*	Price Code†
5CZ5U104D8500C5	.1	N	4R
5CZ5U154D8500C5	.15	N	5R
5CZ5U224D8500C5	.22	N	5R
5CZ5U334D8500C5	.33	N	6R
5CZ5U474D8500C5	.47	O	6R
5CZ5U684D8500C5	.68	O	7R
5CZ5U105D8500C5	1.0	Q	8R
5CZ5U155D8500C5	1.5	S	9R
5CZ5U225D8500C5	2.2	U	10R
5CZ5U335D8500C5	3.3	U	11R

TEMPERATURE-STABLE FORMULATION X7R

Tolerance: ±10%. For ±20% tolerance, change **X9** in Sprague Number to **X0.**

TYPE 1C—100 WVDC

Sprague Number	µF	Size Code*	Price Code†
1CX7R102X9100C4	.001	A	12R
1CX7R122X9100C4	.0012	A	12R
1CX7R152X9100C4	.0015	A	12R
1CX7R222X9100C4	.0022	A	12R
1CX7R272X9100C4	.0027	A	12R
1CX7R332X9100C4	.0033	A	12R
1CX7R392X9100C4	.0039	A	12R
1CX7R472X9100C4	.0047	A	12R
1CX7R562X9100C4	.0056	A	12R
1CX7R682X9100C4	.0068	A	12R
1CX7R822X9100C4	.0082	A	12R
1CX7R103X9100C4	.01	A	13R
1CX7R123X9100C4	.012	A	13R
1CX7R153X9100C4	.015	A	14R
1CX7R183X9100C4	.018	A	14R
1CX7R223X9100C4	.022	A	15R
1CX7R273X9100C4	.027	A	15R
1CX7R333X9100C4	.033	A	16R

TYPE 2C —100 WVDC

Sprague Number	µF	Size Code*	Price Code†
2CX7R103X9100C4	.01	C	13R
2CX7R123X9100C4	.012	C	13R
2CX7R153X9100C4	.015	C	14R

TYPE 2C—100 WVDC (CONT'D)

Sprague Number	µF	Size Code*	Price Code†
2CX7R183X9100C4	.018	C	14R
2CX7R223X9100C4	.022	C	15R
2CX7R333X9100C4	.033	C	16R
2CX7R393X9100C4	.039	C	16R
2CX7R473X9100C4	.047	E	17R
2CX7R563X9100C4	.056	E	18R
2CX7R683X9100C4	.068	E	19R
2CX7R823X9100C4	.082	E	20R
2CX7R104X9100C4	.1	E	21R
2CX7R124X9100C4	.12	F	21R
2CX7R154X9100C4	.15	F	22R

TYPE 3C—100 WVDC

Sprague Number	µF	Size Code*	Price Code†
3CX7R103X9100C5	.01	H	13R
3CX7R123X9100C5	.012	H	13R
3CX7R153X9100C5	.015	H	14R
3CX7R183X9100C5	.018	H	14R
3CX7R223X9100C5	.022	H	15R
3CX7R273X9100C5	.027	H	15R
3CX7R333X9100C5	.033	H	16R
3CX7R393X9100C5	.039	H	16R
3CX7R473X9100C5	.047	H	17R
3CX7R563X9100C5	.056	H	18R

TYPE 3C—100 WVDC (CONT'D)

Sprague Number	µF	Size Code*	Price Code†
3CX7R683X9100C5	.068	H	19R
3CX7R823X9100C5	.082	H	20R
3CX7R104X9100C5	.1	H	21R
3CX7R124X9100C5	.12	M	21R
3CX7R154X9100C5	.15	M	22R
3CX7R184X9100C5	.18	M	22R
3CX7R224X9100C5	.22	M	23R
3CX7R274X9100C5	.27	M	23R
3CX7R334X9100C5	.33	M	24R

TYPE 5C—100 WVDC

Sprague Number	µF	Size Code*	Price Code†
5CX7R104X9100C5	.1	N	21R
5CX7R124X9100C5	.12	N	21R
5CX7R154X9100C5	.15	N	22R
5CX7R184X9100C5	.18	N	22R
5CX7R224X9100C5	.22	P	23R
5CX7R274X9100C5	.27	P	23R
5CX7R334X9100C5	.33	S	24R
5CX7R394X9100C5	.39	S	24R
5CX7R474X9100C5	.47	U	25R
5CX7R564X9100C5	.56	U	26R
5CX7R684X9100C5	.68	U	27R

TEMPERATURE COMPENSATING FORMULATION NPO

Tolerance: ±20%. For ±10% tolerance, change **X0** in Sprague Number to **X9.**

TYPE 1C—100 WVDC

Sprague Number	pF	Size Code*	Price Code†
1CC0G100X0100C4	10	A	28R
1CC0G110X0100C4	11	A	28R
1CC0G120X0100C4	12	A	28R
1CC0G130X0100C4	13	A	28R
1CC0G150X0100C4	15	A	28R
1CC0G160X0100C4	16	A	28R
1CC0G180X0100C4	18	A	28R
1CC0G200X0100C4	20	A	28R
1CC0G220X0100C4	22	A	28R
1CC0G240X0100C4	24	A	29R
1CC0G270X0100C4	27	A	29R
1CC0G300X0100C4	30	A	29R
1CC0G330X0100C4	33	A	29R
1CC0G360X0100C4	36	A	29R
1CC0G390X0100C4	39	A	29R
1CC0G430X0100C4	43	A	29R
1CC0G470X0100C4	47	A	29R
1CC0G510X0100C4	51	A	29R
1CC0G560X0100C4	56	A	29R
1CC0G620X0100C4	62	A	29R
1CC0G680X0100C4	68	A	29R
1CC0G750X0100C4	75	A	29R
1CC0G820X0100C4	82	A	29R
1CC0G910X0100C4	91	A	29R
1CC0G101X0100C4	100	A	29R
1CC0G111X0100C4	110	A	29R
1CC0G121X0100C4	120	A	29R
1CC0G131X0100C4	130	A	29R
1CC0G151X0100C4	150	A	29R
1CC0G161X0100C4	160	A	29R
1CC0G181X0100C4	180	A	30R
1CC0G201X0100C4	200	A	30R
1CC0G221X0100C4	220	A	30R
1CC0G241X0100C4	240	A	30R
1CC0G271X0100C4	270	A	30R
1CC0G301X0100C4	300	A	31R
1CC0G331X0100C4	330	A	31R
1CC0G361X0100C4	360	A	31R
1CC0G391X0100C4	390	A	31R
1CC0G431X0100C4	430	A	32R

TYPE 1C—100 WVDC (CONT'D)

Sprague Number	pF	Size Code*	Price Code†
1CC0G471X0100C4	470	A	32R
1CC0G511X0100C4	510	A	33R
1CC0G561X0100C4	560	A	33R

TYPE 2C—100 WVDC

Sprague Number	pF	Size Code*	Price Code†
2CC0G621X0100C4	620	C	34R
2CC0G681X0100C4	680	C	34R
2CC0G751X0100C4	750	C	35R
2CC0G821X0100C4	820	C	35R
2CC0G911X0100C4	910	C	36R
2CC0G102X1011C4	1000	C	36R
2CC0G112X0100C4	1100	C	37R
2CC0G122X0100C4	1200	C	37R
2CC0G132X0100C4	1300	C	38R
2CC0G152X0100C4	1500	C	38R
2CC0G162X0100C4	1600	C	39R
2CC0G182X0100C4	1800	C	39R
2CC0G202X0100C4	2000	C	40R
2CC0G222X0100C4	2200	E	40R
2CC0G242X0100C4	2400	E	41R
2CC0G272X0100C4	2700	E	41R

TYPE 3C—100 WVDC

Sprague Number	pF	Size Code*	Price Code†
3CC0G681X0100C5	680	H	34R
3CC0G751X0100C5	750	H	35R
3CC0G821X0100C5	820	H	35R
3CC0G911X0100C5	910	H	36R
3CC0G102X0100C5	1000	H	36R
3CC0G112X0100C5	1100	H	37R
3CC0G122X0100C5	1200	H	37R
3CC0G132X0100C5	1300	H	38R
3CC0G152X0100C5	1500	H	38R
3CC0G162X0100C5	1600	H	39R
3CC0G182X0100C5	1800	I	39R
3CC0G202X0100C5	2000	I	40R
3CC0G222X0100C5	2200	I	40R
3CC0G242X0100C5	2400	I	41R
3CC0G272X0100C5	2700	L	41R

TYPE 3C—100 WVDC (CONT'D)

Sprague Number	pF	Size Code*	Price Code†
3CC0G302X1000C5	3000	L	42R
3CC0G332X0100C5	3300	L	42R
3CC0G362X0100C5	3600	L	43R
3CC0G392X0100C5	3900	L	43R
3CC0G432X0100C5	4300	L	43R
3CC0G472X0100C5	4700	L	43R
3CC0G512X0100C5	5100	L	44R
3CC0G562X0100C5	5600	M	44R
3CC0G622X0100C5	6200	M	45R

TYPE 5C—100 WVDC

Sprague Number	pF	Size Code*	Price Code†
5CC0G681X0100C5	680	N	34R
5CC0G751X0100C5	750	N	35R
5CC0G821X0100C5	820	N	35R
5CC0G911X0100C5	910	N	36R
5CC0G102X0100C5	1000	N	36R
5CC0G112X0100C5	1100	N	37R
5CC0G122X0100C5	1200	N	37R
5CC0G132X0100C5	1300	N	38R
5CC0G152X0100C5	1500	N	38R
5CC0G162X0100C5	1600	N	39R
5CC0G182X0100C5	1800	N	39R
5CC0G202X0100C5	2000	N	40R
5CC0G222X0100C5	2200	N	40R
5CC0G242X0100C5	2400	N	41R
5CC0G272X0100C5	2700	N	41R
5CC0G302X0100C5	3000	O	42R
5CC0G332X0100C5	3300	O	42R
5CC0G362X0100C5	3600	P	43R
5CC0G392X0100C5	3900	P	43R
5CC0G432X0100C5	4300	P	43R
5CC0G472X0100C5	4700	P	43R
5CC0G512X0100C5	5100	P	44R
5CC0G562X0100C5	5600	R	44R
5CC0G622X0100C5	6200	R	45R
5CC0G682X0100C5	6800	R	45R
5CC0G752X0100C5	7500	R	46R
5CC0G822X0100C5	8200	T	46R
5CC0G912X0100C5	9100	T	46R
5CC0G103X0100C5	10000	T	46R

*†SEE FOLLOWING PAGE FOR CASE SIZES AND PRICING.

TYPE 1C, 2C, 3C AND 5C CERAMIC CAPACITORS (CONT'D)

*CASE SIZES

Size Code	Dimensions, Inches					
	Radial-Lead			Axial-Lead		
	Length	Width	Thick	Length	Width	Thick
A	.200	.200	.125	.200	.200	.156
B	.200	.200	.150	.200	.200	.156
C	.300	.200	.125	.300	.200	.156
D	.300	.200	.150	.300	.200	.156
E	.300	.300	.125			
F	.300	.300	.150	.300	.300	.156
H	.390	.200	.125	.390	.200	.156
I	.390	.200	.150	.390	.200	.156
L	.400	.400	.125	.390	.400	.156
M	.400	.400	.150	.390	.400	.156
N	.500	.200	.125	.500	.200	.156
O	.500	.200	.150	.500	.200	.156
P	.500	.296	.125	.500	.296	.156
Q	.500	.296	.150	.500	.296	.156
R	.500	.400	.125	.500	.400	.156
S	.500	.400	.150	.500	.400	.156
T	.500	.500	.125	.500	.500	.156
U	.500	.500	.150	.500	.200	.156

†TYPE 1C, 2C, 3C AND 5C PRICING

Prices shown below are for radial leads. For axial leads, add **$0.02** to the price shown. All types have a **$50.00** Minimum Item Charge except those with price codes 1R thru 10R.

Code	‡	Net Each, Lots of			
		1-24	25-49	50-99	100-499
1R	L	$0.435	$0.305	$0.218	$0.174
1R	M	.500	.350	.250	.200
2R	L	.480	.336	.240	.192
2R	M	.550	.385	.275	.220
3R	L	.520	.364	.260	.208
3R	M	.600	.420	.300	.240
4R	L	.610	.427	.305	.244
4R	M	.700	.490	.350	.280
5R	L	.870	.609	.435	.348
5R	M	1.00	.700	.500	.400
6R	L	1.215	.851	.608	.486
6R	M	1.400	.980	.700	.560
7R	L	1.350	.945	.675	.540
7R	M	1.550	1.085	.775	.620
8R	L	1.825	1.277	.912	.730
8R	M	2.100	1.470	1.050	.840
9R	L	2.385	1.670	1.193	.954
9R	M	2.745	1.922	1.373	1.098
10R	L	3.915	2.741	1.957	1.566
10R	M	4.500	3.150	2.250	1.800
11R	L	5.520	3.864	2.760	2.208
11R	M	6.375	4.463	3.188	2.550

‡L= +80, −20; M= ±20.

Code	Tol. %	Net Each, Lots of			
		1-24	25-49	50-99	100-499
12R	±20	$0.415	$0.291	$0.207	$0.166
12R	±10	.475	.332	.237	.190
13R	±20	.520	.364	.260	.208
13R	±10	.600	.420	.300	.240
14R	±20	.610	.427	.305	.244
14R	±10	.700	.490	.350	.280
15R	±20	.645	.452	.323	.258
15R	±10	.740	.518	.370	.296
16R	±20	.705	.494	.353	.282
16R	±10	.810	.567	.405	.324
17R	±20	.785	.549	.392	.314
17R	±10	.900	.630	.450	.360
18R	±20	.820	.574	.410	.328
18R	±10	.945	.661	.473	.378
19R	±20	.860	.602	.430	.344
19R	±10	.990	.693	.495	.396
20R	±20	.925	.648	.463	.370
20R	±10	1.065	.745	.532	.426
21R	±20	.995	.696	.497	.398
21R	±10	1.145	.802	.572	.458
22R	±20	1.240	.868	.620	.496
22R	±10	1.425	.998	.712	.570
23R	±20	1.545	1.082	.773	.618
23R	±10	1.775	1.243	.888	.710
24R	±20	2.015	1.411	1.008	.806
24R	±10	2.315	1.620	1.157	.926

Code	Tol. %	Net Each, Lots of			
		1-24	25-49	50-99	100-499
25R	±20	$2.580	$1.806	$1.290	$1.032
25R	±10	2.965	2.076	1.483	1.186
26R	±20	3.000	2.100	1.500	1.200
26R	±10	3.450	2.415	1.725	1.380
27R	±20	3.290	2.303	1.645	1.316
27R	±10	3.785	2.650	1.892	1.514
28R	±10	.570	.399	.285	.228
29R	±10	.475	.332	.237	.190
30R	±10	.475	.332	.237	.190
31R	±10	.475	.332	.237	.190
32R	±10	.500	.350	.250	.200
33R	±10	.525	.368	.263	.210
34R	±10	.550	.385	.275	.220
35R	±10	.600	.420	.300	.240
36R	±10	.650	.455	.325	.260
37R	±10	.750	.525	.375	.300
38R	±10	.800	.560	.400	.320
39R	±10	.800	.560	.400	.320
40R	±10	.900	.630	.450	.360
41R	±10	1.000	.700	.500	.400
42R	±10	1.100	.770	.550	.440
43R	±10	1.200	.840	.600	.480
44R	±10	1.500	1.050	.750	.600
45R	±10	1.800	1.260	.900	.720
46R	±10	2.400	1.680	1.200	.960

TYPE 7C MONOLYTHIC® CERAMIC CAPACITORS

Radial lead style designed for printed wiring board mounting. Phenolic terminal base with standoff feet avoids any resin run down on leads, provides uniform lead spacing; degreasing fluid flows freely between capacitors and board. Made by spraying alternate layers ceramic dielectric material and metallic electrodes, firing into solid homogenous block, then coating with a tough phenolic resin. All capacitors listed rated at 50 WVDC. Available with radial leads only. **Tolerances Available:** ±20% (listed) or ±10%, except Formulation Z5U available ±20% or +80, −20%. See ordering instructions under ±10% pricing.

TEMPERATURE-COMPENSATING FORMULATION NP0

Sprague Number	Cap., pF	Size Code*	Price Code†
7CC0G510X0100D	51	D	40R
7CC0G560X0100D	56	D	40R
7CC0G620X0100D	62	D	40R
7CC0G680X0100D	68	D	40R
7CC0G750X0100D	75	D	40R
7CC0G820X0100D	82	D	40R
7CC0G910X0100D	91	D	40R
7CC0G101X0100D	100	D	40R
7CC0G111X0100D	110	D	40R
7CC0G121X0100D	120	D	40R
7CC0G131X0100D	130	D	40R
7CC0G151X0100D	150	D	40R
7CC0G161X0100D	160	D	41R
7CC0G181X0100D	180	D	41R
7CC0G221X0100D	220	D	41R
7CC0G241X0100D	240	D	41R
7CC0G271X0100D	270	D	41R
7CC0G301X0100D	300	D	41R
7CC0G331X0100D	330	D	41R
7CC0G361X0100D	360	D	41R
7CC0G391X0100D	390	D	41R
7CC0G431X0100D	430	D	41R
7CC0G471X0100D	470	D	41R
7CC0G511X0100D	510	D	41R

TEMPERATURE-COMPENSATING FORMULATION X7R

Sprague Number	Cap., pF	Size Code*	Price Code†
7CX7R122X0100D	1200	D	39R
7CX7R152X0100D	1500	D	39R
7CX7R182X0100D	1800	D	39R
7CX7R222X0100D	2200	D	39R
7CX7R272X0100D	2700	D	39R
7CX7R332X0100D	3300	D	39R

TEMPERATURE-COMPENSATING FORMULATION X7R (CONT'D)

Sprague Number	Cap., pF	Size Code*	Price Code†
7CX7R392X0100D	3900	D	39R
7CX7R472X0100D	4700	D	39R
7CX7R562X0100D	5600	D	39R
7CX7R682X0100D	6800	D	39R
7CX7R822X0100D	8200	D	39R

GENERAL APPLICATION FORMULATION Z5U

Sprague Number	Cap., μF	Size Code*	Price Code†
7CZ5U103X0500D	.01	D	32R
7CZ5U153X0500D	.015	D	32R
7CZ5U223X0500D	.022	D	32R
7CZ5U333X0500D	.033	D	32R
7CZ5U473X0500D	.047	D	32R
7CZ5U683X0500D	.068	D	32R
7CZ5U104X0500D	.1	D	32R
7CZ5U154X0500D	.15	D	33R
7CZ5U224X0500D	.22	D	34R
7CZ5U334X0500E	.33	E	34R
7CZ5U474X0500E	.47	E	34R
7CZ5U684X0500E	.68	E	35R
7CZ5U105X0500E	1.0	E	36R
7CZ5U155X0500E	1.5	E	37R
7CZ5U225X0500F	2.2	F	38R

*CASE SIZES

Code	Dimensions, Inches		
	Length	Width	Thick
D	.390	.275	.160
E	.535	.550	.160
F	.535	.550	.260

†PRICING

All Type 7C have a **$50.00** Minimum Item Charge, except Formulation Z5U (C023) units which have no minimum charge.

±20% TOLERANCE

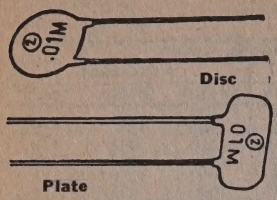
Code	Net Each, Lots of			
	1-49	50-99	100-499	500-999
29R	$1.632	$1.224	$0.816	$0.612
30R	2.284	1.713	1.142	.857
31R	3.968	2.976	1.984	1.488
32R	.768	.576	.384	.288
33R	.992	.744	.496	.372
34R	1.184	.888	.592	.444
35R	1.652	1.239	.826	.620
36R	1.996	1.497	.998	.749
37R	2.272	1.704	1.136	.852
39R	.792	.594	.396	.297
40R	.824	.618	.412	.309
41R	.884	.663	.442	.332
42R	.936	.702	.468	.351

±10% TOLERANCE

For types NP0 and X7R, change **X0** in Sprague No. to **X9** for ±10% tolerance. For type Z5U change **X0** in Sprague No. to **D8** for +80, −20% tolerance; following prices apply. Type Z5U are not available in ±10% tolerance.

Code	Net Each, Lots of			
	1-49	50-99	100-499	500-999
29R	$1.632	$1.224	$0.816	$0.612
32R	.883	.662	.442	.331
33R	1.141	.856	.570	.428
34R	1.362	1.021	.681	.511
35R	1.900	1.425	.950	.713
36R	2.295	1.722	1.148	.861
37R	2.613	1.960	1.306	.980
38R	5.074	3.805	2.537	1.903
39R	.911	.683	.455	.342
40R	.847	.639	.431	.327

CERA-MITE® CERAMIC CAPACITORS



Tiny, tough and dependable. Fine replacement for molded micas and tubular ceramics. Silvered flat-plate design has low self-inductance for high by-pass efficiency in TV circuits. Heavy moisture-proof insulating coat. For 85° C use. Std. Tol.: ±20% except as indicated.

GENERAL APPLICATION

Extra small for use anywhere. Ideal where TC is not important.

500 WVDC (discs)

Sprague No.	pF	Net Ea.
5GAS-S10	10,000	$0.15
5GAS-S20	20,000	.15
5GA-S25	25,000	.15
5GA-S40	40,000	.30
5GA-S50	50,000	.39
5GA-P10	100,000	.60

1000 WVDC (discs)

5GA-V50	5	$0.15
5GA-V68	6.8	.15
5GA-V75	7.5	.15
5GA-V82	8.2	.15
5GA-Q10	10	.15
5GA-Q12	12	.15
5GA-Q15	15	.15
5GA-Q18	18	.15
5GA-Q20	20	.15
5GA-Q22	22	.15
5GA-Q25	25	.15
5GA-Q27	27	.15
5GA-Q30	30	.15
5GA-Q33	33	.15
5GA-Q39	39	.15
5GA-Q47	47	.15
5GA-Q50	50	.15
5GA-Q56	56	.15
5GA-Q68	68	.15
5GA-Q75	75	.15
5GA-Q82	82	.15
5GA-T10	100	.15
5GA-T12	120	.15
5GA-T15	150	.15
5GA-T18	180	.15
5GA-T20	200	.15
5GA-T22	220	.15
5GA-T25	250	.15
5GA-T27	270	.15
5GA-T30	300	.15
5GA-T33	330	.15
5GA-T36	360	.15
5GA-T39	390	.15
5GA-T47	470	.15
5GA-T50	500	.15
5GA-T56	560	.15
5GA-T68	680	.15
5GA-T75	750	.15
5GA-T80	800	.15
5GA-T82	820	.15
5GA-D10	1000	.15
5GA-D12	1200	.15
5GA-D15	1500	.15
5GA-D18	1800	.15
5GA-D20	2000	.15
5GA-D22	2200	.15
5GA-D25	2500	.15
5GA-D27	2700	.15
5GA-D30	3000	.15
5GA-D33	3300	.15
5GA-D39	3900	.15
5GA-D40	4000	.15
5GA-D47	4700	.15
5GA-D50	5000	.15
5GA-D68	6800	.15
5GA-D82	8200	.15
5GA-S10	10,000	.15
5GA-S15	15,000	.15
5GA-S20	20,000	.15

3000 WVDC (discs)

Std. Tol.: 1.5 pF, ±.25 pF; 3.3–5 pF, ±.5 pF; 6–68 pF, ±10%.

30GA-V15	1.5	$0.15
30GA-V33	3.3	.15
30GA-V47	4.7	.15
30GA-V50	5	.15
30GA-V60	6	.15
30GA-V68	6.8	.15
30GA-V75	7.5	.15
30GA-V82	8.2	.15

3000 WVDC (Cont'd)

Sprague No.	pF	Net Ea.
30GA-Q10	10	$0.15
30GA-Q12	12	.15
30GA-Q15	15	.15
30GA-Q18	18	.15
30GA-Q20	20	.15
30GA-Q22	22	.15
30GA-Q25	25	.15
30GA-Q27	27	.15
30GA-Q30	30	.15
30GA-Q33	33	.15
30GA-Q39	39	.15
30GA-Q47	47	.15
30GA-Q50	50	.15
30GA-Q56	56	.15
30GA-Q60	60	.15
30GA-Q62	62	.15
30GA-Q68	68	.15
30GA-Q75	75	.15
30GA-Q82	82	.15
30GA-T10	100	.15
30GA-T12	120	.15
30GA-T15	150	.15
30GA-T18	180	.15
30GA-T20	200	.15
30GA-T22	220	.15
30GA-T25	250	.15
30GA-T27	270	.15
30GA-T30	300	.18
30GA-T33	330	.18
30GA-T39	390	.18
30GA-T40	400	.18
30GA-T47	470	.18
30GA-T50	500	.21
30GA-T56	560	.21
30GA-T68	680	.21
30GA-T75	750	.21
30GA-T82	820	.21
30GA-D10	1000	.21
30GA-D12	1200	.21
30GA-D15	1500	.21
30GA-D20	2000	.21
30GA-D22	2200	.21
30GA-D25	2500	.21
30GA-D27	2700	.21
30GA-D30	3000	.21
30GA-D33	3300	.21
30GA-D39	3900	.24
30GA-D40	4000	.24
30GA-D47	4700	.24
30GA-D50	5000	.24
30GA-D60	6000	.33
30GA-D68	6800	.33
30GA-D80	8000	.33
30GA-D82	8200	.39
30GA-S10	10,000	.39

6000 WVDC (discs)

60GA-V15	1.5	$0.30
60GA-V47	4.7	.30
60GA-V68	6.8	.30
60GA-V82	8.2	.30
60GA-Q10	10	.30
60GA-Q12	12	.30
60GA-Q15	15	.30
60GA-Q18	18	.30
60GA-Q20	20	.30
60GA-Q22	22	.30
60GA-Q25	25	.30
60GA-Q27	27	.30
60GA-Q30	30	.30
60GA-Q33	33	.30
60GA-Q39	39	.30
60GA-Q47	47	.30
60GA-Q50	50	.30
60GA-Q56	56	.30
60GA-Q60	60	.30
60GA-Q68	68	.30
60GA-Q75	75	.30
60GA-Q82	82	.30
60GA-T10	100	.30
60GA-T12	120	.30
60GA-T15	150	.30
60GA-T18	180	.30
60GA-T20	200	.30
60GA-T22	220	.30
60GA-T25	250	.30
60GA-T27	270	.30
60GA-T30	300	.33
60GA-T33	330	.33
60GA-T39	390	.36
60GA-T40	400	.36
60GA-T47	470	.36
60GA-T50	500	.42
60GA-T56	560	.42
60GA-T68	680	.42
60GA-T75	750	.42
60GA-T82	820	.42
60GA-D10	1000	.54
60GA-D12	1200	.54
60GA-D15	1500	.54
60GA-D22	2200	.75
60GA-D25	2500	.87
60GA-D27	2700	.87
60GA-D30	3000	.87
60GA-D33	3300	.87
60GA-D39	3900	.93
60GA-D47	4700	.93

7500 WVDC (discs)

Std. Tol.: 4.7 pF, ±.5 pF; 8.2–18 pF, ±10%.

Sprague No.	pF	Net Ea.
75GA-V47	4.7	$0.42
75GA-V82	8.2	.42
75GA-Q10	10	.42
75GA-Q12	12	.42
75GA-Q15	15	.42
75GA-Q18	18	.42
75GA-Q20	20	.42
75GA-Q22	22	.42
75GA-Q30	30	.42
75GA-Q33	33	.42
75GA-Q47	47	.42
75GA-Q56	56	.42
75GA-T10	100	.42
75GA-T22	220	.48
75GA-T47	470	.48
75GA-T50	500	.48
75GA-T56	560	.48
75GA-T68	680	.48
75GA-T75	750	.57
75GA-T82	820	.57
75GA-D10	1000	.57
75GA-D12	1200	.57
75GA-D15	1500	.81
75GA-D18	1800	.81
75GA-D20	2000	.93
75GA-D22	2200	.93
75GA-D25	2500	.93

TEMPERATURE-STABLE

Used where minimum capacitance change with temperature is an important consideration. Rated 1000 WVDC. Std. Tol., ±10%.

Sprague No.	pF	Net Ea.
10TS-V33	3.3	$0.15
10TS-V50	5	.15
10TS-V68	6.8	.15
10TS-V75	7.5	.15
10TS-V82	8.2	.15
10TS-Q10	10	.15
10TS-Q12	12	.15
10TS-Q15	15	.15
10TS-Q18	18	.15
10TS-Q20	20	.15
10TS-Q22	22	.15
10TS-Q25	25	.15
10TS-Q27	27	.15
10TS-Q30	30	.15
10TS-Q33	33	.15
10TS-Q39	39	.15
10TS-Q47	47	.15
10TS-Q50	50	.15
10TS-Q56	56	.15
10TS-Q68	68	.15
10TS-Q75	75	.15
10TS-Q82	82	.15
10TS-Q91	91	.15
10TS-T10	100	.15
10TS-T12	120	.15
10TS-T15	150	.15
10TS-T18	180	.15
10TS-T20	200	.15
10TS-T22	220	.15
10TS-T25	250	.15
10TS-T27	270	.15
10TS-T30	300	.15
10TS-T33	330	.15
10TS-T39	390	.15
10TS-T47	470	.15
10TS-T50	500	.15
10TS-T56	560	.15
10TS-T68	680	.15
10TS-T75	750	.15
10TS-T82	820	.15
10TS-D10	1000	.15
10TS-D12	1200	.15
10TS-D15	1500	.15
10TS-D18	1800	.15
10TS-D20	2000	.15
10TS-D22	2200	.15
10TS-D25	2500	.15
10TS-D27	2700	.15
10TS-D30	3000	.15
10TS-D33	3300	.15
10TS-D39	3900	.15
10TS-D40	4000	.15
10TS-D47	4700	.18
10TS-D50	5000	.18
10TS-D56	5600	.18
10TS-D68	6800	.27
10TS-D75	7500	.36
10TS-D82	8200	.36
10TS-S10	10000	.36

SEMI-STABLE

WVDC: 250, 2SS; 1000, 10SS. Std. Tol.: ±10%.

Sprague No.	pF	Net Ea.
2SS-T75	750	$0.15
2SS-T82	820	.15
2SS-D10	1000	.15
2SS-D12	1200	.15
2SS-D15	1500	.15
2SS-D18	1800	.15
2SS-D20	2000	.15
2SS-D22	2200	.15
2SS-D27	2700	.15
2SS-D33	3300	.15
2SS-D39	3900	.15
2SS-D47	4700	.15
2SS-D50	5000	.15
2SS-D56	5600	.15
2SS-D68	6800	.15
2SS-D82	8200	.18
2SS-S10	10,000	.21
2SS-S12	12,000	.33
2SS-S15	15,000	.39
2SS-S18	18,000	.45
2SS-S20	20,000	.45
10SS-T47	470	.15
10SS-T50	500	.15
10SS-T56	560	.15
10SS-T68	680	.15
10SS-T75	750	.15
10SS-T82	820	.15
10SS-D10	1000	.15
10SS-D12	1200	.15
10SS-D15	1500	.15
10SS-D18	1800	.15
10SS-D20	2000	.15
10SS-D22	2200	.15
10SS-D27	2700	.15
10SS-D33	3300	.15
10SS-D39	3900	.15
10SS-D47	4700	.15
10SS-D50	5000	.15
10SS-D56	5600	.15
10SS-D68	6800	.15
10SS-D82	8200	.18
10SS-S10	10,000	.18
10SS-S12	12,000	.27
10SS-S15	15,000	.36
10SS-S18	18,000	.36
10SS-S20	20,000	.36
10SS-S22	22,000	.36

HIGH-K TYPES

For bypass and coupling uses where added capacitance is not important. WVDC: 1000 except 5HKS-S10–TH-P10 500. Std. Tol.: GMV except 5HKS-S10–5HK-P10, +80 −20%; TH types ±20%.

Sprague No.	μF	Net Ea.
5HK-D10	.001	15c
5HK-D15	.0015	15c
5HK-D20	.002	15c
5HK-D22	.0022	15c
5HK-D33	.0033	15c
5HK-D39	.0039	15c
5HK-D47	.0047	15c
5HK-D50	.005	15c
5HK-D68	.0068	15c
5HK-D82	.0082	15c
5HK-S10	.01	15c
5HKS-S10	.01	15c
5HK-S15	.015	15c
5HK-S20	.02	15c
5HK-S25	.025	15c
5HK-S40	.04	27c
5HK-S50	.05	27c
5HK-P10	.1	60c
5HK-2D10	2 x .001	18c
5HK-2D15	2 x .0015	18c
5HK-2D20	2 x .002	18c
5HK-2D22	2 x .0022	18c
5HK-2D47	2 x .0047	21c
5HK-2S10	2 x .01	24c
5HK-2S20	2 x .02	30c

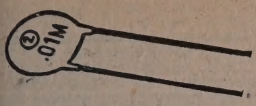
AC DISC CERAMICS

For AC line bypass uses. Rated 125 VAC or 1400 VDC.

125L-D10	.001	15c
125L-D15	.0015	15c
125L-D20	.002	15c
125L-D47	.0047	18c
125L-D50	.005	18c
125L-S10	.01	30c
125L-S20	.02	30c
125L-2D50	2 x .005	30c
125L-2S10	2 x .01	30c

(Cont'd on Following Page)

CERA-MITE® CERAMIC CAPACITORS (CONT'D)



TEMPERATURE-COMPENSATING

Eliminate oscillator drift in TV, FM, VHF and AM receivers. Rated 1000 WVDC. Std. Tol.: ±5%, 12 pF up; all others ±0.5 pF.

N030

Neg. temp. coef., 30 ppm/° C.

Sprague No.	pF	Net Ea.
10TCM-V10	1.0	15c
10TCM-V12	1.2	15c
10TCM-V15	1.5	15c
10TCM-V18	1.8	15c
10TCM-V22	2.2	15c
10TCM-V27	2.7	15c
10TCM-V30	3.0	15c
10TCM-V33	3.3	15c
10TCM-V39	3.9	15c
10TCM-V47	4.7	15c
10TCM-V50	5.0	15c
10TCM-V56	5.6	15c
10TCM-V68	6.8	15c
10TCM-V82	8.2	15c
10TCM-Q10	10	15c
10TCM-Q12	12	15c
10TCM-Q15	15	15c
10TCM-Q18	18	15c
10TCM-Q20	20	15c
10TCM-Q22	22	15c
10TCM-Q25	25	15c
10TCM-Q27	27	15c
10TCM-Q30	30	15c
10TCM-Q33	33	15c
10TCM-Q39	39	15c
10TCM-Q47	47	15c
10TCM-Q50	50	15c
10TCM-Q56	56	15c
10TCM-Q68	68	15c
10TCM-Q75	75	15c
10TCM-Q82	82	15c
10TCM-T10	100	15c
10TCM-T12	120	15c
10TCM-T15	150	15c
10TCM-T18	180	27c
10TCM-T20	200	27c
10TCM-T22	220	27c
10TCM-T27	270	30c
10TCM-T30	300	33c
10TCM-T33	330	45c
10TCM-T39	390	45c

N080

Neg. temp. coef., 80 ppm/° C.

Sprague No.	pF	Net Ea.
10TCN-V22	2.2	15c
10TCN-V27	2.7	15c
10TCN-V30	3.0	15c
10TCN-V33	3.3	15c
10TCN-V39	3.9	15c
10TCN-V47	4.7	15c
10TCN-V50	5.0	15c
10TCN-V56	5.6	15c
10TCN-V68	6.8	15c
10TCN-V82	8.2	15c
10TCN-Q10	10	15c
10TCN-Q12	12	15c
10TCN-Q15	15	15c
10TCN-Q18	18	15c
10TCN-Q20	20	15c
10TCN-Q22	22	15c
10TCN-Q25	25	15c
10TCN-Q27	27	15c
10TCN-Q30	30	15c
10TCN-Q33	33	15c
10TCN-Q39	39	15c
10TCN-Q47	47	15c
10TCN-Q50	50	15c
10TCN-Q56	56	15c
10TCN-Q68	68	15c
10TCN-Q75	75	15c
10TCN-Q82	82	15c
10TCN-T10	100	15c
10TCN-T12	120	15c
10TCN-T15	150	15c
10TCN-T18	180	27c
10TCN-T20	200	27c
10TCN-T22	220	27c
10TCN-T27	270	30c
10TCN-T30	300	30c
10TCN-T33	330	33c
10TCN-T39	390	45c
10TCN-T47	470	45c

N150

Neg. temp. coef., 150 ppm/° C.

Sprague No.	pF	Net Ea.
10TCP-V22	2.2	15c
10TCP-V27	2.7	15c
10TCP-V30	3.0	15c
10TCP-V33	3.3	15c
10TCP-V39	3.9	15c
10TCP-V47	4.7	15c
10TCP-V50	5.0	15c
10TCP-V56	5.6	15c
10TCP-V68	6.8	15c
10TCP-V82	8.2	15c
10TCP-Q10	10	15c
10TCP-Q12	12	15c
10TCP-Q15	15	15c
10TCP-Q18	18	15c
10TCP-Q20	20	15c
10TCP-Q22	22	15c
10TCP-Q25	25	15c
10TCP-Q27	27	15c
10TCP-Q30	30	15c
10TCP-Q33	33	15c
10TCP-Q39	39	15c
10TCP-Q47	47	15c
10TCP-Q50	50	15c
10TCP-Q56	56	15c
10TCP-Q68	68	15c
10TCP-Q75	75	15c
10TCP-Q82	82	15c
10TCP-T10	100	15c
10TCP-T12	120	15c
10TCP-T15	150	15c
10TCP-T18	180	15c
10TCP-T20	200	21c
10TCP-T22	220	21c
10TCP-T27	270	30c
10TCP-T30	300	30c
10TCP-T33	330	33c
10TCP-T39	390	45c
10TCP-T47	470	45c

N220

Neg. temp. coef., 220 ppm/° C.

Sprague No.	pF	Net Ea.
10TCR-V30	3.0	15c
10TCR-V33	3.3	15c
10TCR-V39	3.9	15c
10TCR-V47	4.7	15c
10TCR-V50	5.0	15c
10TCR-V56	5.6	15c
10TCR-V68	6.8	15c
10TCR-V82	8.2	15c
10TCR-Q10	10	15c
10TCR-Q12	12	15c
10TCR-Q15	15	15c
10TCR-Q18	18	15c
10TCR-Q20	20	15c
10TCR-Q22	22	15c
10TCR-Q25	25	15c
10TCR-Q27	27	15c
10TCR-Q30	30	15c
10TCR-Q33	33	15c
10TCR-Q39	39	15c
10TCR-Q47	47	15c
10TCR-Q50	50	15c
10TCR-Q56	56	15c
10TCR-Q68	68	15c
10TCR-Q75	75	15c
10TCR-Q82	82	15c
10TCR-T10	100	15c
10TCR-T12	120	15c
10TCR-T15	150	15c
10TCR-T18	180	15c
10TCR-T20	200	15c
10TCR-T22	220	21c
10TCR-T27	270	21c
10TCR-T30	300	21c
10TCR-T33	330	30c
10TCR-T39	390	33c
10TCR-T47	470	45c
10TCR-T56	560	45c

N330

Neg. temp. coef., 330 ppm/° C.

Sprague No.	pF	Net Ea.
10TCS-V30	3.0	15c
10TCS-V33	3.3	15c
10TCS-V39	3.9	15c
10TCS-V47	4.7	15c
10TCS-V50	5.0	15c
10TCS-V56	5.6	15c
10TCS-V68	6.8	15c
10TCS-V82	8.2	15c
10TCS-Q10	10	15c
10TCS-Q12	12	15c
10TCS-Q15	15	15c
10TCS-Q18	18	15c
10TCS-Q20	20	15c
10TCS-Q22	22	15c
10TCS-Q25	25	15c
10TCS-Q27	27	15c
10TCS-Q30	30	15c

N330 (Cont'd)

Sprague No.	pF	Net Ea.
10TCS-Q33	33	15c
10TCS-Q39	39	15c
10TCS-Q47	47	15c
10TCS-Q50	50	15c
10TCS-Q56	56	15c
10TCS-Q68	68	15c
10TCS-Q75	75	15c
10TCS-Q82	82	15c
10TCS-T10	100	15c
10TCS-T12	120	15c
10TCS-T15	150	15c
10TCS-T18	180	15c
10TCS-T20	200	15c
10TCS-T22	220	21c
10TCS-T27	270	21c
10TCS-T30	300	21c
10TCS-T33	330	30c
10TCS-T39	390	33c
10TCS-T47	470	45c
10TCS-T56	560	45c

N470

Neg. temp. coef., 470 ppm/° C.

Sprague No.	pF	Net Ea.
10TCT-V30	3.0	15c
10TCT-V33	3.3	15c
10TCT-V39	3.9	15c
10TCT-V47	4.7	15c
10TCT-V50	5.0	15c
10TCT-V56	5.6	15c
10TCT-V68	6.8	15c
10TCT-V82	8.2	15c
10TCT-Q10	10	15c
10TCT-Q12	12	15c
10TCT-Q15	15	15c
10TCT-Q18	18	15c
10TCT-Q20	20	15c
10TCT-Q22	22	15c
10TCT-Q25	25	15c
10TCT-Q27	27	15c
10TCT-Q30	30	15c
10TCT-Q33	33	15c
10TCT-Q39	39	15c
10TCT-Q47	47	15c
10TCT-Q50	50	15c
10TCT-Q56	56	15c
10TCT-Q68	68	15c
10TCT-Q75	75	15c
10TCT-Q82	82	15c
10TCT-T10	100	15c
10TCT-T12	120	15c
10TCT-T15	150	15c
10TCT-T18	180	15c
10TCT-T20	200	15c
10TCT-T22	220	15c
10TCT-T27	270	15c
10TCT-T30	300	21c
10TCT-T33	330	21c
10TCT-T39	390	21c
10TCT-T47	470	33c
10TCT-T56	560	45c
10TCT-T68	680	45c
10TCT-T75	750	45c

N750

Neg. temp. coef., 750 ppm/° C.

Sprague No.	pF	Net Ea.
10TCU-V47	4.7	15c
10TCU-V50	5.0	15c
10TCU-V56	5.6	15c
10TCU-V68	6.8	15c
10TCU-V82	8.2	15c
10TCU-Q10	10	15c
10TCU-Q12	12	15c
10TCU-Q15	15	15c
10TCU-Q18	18	15c
10TCU-Q20	20	15c
10TCU-Q22	22	15c
10TCU-Q25	25	15c
10TCU-Q27	27	15c
10TCU-Q30	30	15c
10TCU-Q33	33	15c
10TCU-Q39	39	15c
10TCU-Q47	47	15c
10TCU-Q50	50	15c
10TCU-Q56	56	15c
10TCU-Q68	68	15c
10TCU-Q75	75	15c
10TCU-Q82	82	15c
10TCU-T10	100	15c
10TCU-T12	120	15c
10TCU-T15	150	15c
10TCU-T18	180	15c
10TCU-T20	200	15c
10TCU-T22	220	15c
10TCU-T27	270	15c
10TCU-T30	300	15c
10TCU-T33	330	15c
10TCU-T39	390	21c
10TCU-T47	470	21c
10TCU-T56	560	30c
10TCU-T68	680	33c
10TCU-T75	750	45c
10TCU-T82	820	45c
10TCU-D10	1000	45c

N1500

Neg. temp. coef., 1500 ppm/° C.

Sprague No.	pF	Net Ea.
10TCW-Q10	10	15c
10TCW-Q12	12	15c
10TCW-Q15	15	15c
10TCW-Q18	18	15c
10TCW-Q20	20	15c
10TCW-Q22	22	15c
10TCW-Q25	25	15c
10TCW-Q27	27	15c
10TCW-Q30	30	15c
10TCW-Q33	33	15c
10TCW-Q39	39	15c
10TCW-Q47	47	15c
10TCW-Q50	50	15c
10TCW-Q56	56	15c
10TCW-Q68	68	15c
10TCW-Q75	75	15c
10TCW-Q82	82	15c
10TCW-T10	100	15c
10TCW-T12	120	15c
10TCW-T15	150	15c
10TCW-T18	180	15c
10TCW-T22	220	15c
10TCW-T27	270	15c
10TCW-T30	300	15c
10TCW-T33	330	15c
10TCW-T39	390	15c
10TCW-T47	470	21c
10TCW-T56	560	21c
10TCW-T68	680	39c
10TCW-T75	750	39c
10TCW-T82	820	39c
10TCW-D10	1000	45c
10TCW-D12	1200	45c

N2200

Neg. temp. coef., 2200 ppm/° C.

Sprague No.	pF	Net Ea.
10TCY-Q10	10	15c
10TCY-Q12	12	15c
10TCY-Q15	15	15c
10TCY-Q18	18	15c
10TCY-Q20	20	15c
10TCY-Q22	22	15c
10TCY-Q25	25	15c
10TCY-Q27	27	15c
10TCY-Q30	30	15c
10TCY-Q33	33	15c
10TCY-Q39	39	15c
10TCY-Q47	47	15c
10TCY-Q50	50	15c
10TCY-Q56	56	15c
10TCY-Q68	68	15c
10TCY-Q75	75	15c
10TCY-Q82	82	15c
10TCY-T10	100	15c
10TCY-T12	120	15c
10TCY-T15	150	15c
10TCY-T18	180	15c
10TCY-T20	200	15c
10TCY-T22	220	15c
10TCY-T27	270	15c
10TCY-T30	300	15c
10TCY-T33	330	15c
10TCY-T39	390	15c
10TCY-T47	470	15c
10TCY-T56	560	15c
10TCY-T68	680	18c
10TCY-T75	750	18c
10TCY-T82	820	21c
10TCY-D10	1000	21c
10TCY-D12	1200	30c
10TCY-D15	1500	39c
10TCY-D18	1800	45c
10TCY-D20	2000	45c
10TCY-D22	2200	45c

See following page for NPO (Discs), Hypercon Ceramic Discs and Miniaturized Ceramic Disc Capacitors.

QUANTITY PRICE INFORMATION AVAILABLE ON REQUEST.

TYPE 503D VERTI-LYTIC® MINIATURE ELECTROLYTICS

Low cost capacitors are designed for high density applications. Low leakage current and excellent stability and ESR. Operating temperature, 85° C. Metal-encased, with plastic insulating sleeve.

Sprague Number 503D-	µF	WV DC	Size, In. Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249	250-499*
476G6R3AS	47	6.3	.236 x .433	$0.300	$0.200	$0.150	$0.125
107G6R3BB	100	6.3	.315 x .492	.330	.220	.165	.138
477G6R3CG	470	6.3	.394 x .787	.480	.308	.231	.193
687G6R3DG	680	6.3	.512 x .787	.630	.408	.306	.255
108G6R3DK	1000	6.3	.512 x .984	.750	.500	.375	.313
158G6R3EK	1500	6.3	.630 x .984	.930	.620	.465	.388
228G6R3ER	2200	6.3	.630 x 1.240	1.110	.736	.552	.460
338G6R3ET	3300	6.3	.630 x 1.614	1.440	.960	.720	.600
336G010AS	33	10	.236 x .433	.300	.200	.150	.125
686G010BB	68	10	.315 x .492	.330	.220	.165	.138
107G010CB	100	10	.394 x .492	.360	.240	.180	.150
157G010CB	150	10	.394 x .492	.360	.240	.180	.150
227G010CD	220	10	.394 x .63	.420	.268	.201	.168
337G010CG	330	10	.394 x .787	.480	.308	.231	.193
477G010DG	470	10	.512 x .787	.630	.408	.306	.255
687G010DK	680	10	.512 x .984	.750	.500	.375	.313
108G010EK	1000	10	.630 x .984	.930	.620	.465	.388
158G010ER	1500	10	.630 x 1.240	1.110	.736	.552	.460
228G010EU	2200	10	.630 x 1.437	1.230	.804	.603	.503
685G016HS	6.8	16	.197 x .433	.300	.200	.150	.125
106G016HS	10	16	.197 x .433	.300	.200	.150	.125
156G016AS	15	16	.236 x .433	.300	.200	.150	.125
226G016AS	22	16	.236 x .433	.300	.200	.150	.125
476G016BB	47	16	.315 x .492	.330	.220	.165	.138
686G016CB	68	16	.394 x .492	.360	.240	.180	.150
107G016CD	100	16	.394 x .630	.420	.268	.201	.168
157G016CD	150	16	.394 x .630	.360	.240	.180	.150
227G016CG	220	16	.394 x .787	.480	.308	.231	.193
337G016DG	330	16	.512 x .787	.630	.408	.306	.255
477G016DK	470	16	.512 x .984	.750	.500	.375	.313
687G016EK	680	16	.630 x .984	.930	.620	.465	.388
108G016ER	1000	16	.630 x 1.240	1.110	.736	.552	.460
158G016ET	1500	16	.630 x 1.614	1.440	.960	.720	.600
474G025HS	0.47	25	.197 x .433	.300	.200	.150	.125
684G025HS	0.68	25	.197 x .433	.300	.200	.150	.125
105G025HS	1.0	25	.197 x .433	.300	.200	.150	.125
155G025HS	1.5	25	.197 x .433	.300	.200	.150	.125
225G025HS	2.2	25	.197 x .433	.300	.200	.150	.125
335G025HS	3.3	25	.197 x .433	.300	.200	.150	.125
475G025HS	4.7	25	.197 x .433	.300	.200	.150	.125
685G025AS	6.8	25	.236 x .433	.300	.200	.150	.125
106G025AS	10	25	.236 x .433	$0.300	$0.200	$0.150	$0.125
156G025BB	15	25	.315 x .492	.330	.220	.165	.138
226G025BB	22	25	.315 x .492	.330	.220	.165	.138
336G025BB	33	25	.315 x .492	.330	.220	.165	.138
476G025CB	47	25	.394 x .492	.360	.240	.180	.150
686G025CD	68	25	.394 x .630	.420	.268	.201	.168
107G025CG	100	25	.394 x .787	.480	.308	.231	.193
157G025DG	150	25	.512 x .787	.630	.408	.306	.255
227G025DG	220	25	.512 x .787	.630	.408	.306	.255
337G025DK	330	25	.512 x .984	.750	.500	.375	.313
477G025EK	470	25	.630 x .984	.930	.620	.465	.388
687G025ER	680	25	.630 x 1.240	1.110	.736	.552	.460
108G025EU	1000	25	.630 x 1.437	1.230	.804	.603	.503
685G035AS	6.8	35	.236 x .433	.300	.200	.150	.125
336G035CB	33	35	.394 x .492	.360	.240	.180	.150
476G035CD	47	35	.394 x .630	.420	.268	.201	.168
157G035DG	150	35	.512 x .787	.630	.408	.306	.255
227G035DK	220	35	.512 x .984	.750	.500	.375	.313
337G035EK	330	35	.630 x .984	.930	.620	.465	.388
477G035ER	470	35	.630 x 1.240	1.110	.736	.552	.460
687G035EU	680	35	.630 x 1.437	1.230	.804	.603	.503
225G050HS	2.2	50	.197 x .433	.300	.200	.150	.125
475G050AS	4.7	50	.236 x .433	.300	.200	.150	.125
156G050BB	15	50	.315 x .492	.330	.220	.165	.138
336G050CD	33	50	.394 x .630	.420	.268	.201	.168
686G050CG	68	50	.394 x .787	.480	.308	.231	.193
107G050DG	100	50	.512 x .787	.630	.408	.306	.255
227G050EK	220	50	.630 x .984	.930	.620	.465	.388
337G050ER	330	50	.630 x 1.240	1.110	.736	.552	.460
477G050ET	470	50	.630 x 1.614	1.440	.960	.720	.600
474G063HS	0.47	63	.197 x .433	.330	.220	.165	.138
684G063HS	0.68	63	.197 x .433	.330	.220	.165	.138
105G063HS	1.0	63	.197 x .433	.330	.220	.165	.138
155G063HS	1.5	63	.197 x .433	.330	.220	.165	.138
225G063AS	2.2	63	.236 x .433	.330	.220	.165	.138
335G063AS	3.3	63	.236 x .433	.330	.220	.165	.138
475G063BB	4.7	63	.315 x .492	.390	.244	.183	.153
685G063BB	6.8	63	.315 x .492	.390	.244	.183	.153
106G063BB	10	63	.315 x .492	.390	.244	.183	.153
156G063CB	15	63	.394 x .492	.420	.264	.198	.165
226G063CB	22	63	.394 x .492	.420	.264	.198	.165
336G063CG	33	63	.394 x .787	.510	.336	.252	.210
476G063CG	47	63	.394 x .787	.510	.336	.252	.210
686G063DG	68	63	.512 x .787	.690	.448	.336	.280
107G063DK	100	63	.512 x .984	.840	.552	.414	.345
157G063EK	150	63	.630 x .984	1.020	.680	.510	.425
227G063EU	220	63	.630 x 1.437	1.350	.884	.663	.553
337G063ET	330	63	.630 x 1.614	1.590	1.056	.792	.660

CERAMIC DISC CAPACITORS

CERA-MITE® NPO (DISCS)

Zero temperature-coefficient capacitors used where capacitance change with temperature is undesirable. Superior to silvered-mica types in stability, high "Q" and insulation resistance. Rated 1000 WVDC. Std. Tol.: ±5%, 12 pF up; all others ±0.5 pF.

Sprague No.	pF	Net Each
10TCC-V10	1	$0.15
10TCC-V12	1.2	.15
10TCC-V15	1.5	.15
10TCC-V18	1.8	.15
10TCC-V22	2.2	.15
10TCC-V27	2.7	.15
10TCC-V30	3.0	.15
10TCC-V33	3.3	.15
10TCC-V39	3.9	.15
10TCC-V47	4.7	.15
10TCC-V50	5.0	.15
10TCC-V56	5.6	.15
10TCC-V68	6.8	.15
10TCC-V82	8.2	.15
10TCC-Q10	10	.15
10TCC-Q12	12	.15
10TCC-Q15	15	.15
10TCC-Q18	18	.15
10TCC-Q20	20	.15
10TCC-Q22	22	.15
10TCC-Q25	25	.15
10TCC-Q27	27	.15
10TCC-Q30	30	.15
10TCC-Q33	33	.15
10TCC-Q39	39	.15
10TCC-Q47	47	.15
10TCC-Q50	50	.15
10TCC-Q56	56	.15
10TCC-Q68	68	.15
10TCC-Q75	75	.15
10TCC-Q82	82	.15
10TCC-T10	100	.15
10TCC-T12	120	.15
10TCC-T15	150	.15
10TCC-T18	180	.27
10TCC-T20	200	.27
10TCC-T33	330	.45
10TCC-T39	390	.45

HYPERCON® CERAMIC DISCS

Ultra-miniature discs for transistorized circuitry, bypass and coupling. Especially suited for any low voltage use where high capacitance and low power factors are important. Std. Tol.: HY-420–HY470 and HY-510–HY-550, +80 −20%; all others +50 −20%.

Sprague No.	µF	WVDC	Net Each
HY-340	.022	12	$0.15
HY-345	.033	12	.15
HY-350	.047	12	.15
HY-355	.068	12	.15
HY-360	.1	12	.18
HY-365	.15	12	.24
HY-370	.22	12	.27
HY-375	.33	12	.33
HY-380	.47	12	.45
HY-420	.01	16	.15
HY-425	.022	16	.15
HY-430	.033	16	.15
HY-435	.047	16	.15
HY-440	.068	16	.15
HY-450	.1	16	.15
HY-470	.2	16	.27
HY-625	.022	16	.15
HY-630	.033	16	.15
HY-635	.047	16	.15
HY-640	.068	16	.15
HY-650	.1	16	.15
HY-665	.15	16	.24
HY-670	.22	16	.27
HY-675	.33	16	.33
HY-510	.0047	25	.15
HY-520	.01	25	.15
HY-525	.022	25	.15
HY-530	.033	25	.15
HY-535	.047	25	.18
HY-540	.068	25	.18
HY-550	.1	25	.21
HY-720	.015	25	.15
HY-725	.022	25	.15
HY-750	.1	25	.24
HY-765	.15	25	.27
HY-770	.22	25	.39

MINIATURIZED CERAMIC DISC CAPACITORS

Designed for transistorized circuitry. Small size allows easy fit into tight spaces. Moisture-proof coating protects against severe humidity and vibration. Coupling and bypass. High capacitance, low voltage. Standard tolerance, ±20%. Designed for 85° C continuous operation.

Sprague Number	Cap., µF	VDC	Net Each*
TGL-S50	.05	100	$0.15
TG-D50	.005	100	.15
TG-S10	.01	100	.15
TG-S20	.02	100	.15
TG-S25	.025	100	.15
TG-S30	.03	100	.15
TG-S50	.05	100	.30
TG-P10	.1	100	.36

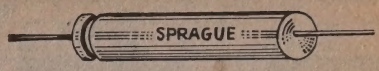
*Quantity prices available on request.

OUR STOCKS ARE COMPLETE AND UP TO DATE.

SPRAGUE Electrolytic Capacitors

TYPE 39D POWERLYTIC® TUBULAR ELECTROLYTIC CAPACITORS

Type 39D electrolytics supplement the original type 36D Powerlytics by offering lower capacitance values in a small case size. Ideal for applications requiring the greatest possible capacitance for a given compact case, such as transistorized apparatus. All have end seals of an improved molded phenolic, an outer insulation of flexible plastic, and a pressure-sensitive safety vent. Welds at all critical anode and cathode terminals eliminate riveted or pressure connections, assuring freedom from open circuits even during operation in the microvolt or millivolt signal range. Operating temperature, up to +85° C.



Sprague Number	Cap., μF	WV DC	Size *	Net Each, Lots of 1-24	25-49	50-99	100-499
39D407G003EE4	400	3	A	$1.80	$0.90	$0.79	$0.59
39D907G003EJ4	900	3	B	1.88	.94	.83	.62
39D138G003EL4	1,300	3	C	1.94	.97	.85	.63
39D148G003GE4	1,400	3	G	2.00	1.00	.88	.65
39D188G003FJ4	1,800	3	D	2.00	1.00	.88	.65
39D218G003HE4	2,100	3	K	2.14	1.07	.94	.70
39D278G003FL4	2,700	3	E	2.12	1.06	.93	.69
39D298G003GJ4	2,900	3	H	2.16	1.08	.95	.71
39D308G003JE4	3,000	3	P	2.30	1.15	1.01	.75
39D368G003FP4	3,600	3	F	2.22	1.11	.98	.73
39D428G003HJ4	4,200	3	L	2.34	1.17	1.03	.76
39D438G003GL4	4,300	3	I	2.30	1.15	1.01	.75
39D578G003GP4	5,700	3	J	2.46	1.23	1.08	.80
39D608G003JJ4	6,000	3	Q	2.58	1.29	1.13	.84
39D858G003HP4	8,500	3	N	2.78	1.39	1.22	.91
39D908G003JL4	9,000	3	R	2.86	1.43	1.26	.93
39D109G003HS4	10,000	3	O	3.00	1.50	1.32	.98
39D129G003JP4	12,000	3	S	3.10	1.55	1.36	1.01
39D159G003JS4	15,000	3	T	3.40	1.70	1.49	1.11
39D189G003JT4	18,000	3	U	3.70	1.85	1.62	1.21
99D307G006EE4	300	6	A	1.80	.90	.79	.59
39D607G006EJ4	600	6	B	1.88	.94	.83	.62
39D907G006EL4	900	6	C	1.94	.97	.85	.63
39D108G006GE4	1,000	6	G	2.00	1.00	.88	.65
39D128G006FJ4	1,200	6	D	2.00	1.00	.88	.65
39D158G006HE4	1,500	6	K	2.14	1.07	.94	.70
39D198G006FL4	1,900	6	E	2.12	1.06	.93	.69
39D208G006GJ4	2,000	6	H	2.16	1.08	.95	.71
39D218G006JE4	2,100	6	P	2.30	1.15	1.01	.75
39D258G006FP4	2,500	6	F	2.22	1.11	.98	.73
39D308G006GL4	3,000	6	I	2.30	1.15	1.01	.75
39D408G006GP4	4,000	6	J	2.46	1.23	1.08	.80
39D428G006JJ4	4,200	6	Q	2.58	1.29	1.13	.84
39D608G006HP4	6,000	6	N	2.78	1.39	1.22	.91
39D638G006JL4	6,300	6	R	2.86	1.43	1.26	.93
39D758G006HS4	7,500	6	O	3.00	1.50	1.32	.98
39D858G006JP4	8,500	6	S	3.10	1.55	1.36	1.01
39D109G006JS4	10,000	6	T	3.40	1.70	1.49	1.11
39D129G006JT4	12,000	6	U	3.70	1.85	1.62	1.21
39D257G010EE4	250	10	A	1.80	.90	.79	.59
39D507G010EJ4	500	10	B	1.88	.94	.83	.62
39D807G010EL4	800	10	C	1.94	.97	.85	.63
39D857G010GE4	850	10	G	2.00	1.00	.88	.65
39D108G010FJ4	1,000	10	D	2.00	1.00	.88	.65
39D128G010HE4	1,200	10	K	2.14	1.07	.94	.70
39D168G010FL4	1,600	10	E	2.12	1.06	.93	.69
39D178G010GJ4	1,700	10	H	2.16	1.08	.95	.71
39D218G010FP4	2,100	10	F	2.22	1.11	.98	.73
39D258G010GL4	2,500	10	I	2.30	1.15	1.01	.75
39D348G010GP4	3,400	10	J	2.46	1.23	1.08	.80
39D358G010JJ4	3,500	10	Q	2.58	1.29	1.13	.84
39D508G010HP4	5,000	10	N	2.78	1.39	1.22	.91
39D528G010JL4	5,200	10	R	2.86	1.43	1.26	.93
39D638G010HS4	6,300	10	O	3.00	1.50	1.32	.98
39D718G010JP4	7,100	10	S	3.10	1.55	1.36	1.01
39D888G010JS4	8,800	10	T	3.40	1.70	1.49	1.11
39D109G010JT4	10,000	10	U	3.70	1.85	1.62	1.21
39D207G015EE4	200	15	A	1.80	.90	.79	.59
39D407G015EJ4	400	15	B	1.88	.94	.83	.62
39D607G015EL4	600	15	C	1.94	.97	.85	.63
39D807G015FJ4	800	15	D	2.00	1.00	.88	.65
39D957G015HE4	950	15	K	2.14	1.07	.94	.70
39D128G015FL4	1,200	15	E	2.12	1.06	.93	.69
39D138G015GJ4	1,300	15	H	2.16	1.08	.95	.71
39D168G015FP4	1,600	15	F	2.22	1.11	.98	.73
39D198G015GL4	1,900	15	I	2.30	1.15	1.01	.75
39D258G015GP4	2,500	15	J	2.46	1.23	1.08	.80
39D268G015JJ4	2,600	15	Q	2.58	1.29	1.13	.84
39D388G015HP4	3,800	15	N	2.78	1.39	1.22	.91
39D408G015JL4	4,000	15	R	2.86	1.43	1.26	.93
39D478G015HS4	4,700	15	O	3.00	1.50	1.32	.98
39D538G015JP4	5,300	15	S	3.10	1.55	1.36	1.01
39D668G015JS4	6,600	15	T	3.40	1.70	1.49	1.11
39D808G015JT4	8,000	15	U	3.70	1.85	1.62	1.21
39D107G025EE4	100	25	A	1.80	.90	.79	.59
39D207G025EJ4	200	25	B	1.88	.94	.83	.62
39D357G025EL4	350	25	C	1.94	.97	.85	.63
39D457G025FJ4	450	25	D	2.00	1.00	.88	.65
39D507G025HE4	500	25	K	2.14	1.07	.94	.70
39D707G025FL4	700	25	E	2.12	1.06	.93	.69
39D757G025GJ4	750	25	H	2.16	1.08	.95	.71
39D807G025JE4	800	25	P	2.30	1.15	1.01	.75
39D957G025FP4	950	25	F	2.22	1.11	.98	.73
39D108G025GL4	1,000	25	I	2.30	1.15	1.01	.75
39D118G025HJ4	1,100	25	L	2.34	1.17	1.03	.76
39D158G025GP4	1,500	25	J	2.46	1.23	1.08	.80
39D168G025JJ4	1,600	25	Q	2.58	1.29	1.13	.84
39D178G025HL4	1,700	25	M	2.56	1.28	1.12	.84
39D228G025HP4	2,200	25	N	2.78	1.39	1.22	.91
39D248G025JL4	2,400	25	R	2.86	1.43	1.26	.93
39D288G025HS4	2,800	25	O	3.00	1.50	1.32	.98
39D328G025JP4	3,200	25	S	3.10	1.55	1.36	1.01
39D408G025JS4	4,000	25	T	3.40	1.70	1.49	1.11
39D478G025JT4	4,700	25	U	3.70	1.85	1.62	1.21
39D756G030EE4	75	30	A	1.80	.90	.79	.59
39D157G030EJ4	150	30	B	1.88	.94	.83	.62
39D257G030EL4	250	30	C	$1.94	$0.97	$0.85	$0.63
39D357G030FJ4	350	30	D	2.00	1.00	.88	.65
39D407G030HE4	400	30	K	2.14	1.07	.94	.70
39D507G030FL4	500	30	E	2.12	1.06	.93	.69
39D607G030JE4	600	30	P	2.30	1.15	1.01	.75
39D707G030FP4	700	30	F	2.22	1.11	.98	.73
39D857G030GL4	850	30	I	2.30	1.15	1.01	.75
39D118G030GP4	1,100	30	J	2.46	1.23	1.08	.80
39D128G030HL4	1,200	30	M	2.56	1.28	1.12	.84
39D178G030HP4	1,700	30	N	2.78	1.39	1.22	.91
39D188G030JL4	1,800	30	R	2.86	1.43	1.26	.93
39D218G030HS4	2,100	30	O	3.00	1.50	1.32	.98
39D248G030JP4	2,400	30	S	3.10	1.55	1.36	1.01
39D308G030JS4	3,000	30	T	3.40	1.70	1.49	1.11
39D368G030JT4	3,600	30	U	3.70	1.85	1.62	1.21
39D756G040EE4	75	40	A	1.80	.90	.79	.59
39D157G040EJ4	150	40	B	1.88	.94	.83	.62
39D157G040EL4	200	40	C	1.94	.97	.85	.63
39D257G040GE4	250	40	G	2.00	1.00	.88	.65
39D307G040FJ4	300	40	D	2.00	1.00	.88	.65
39D357G040HE4	350	40	K	2.14	1.07	.94	.70
39D457G040FL4	450	40	E	2.12	1.06	.93	.69
39D507G040GJ4	500	40	H	2.16	1.08	.95	.71
39D607G040FP4	600	40	F	2.22	1.11	.98	.73
39D757G040GL4	750	40	I	2.30	1.15	1.01	.75
39D108G040GP4	1,000	40	J	2.46	1.23	1.08	.80
39D118G040HL4	1,100	40	M	2.56	1.28	1.12	.84
39D158G040HP4	1,500	40	N	2.78	1.39	1.22	.91
39D168G040JL4	1,600	40	R	2.86	1.43	1.26	.93
39D198G040HS4	1,900	40	O	3.00	1.50	1.32	.98
39D218G040JP4	2,100	40	S	3.10	1.55	1.36	1.01
39D268G040JS4	2,600	40	T	3.40	1.70	1.49	1.11
39D328G040JT4	3,200	40	U	3.70	1.85	1.62	1.21
39D506G050EE4	50	50	A	1.80	.90	.79	.59
39D107G050EJ4	100	50	B	1.88	.94	.83	.62
39D157G050EL4	150	50	C	1.94	.97	.85	.63
39D207G050FJ4	200	50	D	2.00	1.00	.88	.65
39D257G050HE4	250	50	K	2.14	1.07	.94	.70
39D357G050FL4	350	50	E	2.12	1.06	.93	.69
39D457G050FP4	450	50	F	2.22	1.11	.98	.73
39D507G050GL4	500	50	I	2.30	1.15	1.01	.75
39D707G050GP4	700	50	J	2.46	1.23	1.08	.80
39D757G050JJ4	750	50	Q	2.58	1.29	1.13	.84
39D807G050HL4	800	50	M	2.56	1.28	1.12	.84
39D118G050HP4	1,100	50	N	2.78	1.39	1.22	.91
39D138G050HS4	1,300	50	O	3.00	1.50	1.32	.98
39D158G050JP4	1,500	50	S	3.10	1.55	1.36	1.01
39D198G050JS4	1,900	50	T	3.40	1.70	1.49	1.11
39D238G050JT4	2,300	50	U	3.70	1.85	1.62	.121
39D306G075EE4	30	75	A	1.80	.90	.79	.59
39D756G075EJ4	75	75	B	1.88	.94	.83	.62
39D107G075EL4	100	75	C	1.94	.97	.85	.63
39D157G075FJ4	150	75	D	2.00	1.00	.88	.65
39D207G075FL4	200	75	E	2.12	1.06	.93	.69
39D257G075JE4	250	75	P	2.30	1.15	1.01	.75
39D307G075FP4	300	75	F	2.22	1.11	.98	.73
39D357G075GL4	350	75	I	2.30	1.15	1.01	.75
39D457G075GP4	450	75	J	2.46	1.23	1.08	.80
39D507G075HL4	500	75	M	2.56	1.28	1.12	.84
39D707G075HP4	700	75	N	2.78	1.39	1.22	.91
39D757G075JL4	750	75	R	2.86	1.43	1.26	.93
39D857G075HS4	850	75	O	3.00	1.50	.132	.98
39D108G075JP4	1,000	75	S	3.10	1.55	1.36	1.01
39D128G075JS4	1,200	75	T	3.40	1.70	1.49	1.11
39D158G075JT4	1,500	75	U	3.70	1.85	1.62	1.21
39D156F100EE4	15	100	A	1.80	.90	.79	.59
39D356F100EJ4	35	100	B	1.88	.94	.83	.62
39D556F100EL4	55	100	C	1.94	.97	.85	.63
39D606F100GE4	60	100	G	2.00	1.00	.88	.65
39D756F100FJ4	75	100	D	2.00	1.00	.88	.65
39D906F100HE4	90	100	K	2.14	1.07	.94	.70
39D117F100FL4	110	100	E	2.12	1.06	.93	.69
39D127F100GJ4	120	100	H	2.16	1.08	.95	.71
39D137F100JE4	130	100	P	2.30	1.15	1.01	.75
39D157F100FP4	150	100	F	2.22	1.11	.98	.73
39D187F100HJ4	180	100	L	2.34	1.17	1.03	.76
39D197F100GL4	190	100	I	2.30	1.15	1.01	.75
39D257F100GP4	250	100	J	2.46	1.23	1.08	.80
39D267F100JJ4	260	100	Q	2.58	1.29	1.13	.84
39D287F100HL4	280	100	M	2.56	1.28	1.12	.84
39D377F100HP4	370	100	N	2.78	1.39	1.22	.91
39D397F100JL4	390	100	R	2.86	1.43	1.26	.93
39D467F100HS4	460	100	O	3.00	1.50	1.32	.98
39D527F100JP4	520	100	S	3.10	1.55	1.36	1.01
39D657F100JS4	650	100	T	3.40	1.70	1.49	1.11
39D787F100JT4	780	100	U	3.70	1.85	1.62	1.21
39D106F150EE4	10	150	A	1.80	.90	.79	.59
39D256F150EJ4	25	150	B	1.88	.94	.83	.62
39D406F150EL4	40	150	C	1.94	.97	.85	.63
39D506F150FJ4	50	150	D	2.00	1.00	.88	.65
39D606F150HE4	60	150	K	2.14	1.07	.94	.70
39D806F150FL4	80	150	E	2.12	1.06	.93	.69
39D856F150GJ4	85	150	H	2.16	1.08	.95	.71
39D886F150JE4	88	150	P	2.30	1.15	1.01	.75
39D107F150FP4	100	150	F	2.22	1.11	.98	.73
39D127F150GL4	120	150	I	2.30	1.15	1.01	.75

TYPE 39D CONTINUED ON THE FOLLOWING PAGE

TYPE 39D POWERLYTIC® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

Sprague Number	Cap., µF	WV DC	Size *	Net Each, Lots of 1-24	25-49	50-99	100-499
39D267F150JL4	260	150	R	$2.86	$1.43	$1.26	$0.93
39D317F150HS4	310	150	O	3.00	1.50	1.32	.98
39D357F150JP4	350	150	S	3.10	1.55	1.36	1.01
39D447F150JS4	440	150	T	3.40	1.70	1.49	1.11
39D537F150JT4	530	150	U	3.70	1.85	1.62	1.21
39D905F200EE4	9	200	A	1.80	.90	.79	.59
39D156F200EJ4	15	200	B	1.88	.94	.83	.62
39D256F200EL4	25	200	C	1.94	.97	.85	.63
39D306F200GE4	30	200	G	2.00	1.00	.88	.65
39D356F200FJ4	35	200	D	2.00	1.00	.88	.65
39D406F200HE4	40	200	K	2.14	1.07	.94	.70
39D556F200FL4	55	200	E	2.12	1.06	.93	.69
39D606F200GJ4	60	200	H	2.16	1.08	.95	.71
39D756F200FP4	75	200	F	2.22	1.11	.98	.73
39D806F200HJ4	80	200	L	2.34	1.17	1.03	.76
39D906F200GL4	90	200	I	2.30	1.15	1.01	.75
39D127F200GP4	120	200	J	2.46	1.23	1.08	.80
39D137F200HL4	130	200	M	2.78	1.39	1.22	.91
39D177F200HP4	170	200	N	2.86	1.43	1.26	.93
39D187F200JL4	180	200	R	3.00	1.50	1.32	.98
39D227F200HS4	220	200	O	3.10	1.55	1.36	1.01
39D257F200JP4	250	200	S	3.40	1.70	1.49	1.11
39D317F200JS4	310	200	T	3.70	1.85	1.62	1.21
39D377F200JT4	370	200	U	1.80	.90	.79	.59
39D705F250EE4	7	250	A	1.88	.94	.83	.62
39D156F250EJ4	15	250	B	1.94	.97	.85	.63
39D206F250EL4	20	250	C	2.00	1.00	.88	.65
39D306F250FJ4	30	250	D	2.14	1.07	.94	.70
39D356F250HE4	35	250	K	2.12	1.06	.93	.69
39D456F250FL4	45	250	E	2.30	1.15	1.01	.75
39D506F250JE4	50	250	P	2.22	1.11	.98	.73
39D606F250FP4	60	250	F	2.30	1.15	1.01	.75
39D706F250GL4	70	250	I	2.46	1.23	1.08	.80
39D956F250GP4	95	250	J	2.56	1.28	1.12	.84
39D107F250HL4	100	250	M	2.78	1.39	1.22	.91
39D147F250HP4	140	250	N	2.86	1.43	1.26	.93
39D157F250JL4	150	250	R	3.00	1.50	1.32	.98
39D187F250HS4	180	250	O	3.10	1.55	1.36	1.01
39D207F250JP4	200	250	S	3.40	1.70	1.49	1.11
39D257F250JS4	250	250	T	3.70	1.85	1.62	1.21
39D307F250JT4	300	250	U	1.80	.90	.79	.59
39D505F300EE4	5	300	A	1.88	.94	.83	.62
39D106F300EJ4	10	300	B	1.94	.97	.85	.63
39D156F300EL4	15	300	C	2.00	1.00	.88	.65
39D206F300FJ4	20	300	D	2.14	1.07	.94	.70
39D256F300HE4	25	300	K				
39D306F300FL4	30	300	E	$2.12	$1.06	$0.93	$0.69
39D127F300HS4	120	300	O	3.00	1.50	1.32	.98
39D137F300JP4	130	300	S	3.10	1.55	1.36	1.01
39D117F300JS4	170	300	T	3.40	1.70	1.49	1.11
39D207F300JT4	200	300	U	3.70	1.85	1.62	1.21
39D405F350EE4	4	350	A	1.80	.90	.79	.59
39D805F350EJ4	8	350	B	1.88	.94	.83	.62
39D126F350EL4	12	350	C	1.94	.97	.85	.63
39D156F350FJ4	15	350	D	2.00	1.00	.88	.65
39D206F350FL4	20	350	E	2.12	1.06	.93	.69
39D256F350GJ4	25	350	H	2.16	1.08	.95	.71
39D306F350FP4	30	350	F	2.22	1.11	.98	.73
39D406F350GL4	40	350	I	2.30	1.15	1.01	.75
39D506F350GP4	50	350	J	2.30	1.15	1.01	.75
39D606F350HL4	60	350	M	2.56	1.28	1.12	.84
39D806F350HP4	80	350	N	2.78	1.39	1.22	.91
39D107F350HS4	100	350	O	3.00	1.50	1.32	.98
39D117F350JP4	110	350	S	3.10	1.55	1.36	1.01
39D137F350JS4	130	350	T	3.40	1.70	1.49	1.11
39D167F350JT4	160	350	U	3.70	1.85	1.62	1.21
39D205F400EE4	2	400	A	1.80	.90	.79	.59
39D505F400EJ4	5	400	B	1.88	.94	.83	.62
39D106F400FJ4	10	400	D	2.00	1.00	.88	.65
39D156F400FL4	15	400	E	2.12	1.06	.93	.69
39D206F400FP4	20	400	F	2.22	1.11	.98	.73
39D256F400GL4	25	400	I	2.30	1.15	1.01	.75
39D356F400GP4	35	400	J	2.46	1.23	1.08	.80
39D406F400HL4	40	400	M	2.56	1.28	1.12	.84
39D556F400HP4	55	400	N	2.78	1.39	1.22	.91
39D656F400HS4	65	400	O	3.00	1.50	1.32	.98
39D756F400JP4	75	400	S	3.10	1.55	1.36	1.01
39D906F400JS4	90	400	T	3.40	1.70	1.49	1.11
39D117F400JT4	110	400	U	3.70	1.85	1.62	1.21
39D105F450EE4	1	450	A	1.80	.90	.79	.59
39D305F450EJ4	3	450	B	1.88	.94	.83	.62
39D505F450EL4	5	450	C	1.94	.97	.85	.63
39D106F450FL4	10	450	E	2.12	1.06	.93	.69
39D156F450FP4	15	450	F	2.22	1.11	.98	.73
39D206F450GL4	20	450	I	2.30	1.15	1.01	.75
39D256F450GP4	25	450	J	2.46	1.23	1.08	.80

***SIZE**

Size in inches (dia. x lg.): **A,** 5/16 x 1 1/4; **B,** 5/16 x 1 3/4; **C,** 5/16 x 2 1/4; **D,** 1 1/16 x 1 3/4; **E,** 1 1/16 x 2 1/4; **F,** 1 1/16 x 2 3/4; **G,** 1 3/16 x 1 1/4; **H,** 1 3/16 x 1 3/4; **I,** 1 3/16 x 2 1/4; **J,** 1 3/16 x 2 3/4; **K,** 1 5/16 x 1 1/4; **L,** 1 5/16 x 1 3/4; **M,** 1 5/16 x 2 1/4; **N,** 1 5/16 x 2 3/4; **O,** 1 5/16 x 3 1/4; **P,** 1 1/16 x 1 1/4; **Q,** 1 1/16 x 1 3/4; **R,** 1 1/16 x 2 1/4; **S,** 1 1/16 x 2 3/4; **T,** 1 1/16 x 3 1/4; **U,** 1 1/16 x 3 3/4.

TYPE 36D POWERLYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

Especially suitable for replacement applications. Maximum space economy at operating temperatures up to 85° C. Low ESR and leakage currents. Extremely long shelf life. Uses most reliable seal developed for aluminum electrolytic capacitors. Pressure-type safety vents employing silicone rubber are used on all cases. Capacitors listed have low-insert terminals; change last character of model no. from A to **B** for high-insert or A to **C** for solder-lug terminals, price on request.

3 WVDC

Sprague Number	Cap., µF	*
36D103G003AA2A	10000	AA1
36D203G003AB2A	20000	AB1
36D303G003AC2A	30000	AC1
36D363G003AD2A	36000	AD1
36D413G003AE2A	41000	AE1
36D463G003AF2A	46000	AF1
36D473G003BB2A	47000	BB1
36D703G003BC2A	70000	BC1
36D803G003CB2A	80000	CB1
36D823G003BD2A	82000	BD1
36D943G003BE2A	94000	BE1
36D104G003BF2A	100000	BF1
36D124G003CC2A	120000	CC1
36D144G003CD2A	140000	CD1
36D164G003CE2A	160000	CE1
36D174G003DC2A	170000	DC1
36D184G003CF2A	180000	CF1
36D204G003DD2A	200000	DD1
36D234G003DE2A	230000	DE1
36D274G003DF2A	270000	DF1

6 WVDC

Sprague Number	Cap., µF	*
36D702G006AA2A	7000	AA1
36D143G006AB2A	14000	AB1
36D213G006AC2A	21000	AC1
36D253G006AD2A	25000	AD1
36D293G006AE2A	29000	AE1
36D323G006AF2A	32000	AF1
36D333G006BB2A	33000	BB1
36D503G006BC2A	50000	BC1
36D573G006CB2A	57000	CB1
36D583G006BD2A	58000	BD1
36D663G006BE2A	66000	BE1
36D753G006BF2A	75000	BF1
36D863G006CC2A	86000	CC1
36D104G006CD2A	100000	CD1
36D114G006CE2A	110000	CE1
36D124G006DC2A	120000	DC1
36D144G006DD2A	140000	DD1
36D164G006DE2A	160000	DE1
36D194G006DF2A	190000	DF1

10 WVDC

Sprague Number	Cap., µF	*
36D602G010AA2A	6000	AA1
36D123G010AB2A	12000	AB1
36D183G010AC2A	18000	AC1
36D213G010AD2A	21000	AD1
36D243G010AE2A	24000	AE1
36D273G010AF2A	27000	AF1
36D283G010BB2A	28000	BB1
36D423G010BC2A	42000	BC1
36D483G010CB2A	48000	CB1
36D493G010BD2A	49000	BD1
36D563G010BE2A	56000	BE1
36D633G010BF2A	63000	BF1
36D723G010CC2A	72000	CC1
36D843G010CD2A	84000	CD1
36D963G010CE2A	96000	CE1
36D104G010CF2A	100000	CF1
36D104G010DC2A	100000	DC1
36D124G010DD2A	120000	DD1
36D144G010DE2A	140000	DE1
36D164G010DF2A	160000	DF1

15 WVDC

Sprague Number	Cap., µF	*
36D462G015AA2A	4600	AA1
36D922G015AB2A	9200	AB1
36D133G015AC2A	13000	AC1
36D163G015AD2A	16000	AD1
36D183G015AE2A	18000	AE1
36D203G015AF2A	20000	AF1
36D213G015BB2A	21000	BB1
36D313G015BC2A	31000	BC1
36D363G015CB2A	36000	BC1
36D373G015BD2A	37000	BD1
36D423G015BE2A	42000	BE1
36D473G015BF2A	47000	BF1
36D543G015CC2A	54000	CC1
36D633G015CD2A	63000	CD1
36D723G015CE2A	72000	CE1
36D803G015DC2A	80000	DC1
36D813G015CF2A	81000	CF1
36D933G015DD2A	93000	DD1
36D104G015DE2A	100000	DE1
36D124G015DF2A	120000	DF1

25 WVDC

Sprague Number	Cap., µF	*
36D272G025AA2A	2700	AA1
36D552G025AB2A	5500	AB1
36D822G025AC2A	8200	AC1
36D962G025AD2A	9600	AD1
36D113G025AE2A	11000	AE1
36D123G025AF2A	12000	AF1
36D183G025BC2A	18000	BC1
36D213G025CB2A	21000	CB1
36D223G025BD2A	22000	BD1
36D253G025BE2A	25000	BE1
36D283G025BF2A	28000	BF1
36D323G025CC2A	32000	CC1
36D383G025CD2A	38000	CD1
36D433G025CE2A	43000	CE1
36D473G025DC2A	47000	DC1
36D483G025CF2A	48000	CF1
36D553G025DD2A	55000	DD1
36D633G025DE2A	63000	DE1
36D713G025DF2A	71000	DF1

30 WVDC

Sprague Number	Cap., µF	*
36D202G030AA2A	2000	AA1
36D402G030AB2A	4000	AB1
36D602G030AC2A	6000	AC1
36D722G030AD2A	7200	AD1
36D832G030AE2A	8300	AE1
36D932G030AF2A	9300	AF1
36D952G030BB2A	9500	BB1
36D143G030BC2A	14000	BC1
36D163G030BD2A	16000	BD1
36D193G030BE2A	19000	BE1
36D213G030BF2A	21000	BF1
36D243G030CC2A	24000	CC1
36D283G030CD2A	28000	CD1
36D323G030CE2A	32000	CE1
36D363G030DC2A	36000	DC1
36D373G030CF2A	37000	CF1
36D423G030DD2A	42000	DD1
36D483G030DE2A	48000	DE1
36D543G030DF2A	54000	DF1

TYPE 36D CONTINUED ON THE FOLLOWING PAGE

SPRAGUE Electrolytic Capacitors

TYPE 36D ELECTROLYTIC CAPACITORS (CONT'D)

40 WVDC

Sprague Number	Cap., μF	*
36D182G040AA2A	1800	AA1
36D362G040AB2A	3600	AB1
36D552G040AC2A	5500	AC1
36D642G040AD2A	6400	AD1
36D732G040AE2A	7300	AE1
36D832G040AF2A	8300	AF1
36D842G040BB2A	8400	BB1
36D123G040BC2A	12000	BC1
36D143G040BD2A	14000	BD1
36D163G040BE2A	16000	BE1
36D193G040BF2A	19000	BF1
36D213G040CC2A	21000	CC1
36D253G040CD2A	25000	CD1
36D283G040CE2A	28000	CE1
36D313G040DC2A	31000	DC1
36D323G040CF2A	32000	CF1
36D373G040DD2A	37000	DD1
36D423G040DE2A	42000	DE1
36D483G040DF2A	48000	DF1

50 WVDC

Sprague Number	Cap., μF	*
36D132G050AA2A	1300	AA1
36D262G050AB2A	2600	AB1
36D392G050AC2A	3900	AC1
36D462G050AD2A	4600	AD1
36D522G050AE2A	5200	AE1
36D592G050AF2A	5900	AF1
36D602G050BB2A	6000	BB1
36D902G050BC2A	9000	BC1
36D103G050BD2A	10000	BD1
36D123G050BE2A	12000	BE1
36D133G050BF2A	13000	BF1
36D153G050CC2A	15000	CC1
36D183G050CD2A	18000	CD1
36D203G050CE2A	20000	CE1
36D223G050DC2A	22000	DC1
36D233G050CF2A	23000	CF1
36D263G050DD2A	26000	DD1
36D303G050DE2A	30000	DE1
36D343G050DF2A	34000	DF1

75 WVDC

Sprague Number	Cap., μF	*
36D172G075AB2A	1700	AB2
36D252G075AC2A	2500	AC2
36D302G075AD2A	3000	AD2
36D342G075AE2A	3400	AE2
36D382G075AF2A	3800	AF2
36D392G075BB2A	3900	BB2
36D592G075BC2A	5900	BC2
36D672G075CB2A	6700	BC2
36D692G075BD2A	6900	BD2
36D782G075BE2A	7800	BE2
36D882G075BF2A	8800	BF2
36D103G075CC2A	10000	CC2
36D113G075CD2A	11000	CD2
36D133G075CE2A	13000	CE2
36D143G075DC2A	14000	DC2
36D153G075CF2A	15000	CF2
36D173G075DD2A	17000	DD2
36D203G075DE2A	20000	DE2
36D223G075DF2A	22000	DF2

100 WVDC

Sprague Number	Cap., μF	*
36D451G100AA2A	450	AA2
36D901G100AB2A	900	AB2
36D132G100AC2A	1300	AC2
36D152G100AD2A	1500	AD2
36D182G100AE2A	1800	AE2
36D202G100AF2A	2000	AF2
36D302G100BC2A	3000	BC2
36D352G100CB2A	3500	BC2
36D362G100BD2A	3600	BD2
36D402G100BE2A	4000	BE2
36D452G100BF2A	4500	BF2
36D532G100CC2A	5300	CC2
36D612G100CD2A	6100	CD2
36D702G100CE2A	7000	CE2

100 WVDC (CONT'D)

Sprague Number	Cap., μF	*
36D782G100CF2A	7800	CF2
36D782G100DC2A	7800	DC2
36D912G100DD2A	9100	DD2
36D103G100DE2A	10000	DE2
36D113G100DF2A	11000	DF2

150 WVDC

Sprague Number	Cap., μF	*
36D301F150AA2A	300	AA2
36D601F150AB2A	600	AB2
36D901F150AC2A	900	AC2
36D112F150AD2A	1100	AD2
36D122F150AE2A	1200	AE2
36D132F150AF2A	1300	AF2
36D142F150BB2A	1400	BB2
36D212F150BC2A	2100	BC2
36D242F150BD2A	2400	BD2
36D272F150BE2A	2700	BE2
36D312F150BF2A	3100	BF2
36D362F150CC2A	3600	CC2
36D422F150CD2A	4200	CD2
36D472F150CE2A	4700	CE2
36D532F150CF2A	5300	CF2
36D532F150DC2A	5300	DC2
36D622F150DD2A	6200	DD2
36D702F150DE2A	7000	DE2
36D782F150DF2A	7800	DF2

200 WVDC

Sprague Number	Cap., μF	*
36D251F200AA2A	250	AA2
36D431F200AB2A	430	AB2
36D641F200AC2A	640	AC2
36D771F200AD2A	770	AD2
36D851F200AE2A	850	AE2
36D951F200AF2A	950	AF2
36D142F200BC2A	1400	BC2
36D162F200CB2A	1600	CB2
36D172F200BD2A	1700	BD2
36D192F200BE2A	1900	BE2
36D212F200BF2A	2100	BF2
36D252F200CC2A	2500	CC2
36D292F200CD2A	2900	CD2
36D332F200CE2A	3300	CE2
36D372F200CF2A	3700	CF2
36D372F200DC2A	3700	DC2
36D432F200DD2A	4300	DD2
36D482F200DE2A	4800	DE2
36D552F200DF2A	5500	DF2

250 WVDC

Sprague Number	Cap., μF	*
36D171F250AA2A	170	AA2
36D351F250AB2A	350	AB2
36D531F250AC2A	530	AC2
36D631F250AD2A	630	AD2
36D701F250AE2A	700	AE2
36D781F250AF2A	780	AF2
36D801F250BB2A	800	BB2
36D122F250BC2A	1200	BC2
36D132F250CB2A	1300	CB2
36D142F250BD2A	1400	BD2
36D152F250BE2A	1500	BE2
36D172F250BF2A	1700	BF2
36D202F250CC2A	2000	CC2
36D242F250CD2A	2400	CD2
36D272F250CE2A	2700	CE2
36D302F250CF2A	3000	CF2
36D302F250DC2A	3000	DC2
36D352F250DD2A	3500	DD2
36D402F250DE2A	4000	DE2
36D452F250DF2A	4500	DF2

300 WVDC

Sprague Number	Cap., μF	*
36D121F300AA2A	120	AA2
36D241F300AB2A	240	AB2
36D371F300AC2A	370	AC2
36D451F300AD2A	450	AD2
36D501F300AE2A	500	AE2
36D551F300AF2A	550	AF2

300 WVDC (CONT'D)

Sprague Number	Cap., μF	*
36D821F300BC2A	820	BC2
36D951F300BD2A	950	BD2
36D112F300BE2A	1100	BE2
36D122F300BF2A	1200	BF2
36D142F300CC2A	1400	CC2
36D162F300CD2A	1600	CD2
36D182F300CE2A	1800	CE2
36D212F300CF2A	2100	CF2
36D212F300DC2A	2100	DC2
36D242F300DD2A	2400	DD2
36D272F300DE2A	2700	DE2
36D312F300DF2A	3100	DF2

350 WVDC

Sprague Number	Cap., μF	*
36D950F350AA2A	95	AA2
36D191F350AB2A	190	AB2
36D291F350AC2A	290	AC2
36D361F350AD2A	360	AD2
36D391F350AE2A	390	AE2
36D421F350BB2A	420	BB2
36D441F350AF2A	440	AF2
36D651F350BC2A	650	BC2
36D751F350CB2A	750	CB2
36D781F350BD2A	780	BD2
36D881F350BE2A	880	BE2
36D102F350BF2A	1000	BF2
36D112F350CC2A	1100	CC2
36D132F350CD2A	1300	CD2
36D152F350CE2A	1500	CE2
36D162F350DC2A	1600	DC2
36D172F350CF2A	1700	CF2
36D192F350DD2A	1900	DD2
36D222F350DE2A	2200	DE2
36D252F350DF2A	2500	DF2

400 WVDC

Sprague Number	Cap., μF	*
36D650F400AA2A	65	AA2
36D121F400AB2A	120	AB2
36D191F400AC2A	190	AC2
36D231F400AD2A	230	AD2
36D271F400AE2A	270	AE2
36D291F400BB2A	290	BB2
36D301F400AF2A	300	AF2
36D421F400BC2A	420	BC2
36D491F400CB2A	490	CB2
36D531F400BD2A	530	BD2
36D611F400BE2A	610	BE2
36D681F400BF2A	680	BF2
36D791F400CC2A	790	CC2
36D911F400CD2A	910	CD2
36D102F400CE2A	1000	CE2
36D102F400DC2A	1000	DC2
36D112F400CF2A	1100	CF2
36D122F400DD2A	1200	DD2
36D142F400DE2A	1400	DE2
36D162F400DF2A	1600	DF2

450 WVDC

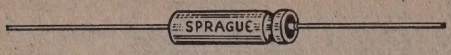
Sprague Number	Cap., μF	*
36D500F450AA2A	50	AA2
36D101F450AB2A	100	AB2
36D141F450AC2A	140	AC2
36D171F450AD2A	170	AD2
36D191F450AE2A	190	AE2
36D211F450AF2A	210	AF2
36D221F450BB2A	220	BB2
36D331F450BC2A	330	BC2
36D381F450CB2A	380	CB2
36D391F450BD2A	390	BD2
36D441F450BE2A	440	BE2
36D491F450BF2A	490	BF2
36D571F450CC2A	570	CC2
36D661F450CD2A	660	CD2
36D761F450CE2A	760	CE2
36D851F450CF2A	850	CF2
36D861F450DC2A	860	DC2
36D102F450DD2A	1000	DD2
36D112F450DE2A	1100	DE2
36D122F450DF2A	1200	DF2

*CASE SIZES AND PRICES

* Code	Size, Inches Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
AA1	1 7/16 x 2 1/4	$2.90	$2.32	$2.03	$1.57	$1.45
AA2	1 7/16 x 2 1/4	3.08	2.46	2.15	1.66	1.54
AB1	1 7/16 x 3 1/4	3.50	2.80	2.45	1.89	1.75
AB2	1 7/16 x 3 1/4	3.78	3.02	2.64	2.04	1.89
AC1	1 7/16 x 4 1/4	4.10	3.28	2.87	2.21	2.05
AC2	1 7/16 x 4 1/4	4.43	3.54	3.10	2.39	2.21
AD1	1 7/16 x 4 3/4	4.40	3.52	3.08	2.38	2.20
AD2	1 7/16 x 4 3/4	4.78	3.82	3.34	2.58	2.39
AE1	1 7/16 x 5 1/4	4.70	3.76	3.29	2.54	2.35
AE2	1 7/16 x 5 1/4	5.13	4.10	3.59	2.77	2.56
AF1	1 7/16 x 5 3/4	5.00	4.00	3.50	2.70	2.50
AF2	1 7/16 x 5 3/4	5.45	4.36	3.82	2.94	2.73
BB1	2 1/16 x 3 1/4	5.18	4.14	3.62	2.79	2.59
BB2	2 1/16 x 3 1/4	5.40	4.32	3.78	2.92	2.70
BC1	2 1/16 x 4 1/4	6.13	4.90	4.29	3.31	3.06
BC2	2 1/16 x 4 1/4	6.80	5.44	4.76	3.67	3.40
BD1	2 1/16 x 4 3/4	6.75	5.40	4.73	3.65	3.38
BD2	2 1/16 x 4 3/4	7.60	6.08	5.32	4.10	3.80
BE1	2 1/16 x 5 1/4	7.25	5.80	5.08	3.92	3.63
BE2	2 1/16 x 5 1/4	8.30	6.64	5.81	4.48	4.15

* Code	Size, Inches Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
BF1	2 1/16 x 5 3/4	$ 7.57	$ 6.20	$ 5.43	$ 4.19	$ 3.88
BF2	2 1/16 x 5 3/4	9.00	7.20	6.30	4.86	4.50
CB1	2 3/4 x 3 1/4	7.03	5.62	4.92	3.79	3.51
CB2	2 3/4 x 3 1/4	8.48	6.78	5.93	4.58	4.24
CC1	2 3/4 x 4 1/4	8.90	7.12	6.23	4.81	4.45
CC2	2 3/4 x 4 1/4	10.68	8.54	7.47	5.76	5.34
CD1	2 3/4 x 4 3/4	9.83	7.86	6.88	5.31	4.91
CD2	2 3/4 x 4 3/4	11.83	9.46	8.28	6.39	5.91
CE1	2 3/4 x 5 1/4	11.05	8.84	7.74	5.79	5.53
CE2	2 3/4 x 5 1/4	13.03	10.42	9.12	7.03	6.51
CF1	2 3/4 x 5 3/4	11.98	9.58	8.38	6.47	5.99
CF2	2 3/4 x 5 3/4	14.05	11.24	9.84	7.59	7.03
DC1	3 1/16 x 4 1/4	12.55	10.04	8.79	6.78	6.28
DC2	3 1/16 x 4 1/4	15.10	12.08	10.57	8.15	7.55
DD1	3 1/16 x 4 3/4	14.18	11.34	9.92	7.65	7.09
DD2	3 1/16 x 4 3/4	16.85	13.48	11.80	9.10	8.43
DE1	3 1/16 x 5 1/4	15.50	12.40	10.85	8.37	7.75
DE2	3 1/16 x 5 1/4	18.30	14.64	12.81	9.88	9.15
DF1	3 1/16 x 5 3/4	16.83	13.46	11.78	9.09	8.41
DF2	3 1/16 x 5 3/4	19.70	15.76	13.79	10.64	9.85

TYPE 500D MINIATURE METAL-CASE ALUMINUM ELECTROLYTICS



Miniature metal-case aluminum electrolytic capacitors feature high voltage ratings and moderate cost. Excellent stability of capacitance, equivalent series resistance and leakage current. Welds at all critical anode and cathode terminations assure freedom from open circuits even when operated in the mV or μV range. Furnished as polar units with the cathode connected to aluminum case. Designed for operation over temperature range of −20° C to +85° C with very low equivalent series resistance and leakage current. Capacitance tolerance, −10, +75%, 3 VDC thru 50 VDC; −10, +50%, 100 and 150 VDC. Available without outer shrink-fitted insulation on request.

3 VDC WORKING, 4 VDC SURGE

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G003BA7	BA	$.587	$.408	$.326	$.245	$.204	$.179
2	205G003BA7	BA	.587	.408	.326	.245	.204	.179
3	305G003BA7	BA	.587	.408	.326	.245	.204	.179
4	405G003BA7	BA	.587	.408	.326	.245	.204	.179
5	505G003BA7	BA	.587	.408	.326	.245	.204	.179
6	605G003BA7	BA	.587	.408	.326	.245	.204	.179
8	805G003BA7	BA	.587	.408	.326	.245	.204	.179
10	106G003BA7	BA	.587	.408	.326	.245	.204	.179
15	156G003BA7	BA	.587	.408	.326	.245	.204	.179
20	206G003BA7	BA	.587	.408	.326	.245	.204	.179
25	256G003BA7	BA	.587	.408	.326	.245	.204	.179
30	306G003BA7	BA	.587	.408	.326	.245	.204	.179
50	506G003BB7	BB	.612	.425	.34	.255	.213	.187
65	656G003BB7	BB	.612	.425	.34	.255	.312	.187
75	756G003CB7	CB	.634	.44	.352	.264	.22	.194
100	107G003CB7	CB	.634	.44	.352	.264	.22	.194
130	137G003CB7	CB	.634	.44	.352	.264	.22	.194
150	157G003CC7	CC	.662	.46	.368	.276	.23	.202
200	207G003CC7	CC	.662	.46	.368	.276	.23	.202
250	257G003DC7	DC	.67	.465	.372	.279	.233	.205
300	307G003DC7	DC	.67	.465	.372	.279	.233	.205
400	407G003DD7	DD	.684	.475	.38	.285	.238	.209
500	507G003DF7	DF	.734	.51	.408	.306	.255	.224
600	607G003DF7	DF	.734	.51	.408	.306	.255	.224
800	807G003DH7	DH	.76	.528	.422	.317	.264	.232
900	907G003EF7	EF	.864	.60	.48	.36	.30	.264
1000	108G003EH7	EH	.911	.633	.506	.38	.316	.278
1200	128G003EH7	EH	.911	.633	.506	.38	.316	.278
1500	158G003FH7	FH	1.228	.853	.682	.512	.426	.375
1800	188G003FH7	FH	1.228	.853	.682	.512	.426	.375
2000	208G003FH7	FH	1.228	.853	.682	.512	.426	.375
2200	228G003FK7	FK	1.292	.898	.718	.539	.449	.395
2500	258G003FK7	FK	1.292	.898	.718	.539	.449	.395

6 VDC WORKING, 8 VDC SURGE

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G006BA7	BA	.587	$.408	$.326	$.245	$.204	$.179
2	205G006BA7	BA	.587	.408	.326	.245	.204	.179
3	305G006BA7	BA	.587	.408	.326	.245	.204	.179
4	405G006BA7	BA	.587	.408	.326	.245	.204	.179
5	505G006BA7	BA	.587	.408	.326	.245	.204	.179
6	605G006BA7	BA	.587	.408	.326	.245	.204	.179
8	805G006BA7	BA	.587	.408	.326	.245	.204	.179
10	106G006BA7	BA	.587	.408	.326	.245	.204	.179
15	156G006BA7	BA	.587	.408	.326	.245	.204	.179
20	206G006BA7	BA	.587	.408	.326	.245	.204	.179
25	256G006BB7	BB	.612	.425	.34	.255	.213	.187
35	356G006BB7	BB	.612	.425	.34	.255	.213	.187
50	506G006BB7	BB	.612	.425	.34	.255	.213	.187
75	756G006CB7	CB	.634	.44	.352	.264	.22	.194
90	906G006CB7	CB	.634	.44	.352	.262	.22	.194
100	107G006CC7	CC	.662	.46	.368	.276	.23	.202
140	147G006CC7	CC	.662	.46	.368	.276	.23	.202
150	157G006DC7	DC	.67	.465	.372	.279	.233	.205
200	207G006DC7	DC	.67	.465	.372	.279	.233	.205
250	257G006DD7	DD	.684	.475	.38	.285	.238	.209
300	307G006DD7	DD	.684	.475	.38	.285	.238	.209
400	407G006DF7	DF	.734	.51	.408	.306	.255	.224
500	507G006DH7	DH	.76	.528	.422	.317	.264	.232
600	607G006DH7	DH	.76	.528	.422	.317	.264	.232
700	707G006EF7	EF	.864	.60	.48	.36	.30	.264
800	807G006EH7	EH	.911	.633	.506	.38	.316	.278
950	957G006EH7	EH	.911	.633	.506	.38	.316	.278
1000	108G006FF7	FF	.911	.633	.506	.38	.316	.278
1200	128G006FH7	FH	1.228	.853	.682	.512	.426	.375
1500	158G006FH7	FH	1.228	.853	.682	.512	.426	.375
1800	188G006FK7	FK	1.292	.898	.718	.539	.449	.395
2000	208G006FK7	FK	1.292	.898	.718	.539	.449	.395

12 VDC WORKING, 15 VDC SURGE

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G012BA7	BA	$.587	$.408	$.326	$.245	$.204	$.179
2	205G012BA7	BA	.587	.408	.326	.245	.204	.179
3	305G012BA7	BA	.587	.408	.326	.245	.204	.179
4	405G012BA7	BA	.587	.408	.326	.245	.204	.179
5	505G012BA7	BA	.587	.408	.326	.245	.204	.179
6	605G012BA7	BA	.587	.408	.326	.245	.204	.179
8	805G012BA7	BA	.587	.408	.326	.245	.204	.179
10	106G012BA7	BA	.587	.408	.326	.245	.204	.179
15	156G012BA7	BA	.587	.408	.326	.245	.204	.179
20	206G012BB7	BB	.612	.425	.34	.255	.213	.187
25	256G012BB7	BB	.612	.425	.34	.255	.213	.187
30	306G012BB7	BB	.612	.425	.34	.255	.213	.187

12 VDC (CONT'D)

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
50	506G012CB7	CB	$.634	$.44	$.352	$.264	$.22	$.194
60	606G012CB7	CB	.634	.44	.352	.264	.22	.194
75	756G012CC7	CC	.662	.46	.368	.276	.23	.202
90	906G012DB7	DB	.662	.46	.368	.276	.23	.202
100	107G012CC7	CC	.662	.46	.368	.276	.23	.202
140	147G012DC7	DC	.67	.465	.372	.279	.233	.205
150	157G012DD7	DD	.684	.475	.38	.285	.238	.209
190	197G012DD7	DD	.684	.475	.38	.285	.238	.209
200	207G012DF7	DF	.734	.51	.408	.306	.255	.224
250	257G012DF7	DF	.734	.51	.408	.306	.255	.224
290	297G012DF7	DF	.734	.51	.408	.306	.255	.224
390	397G012DH7	DH	.76	.528	.422	.317	.264	.232
400	407G012EF7	EF	.864	.60	.48	.36	.30	.264
450	457G012EF7	EF	.864	.60	.48	.36	.30	.264
500	507G012EH7	EH	.911	.633	.506	.38	.316	.278
600	607G012EH7	EH	.911	.633	.506	.38	.316	.278
800	807G012FH7	FH	1.228	.853	.682	.512	.426	.375
1000	108G012FK7	FK	1.292	.898	.718	.539	.449	.395
1200	128G012FK7	FK	1.292	.898	.718	.539	.449	.395

16 VDC WORKING, 20 VDC SURGE

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G016BA7	BA	$.587	$.408	$.326	$.245	$.204	$.179
2	205G016BA7	BA	.587	.408	.326	.245	.204	.179
3	305G016BA7	BA	.587	.408	.326	.245	.204	.179
4	405G016BA7	BA	.587	.408	.326	.245	.204	.179
5	505G016BA7	BA	.587	.408	.326	.245	.204	.179
6	605G016BA7	BA	.587	.408	.326	.245	.204	.179
8	805G016BA7	BA	.587	.408	.326	.245	.204	.179
10	106G016BA7	BA	.587	.408	.326	.245	.204	.179
15	156G016BB7	BB	.612	.425	.34	.255	.213	.187
20	206G016BB7	BB	.612	.425	.34	.255	.213	.187
25	256G016BB7	BB	.612	.425	.34	.255	.213	.187
30	306G016CB7	CB	.634	.44	.352	.264	.22	.194
35	356G016CB7	CB	.634	.44	.352	.264	.22	.194
50	506G016CB7	CB	.634	.44	.352	.264	.22	.194
75	756G016CC7	CC	.662	.46	.368	.276	.23	.202
85	856G016DB7	DB	.662	.46	.368	.276	.23	.202
90	906G016CC7	CC	.662	.46	.368	.276	.23	.202
100	107G016DC7	DC	.67	.465	.372	.279	.233	.205
130	137G016DC7	DC	.67	.465	.372	.279	.233	.205
150	157G016DD7	DD	.684	.475	.38	.285	.238	.209
180	187G016DD7	DD	.684	.475	.38	.285	.238	.209
200	207G016DF7	DF	.734	.51	.408	.306	.255	.224
250	257G016DF7	DF	.734	.51	.408	.306	.255	.224
300	307G016DH7	DH	.76	.528	.422	.317	.264	.232
350	357G016DH7	DH	.76	.528	.422	.317	.264	.232
400	407G016EF7	EF	.864	.60	.48	.36	.30	.264
450	457G016EH7	EH	.911	.633	.506	.38	.316	.278
500	507G016EH7	EH	.911	.633	.506	.38	.316	.278
600	607G016EH7	EH	.911	.633	.506	.38	.316	.278
800	807G016FH7	FH	1.228	.853	.682	.512	.426	.375
1000	108G016FK7	FK	1.292	.898	.718	.539	.449	.395
1200	128G016FK7	FK	1.292	.898	.718	.539	.449	.395

25 VDC WORKING, 35 VDC SURGE

μF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G025BA7	BA	$.587	$.408	$.326	$.245	$.204	$.179
2	205G025BA7	BA	.587	.408	.326	.245	.204	.179
3	305G025BA7	BA	.587	.408	.326	.245	.204	.179
4	405G025BA7	BA	.587	.408	.326	.245	.204	.179
5	505G025BA7	BA	.587	.408	.326	.245	.204	.179
6	605G025BA7	BA	.587	.408	.326	.245	.204	.179
8	805G025BA7	BA	.587	.408	.326	.245	.204	.179
10	106G025BB7	BB	.612	.425	.34	.255	.213	.187
15	156G025BB7	BB	.612	.425	.34	.255	.213	.187
20	206G025CB7	CB	.634	.44	.352	.264	.22	.194
25	256G025CB7	CB	.634	.44	.352	.264	.22	.194
30	306G025CB7	CB	.634	.44	.352	.264	.22	.194
35	356G025CB7	CB	.634	.44	.352	.264	.22	.194
50	506G025CC7	CC	.662	.46	.368	.276	.23	.202
175	756G025DC7	DC	.67	.465	.372	.279	.233	.205
100	107G025DD7	DD	.684	.475	.38	.285	.238	.209
150	157G025DF7	DF	.734	.51	.408	.306	.255	.224
200	207G025DH7	DH	.76	.528	.422	.317	.264	.232
250	257G025EF7	EF	.864	.60	.48	.36	.30	.264
300	307G025EH7	EH	.911	.633	.506	.38	.316	.278
350	357G025EH7	EH	.911	.633	.506	.38	.316	.278
400	407G025FF7	FF	.911	.633	.506	.38	.316	.278
450	457G025FH7	FH	1.228	.853	.682	.512	.426	.375
500	507G025FH7	FH	1.228	.853	.682	.512	.426	.375
600	607G025FK7	FK	1.292	.898	.718	.539	.449	.395

*CASE SIZES

Case Code	Size, Inches Dia.	Lgth.	Case Code	Size, Inches Dia.	Lgth.
BA	.260	.536	DF	.385	1.286
BB	.260	.723	DH	.385	1.536
CB	.322	.723	EF	.448	1.286
CC	.322	.848	EH	.448	1.536
DB	.385	.723	FF	.510	1.286
DC	.385	.848	FH	.510	1.536
DD	.385	.973	FJ	.510	1.786

TYPE 500D CONTINUED ON THE FOLLOWING PAGE

TYPE 500D ELECTROLYTIC CAPACITORS (CONT'D)

50 VDC WORKING, 65 VDC SURGE

µF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
1	105G050BA7	BA	$ .587	$ .408	$ .326	$ .245	$ .204	$ .179
2	205G050BA7	BA	.587	.408	.326	.245	.204	.179
3	305G050BA7	BA	.587	.408	.326	.245	.204	.179
4	405G050BA7	BA	.587	.408	.326	.245	.204	.179
5	505G050BB7	BB	.612	.425	.34	.255	.213	.187
6	605G050BB7	BB	.612	.425	.34	.255	.213	.187
8	805G050BB7	BB	.612	.425	.34	.255	.213	.187
10	106G050CB7	CB	.634	.44	.352	.264	.22	.194
15	156G050CB7	CB	.634	.44	.352	.264	.22	.194
20	206G050CC7	CC	.662	.46	.368	.276	.23	.202
25	256G050CC7	CC	.662	.46	.368	.276	.23	.202
35	356G050DC7	DC	.67	.465	.372	.279	.233	.205
50	506G050DD7	DD	.684	.475	.38	.285	.238	.209
75	756G050DF7	DF	.734	.51	.408	.306	.255	.224
00	107G050DH7	DH	.76	.528	.422	.317	.264	.232
20	127G050EF7	EF	.864	.60	.48	.36	.30	.264
50	157G050EH7	EH	.911	.633	.506	.38	.316	.278
00	207G050FF7	FF	.911	.633	.506	.38	.316	.278
50	257G050FF7	FF	.911	.633	.506	.38	.316	.278
00	307G050FH7	FH	1.228	.853	.682	.512	.426	.375
50	357G050FJ7	FJ	1.292	.898	.718	.539	.449	.395
00	407G050FJ7	FJ	1.292	.898	.718	.539	.449	.395

100 VDC WORKING, 125 VDC SURGE

1	105F100BA7	BA	$ .644	$ .448	$ .358	$ .269	$ .224	$ .197
2	205F100BB7	BB	.673	.468	.374	.281	.234	.206
3	305F100CB7	CB	.698	.485	.388	.291	.243	.213
4	405F100CB7	CB	.698	.485	.388	.291	.243	.213
5	505F100CC7	CC	.727	.505	.404	.303	.253	.222
6	605F100CC7	CC	.727	.505	.404	.303	.253	.222
8	805F100DC7	DC	.738	.513	.41	.308	.256	.226
10	106F100DC7	DC	.738	.513	.41	.308	.256	.226
15	156F100DD7	DD	.752	.523	.418	.314	.261	.23
20	206F100DF7	DF	.896	.56	.448	.336	.28	.246
25	256F100DH7	DH	.835	.58	.464	.348	.29	.255
30	306F100DH7	DH	.835	.58	.464	.348	.29	.255
40	406F100EH7	EH	1.001	.695	.556	.417	.348	.306
50	506F100FH7	FH	1.35	.938	.75	.563	.469	.413
60	606F100FH7	FH	1.35	.938	.75	.563	.469	.413
75	756F100FJ7	FJ	1.422	.988	.79	.593	.494	.435

150 VDC WORKING, 175 VDC SURGE

1	105F150BA7	BA	$ .644	$ .448	$ .358	$ .269	$ .224	$ .197
2	205F150BB7	BB	.673	.468	.374	.281	.234	.206
3	305F150CB7	CB	.698	.485	.388	.291	.243	.213
4	405F150CC7	CC	.727	.505	.404	.303	.253	.222
5	505F150CC7	CC	.727	.505	.404	.303	.253	.222
6	605F150DC7	DC	.738	.513	.41	.308	.256	.226
7	705F150DC7	DC	.738	.513	.41	.308	.256	.226
8	805F150DC7	DC	.738	.513	.41	.308	.256	.226
10	106F150DD7	DD	.752	.523	.418	.314	.261	.23
15	156F150DF7	DF	.806	.56	.448	.336	.28	.246
20	206F150DH7	DH	.835	.58	.464	.348	.29	.255
25	256F150EF7	EF	.95	.66	.528	.396	.33	.29
30	306F150EH7	EH	1.001	.695	.556	.417	.348	.306
35	356F150FH7	FH	1.35	.938	.75	.563	.469	.413
40	406F150FH7	FH	1.35	.938	.75	.563	.469	.413
50	506F150FJ7	FJ	1.442	.988	.79	.593	.494	.435

200 VDC WORKING, 250 VDC SURGE

1	105F200BB7	BB	$ .673	$ .468	$ .374	$ .281	$ .234	$ .206
2	205F200CB7	CB	.698	.485	.388	.291	.243	.213
3	305F200CC7	CC	.727	.505	.404	.303	.253	.222
4	405F200DC7	DC	.738	.513	.41	.308	.256	.226
5	505F200DC7	DC	.738	.513	.41	.308	.256	.226

200 VDC (CONT'D)

µF	Sprague No. 500D-	Case Code *	Net Each, Lots of 1-24	25-49	50 Up	100-249	250-499	500-999
6	605F200DD7	DD	$ .752	$ .523	$ .418	$ .314	$ .261	$ .23
8	805F200DF7	DF	.806	.56	.448	.336	.28	.246
10	106F200DF7	DF	.806	.56	.448	.336	.28	.246
15	156F200EF7	EF	.95	.66	.528	.396	.33	.29
20	206F200EH7	EH	1.001	.695	.556	.417	.348	.306
25	256F200FH7	FH	1.35	.938	.75	.563	.469	.413
30	306F200FJ7	FJ	1.422	.988	.79	.593	.494	.435

250 VDC WORKING, 300 VDC SURGE

1	105F250CB7	CB	$ .698	$ .485	$ .388	$ .291	$ .243	$ .213
2	205F250DB7	DB	.727	.505	.404	.303	.253	.222
3	305F250DC7	DC	.738	.514	.41	.308	.256	.226
4	405F250DD7	DD	.752	.523	.418	.314	.261	.23
5	505F250DF7	DF	.806	.56	.448	.336	.28	.246
6	605F250DF7	DF	.806	.56	.448	.336	.28	.246
8	805F250DH7	DH	.835	.58	.464	.348	.29	.255
10	106F250EF7	EF	.95	.66	.528	.396	.33	.29
12	126F250EH7	EH	1.001	.695	.556	.417	.348	.306
15	156F250FH7	FH	1.35	.938	.75	.563	.469	.413
20	206F250FJ7	FJ	1.422	.988	.79	.593	.494	.435

300 VDC WORKING, 350 VDC SURGE

1	105F300CB7	CB	$ .698	$ .485	$ .388	$ .291	$ .243	$ .213
2	205F300DC7	DC	.738	.485	.388	.291	.243	.213
3	305F300DD7	DD	.752	.523	.418	.314	.261	.23
4	405F300DF7	DF	.806	.56	.448	.336	.28	.246
5	505F300DF7	DF	.806	.56	.448	.336	.28	.246
6	605F300DH7	DH	.835	.58	.464	.348	.29	.255
8	805F300EH7	EH	1.001	.695	.556	.417	.348	.306
10	106F300EH7	EH	1.001	.695	.556	.417	.348	.306
12	126F300FH7	FH	1.35	.938	.75	.563	.469	.413
15	156F300FH7	FH	1.35	.938	.75	.563	.496	.413
20	206F300FJ7	FJ	1.422	.988	.79	.593	.494	.435

350 VDC WORKING, 400 VDC SURGE

1	105F350CC7	CC	$ .727	$ .505	$ .404	$ .303	$ .253	$ .222
2	205F350DC7	DC	.738	.513	.41	.308	.256	.226
3	305F350DD7	DD	.752	.523	.418	.314	.261	.23
4	405F350DF7	DF	.806	.56	.448	.336	.28	.246
5	505F350DH7	DH	.835	.58	.464	.348	.29	.255
6	605F350DH7	DH	.835	.58	.464	.348	.29	.255
8	805F350EH7	EH	1.001	.695	.556	.417	.348	.306
10	106F350FH7	FH	1.35	.938	.75	.563	.469	.413
12	126F350FH7	FH	1.35	.938	.75	.563	.469	.413
15	156F350FJ7	FJ	1.422	.988	.79	.593	.494	.435

400 VDC WORKING, 475 VDC SURGE

1	105F400DC7	DC	$ .738	$ .513	$ .41	$ .308	$ .256	$ .226
2	205F400DF7	DF	.806	.56	.448	.336	.28	.246
3	305F400DH7	DH	.835	.58	.464	.348	.29	.255
4	405F400EF7	EF	.95	.66	.528	.396	.33	.29
5	505F400EH7	EH	1.001	.695	.556	.417	.348	.306
6	605F400FF7	FF	1.001	.695	.556	.417	.348	.306
8	805F400FH7	FH	1.35	.938	.75	.563	.469	.413
10	106F400FJ7	FJ	1.422	.988	.79	.593	.494	.435
12	126F400FJ7	FJ	1.422	.988	.79	.593	.494	.435

450 VDC WORKING, 525 VDC SURGE

1	105F450DC7	DC	$ .738	$ .513	$ .41	$ .308	$ .256	$ .226
2	205F450DF7	DF	.806	.56	.448	.336	.28	.246
3	305F450EF7	EF	.95	.66	.528	.396	.33	.29
4	405F450EH7	EH	1.001	.695	.556	.417	.348	.306
5	505F450FF7	FF	1.35	.938	.75	.563	.469	.413
6	605F450FH7	FH	1.35	.938	.75	.563	.469	.413
8	805F450FJ7	FJ	1.422	.988	.79	.593	.494	.435
10	106F450FJ7	FJ	1.422	.988	.79	.593	.494	.435

*CASE SIZES LISTED ON THE PREVIOUS PAGE

TYPE 432D STACKED-FOIL COMPULYTIC® ALUMINUM ELECTROLYTICS

Stacked-foil construction allows capacitance values to 100,000 µF with extremely low equivalent series resistance of typically less than .001 ohm and inductance of only 1 mH. Special strip-line terminals are ideal for use with laminated-bus power distribution systems found in modern EDP equipment. Operating temperature range is −40° C to +85° C.

6 WVDC

Sprague No.	Cap., µF	Case Code*	Net Each, Lots of 1-24	25-49	50-99	100-249
432D392006AA2	3900	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D103006AC2	10,000	B	12.06	9.64	8.44	6.50
432D563006DC2	56,000	C	30.33	24.26	21.23	16.38
432D104006DF2	100,000	D	36.13	28.90	25.29	19.51

7.5 WVDC

432D2727R5AA2	2700	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D6827R5AC2	6800	B	12.06	9.64	8.44	6.50
432D4737R5DC2	47,000	C	30.33	24.26	21.23	16.38
432D6837R5DF2	68,000	D	36.13	28.90	25.29	19.51

10 WVDC

432D222010AA2	2200	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D562010AC2	5600	B	12.06	9.64	8.44	6.50
432D333010DC2	33,000	C	30.33	24.26	21.23	16.38
432D563010DF2	56,000	D	36.13	28.90	25.29	19.51

15 WVDC

Sprague No.	Cap., µF	Case Code*	Net Each, Lots of 1-24	25-49	50-99	100-249
432D182015AA2	1800	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D472015AC2	4700	B	12.06	9.64	8.44	6.50
432D273015DC2	27,000	C	29.38	23.50	20.56	15.87
432D393015DF2	39,000	D	35.05	28.04	24.54	18.93

20 WVDC

432D122020AA2	1200	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D332020AC2	3300	B	12.06	9.64	8.44	6.50
432D183020DC2	18,000	C	29.38	23.50	20.56	15.87
432D273020DF2	27,000	D	35.05	28.04	24.54	18.93

25 WVDC

432D102025AA2	1000	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D272025AC2	2700	B	12.06	9.64	8.44	6.50
432D153025DC2	15,000	C	29.38	23.50	20.56	15.87
432D223025DF2	22,000	D	35.05	28.04	24.54	18.93

30 WVDC

432D821030AA2	820	A	$ 8.76	$ 7.00	$ 6.12	$ 4.72
432D222030AC2	2200	B	12.06	9.64	8.44	6.50
432D123030DC2	12,000	C	29.38	23.50	20.56	15.87
432D1830DF2	18,000	D	35.05	28.04	24.54	18.93

TYPE 600D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

SPRAGUE EXTRALYTIC

Aluminum electrolytics offering extended operating temperature range from −55° C to +125° C. Dual rating makes possible operation at either +85° C or +125° C. Improved oxide systems, etching techniques, and end seals, together with a new electrolyte, make Type 600D capacitors equivalent or superior to comparable foil tantalum types. They are also lower in cost and one-third the weight of comparable foil tantalums.

7 WVDC AT 85° C; 5 WVDC AT 125° C

Sprague No.	Cap. µF	†	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
600D127G007KD4	120	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D227G007DD4	220	B	2.64	1.32	1.16	.86	.83
600D277G007DE4	270	C	3.00	1.50	1.32	.98	.94
600D397G007DG4	390	D	3.48	1.74	1.53	1.14	1.09
600D567G007DJ4	560	E	4.00	2.00	1.76	1.30	1.26
600D827G007DL4	820	F	5.08	2.54	2.23	1.66	1.60
600D108G007DX4	1000	G	6.08	3.04	2.67	1.98	1.91

10 WVDC AT 85° C; 7 WVDC AT 125° C

600D107G010KD4	100	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D187G010DD4	180	B	2.64	1.32	1.16	.86	.83
600D227G010DE4	220	C	3.00	1.50	1.32	.98	.94
600D337G010DG4	330	D	3.48	1.74	1.53	1.14	1.09
600D477G010DJ4	470	E	4.00	2.00	1.76	1.30	1.26
600D687G010DL4	680	F	5.08	2.54	2.23	1.66	1.60
600D827G010DX4	820	G	6.08	3.04	2.67	1.98	1.91

15 WVDC AT 85° C; 10 WVDC AT 125° C

600D686G015KD4	68	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D826G015KD4	82	A	2.64	1.32	1.16	.86	.83
600D157G015DD4	150	B	2.64	1.32	1.16	.86	.83
600D187G015DE4	180	C	3.00	1.50	1.32	.98	.94
600D277G015DG4	270	D	3.48	1.74	1.53	1.14	1.09
600D397G015DJ4	390	E	4.00	2.00	1.76	1.30	1.26
600D567G015DL4	560	F	5.08	2.54	2.23	1.66	1.60
600D687G015DX4	680	G	6.08	3.04	2.67	1.98	1.91

20 WVDC AT 85° C; 15 WVDC AT 125° C

600D686G020KD4	68	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D107G020DD4	100	B	2.64	1.32	1.16	.86	.83
600D147G020DE4	140	C	3.00	1.50	1.32	.98	.94
600D227G020DG4	220	D	3.48	1.74	1.53	1.14	1.09
600D297G020DJ4	290	E	4.00	2.00	1.76	1.30	1.26
600D447G020DL4	440	F	5.08	2.54	2.23	1.66	1.60
600D607G020DX4	600	G	6.08	3.04	2.67	1.98	1.91

30 WVDC AT 85° C; 20 WVDC AT 125° C

600D336G030KD4	33	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D476G030KD4	47	A	2.64	1.32	1.16	.86	.83
600D826G030DD4	82	B	2.64	1.32	1.16	.86	.83
600D107G030DE4	100	C	3.00	1.50	1.32	.98	.94
600D127G030DG4	120	D	3.48	1.74	1.53	1.14	1.09
600D157G030DG4	150	D	3.48	1.74	1.53	1.14	1.09
600D227G030DJ4	220	E	4.00	2.00	1.76	1.30	1.26
600D337G030DL4	330	F	5.08	2.54	2.23	1.66	1.60
600D397G030DX4	390	G	6.08	3.04	2.67	1.98	1.91

40 WVDC AT 85° C; 30 WVDC AT 125° C

600D306G040KD4	30	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D506G040DD4	50	B	2.64	1.32	1.16	.86	.83
600D706G040DE4	70	C	3.00	1.50	1.32	.98	.94
600D107G040DG4	100	D	3.48	1.74	1.53	1.14	1.09
600D147G040DJ4	140	E	4.00	2.00	1.76	1.30	1.26
600D217G040DL4	210	F	5.08	2.54	2.23	1.66	1.60
600D287G040DX4	280	G	6.08	3.04	2.67	1.98	1.91

50 WVDC AT 85° C; 40 WVDC AT 125° C

600D226G050KD4	22	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D336G050DD4	33	B	2.64	1.32	1.16	.86	.83
600D476G050DE4	47	C	3.00	1.50	1.32	.98	.94
600D566G050DG4	56	D	3.48	1.74	1.53	1.14	1.09
600D686G050DG4	68	D	3.48	1.74	1.53	1.14	1.09
600D107G050DJ4	100	E	4.00	2.00	1.76	1.30	1.26
600D157G050DL4	150	F	5.08	2.54	2.23	1.66	1.60
600D187G050DX4	180	G	6.08	3.04	2.67	1.98	1.91

60 WVDC AT 85° C; 50 WVDC AT 125° C

600D176G060KD4	17	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D256G060DD4	25	B	2.64	1.32	1.16	.86	.83
600D406G060DE4	40	C	3.00	1.50	1.32	.98	.94
600D606G060DG4	60	D	3.48	1.74	1.53	1.14	1.09
600D806G060DJ4	80	E	4.00	2.00	1.76	1.30	1.26
600D127G060DL4	120	F	5.08	2.54	2.23	1.66	1.60
600D167G060DX4	160	G	6.08	3.04	2.67	1.98	1.91

75 WVDC AT 85° C; 60 WVDC AT 125° C

600D126F075KD4	12	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D226F075DD4	22	B	2.64	1.32	1.16	.86	.83
600D336F075DE4	33	C	3.00	1.50	1.32	.98	.94
600D476F075DG4	47	D	3.48	1.74	1.53	1.14	1.09
600D686F075DJ4	68	E	4.00	2.00	1.76	1.30	1.26
600D107F075DL4	100	F	5.08	2.54	2.23	1.66	1.60
600D127F075DX4	120	G	6.08	3.04	2.67	1.98	1.91

100 WVDC AT 85° C; 75 WVDC AT 125° C

600D825F100KD4	8.2	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D126F100DD4	12	B	2.64	1.32	1.16	.86	.83
600D156F100DE4	15	C	3.00	1.50	1.32	.98	.94
600D226F100DG4	22	D	3.48	1.74	1.53	1.14	1.09
600D336F100DJ4	33	E	4.00	2.00	1.76	1.30	1.26
600D476F100DL4	47	F	5.08	2.54	2.23	1.66	1.60
600D686F100DX4	68	G	6.08	3.04	2.67	1.98	1.91

150 WVDC AT 85° C; 100 WVDC AT 125° C

Sprague No.	Cap. µF	†	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
600D475F150KD4	4.7	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D565F150KD4	5.6	A	2.64	1.32	1.16	.86	.83
600D825F150DD4	8.2	B	2.64	1.32	1.16	.86	.83
600D126F150DE4	12	C	3.00	1.50	1.32	.98	.94
600D186F150DG4	18	D	3.48	1.74	1.53	1.14	1.09
600D226F150DJ4	22	E	4.00	2.00	1.76	1.30	1.26
600D336F150DL4	33	F	5.08	2.54	2.23	1.66	1.60
600D566F150DX4	56	G	6.08	3.04	2.67	1.98	1.91

200 WVDC AT 85° C; 150 WVDC AT 125° C

600D405F200KD4	4	A	$2.64	$1.32	$1.16	$0.86	$0.83
600D605F200DD4	6	B	2.64	1.32	1.16	.86	.83
600D805F200DE4	8	C	3.00	1.50	1.32	.98	.94
600D136F200DG4	13	D	3.48	1.74	1.53	1.14	1.09
600D176F200DJ4	17	E	4.00	2.00	1.76	1.30	1.26
600D266F200DL4	26	F	5.08	2.54	2.23	1.66	1.60
600D396F200DX4	39	G	6.08	3.04	2.67	1.98	1.91

250 WVDC AT 85° C; 200 WVDC AT 125° C

600D335F250KD4	3.3	A	$3.40	$1.70	$1.49	$1.11	$1.07
600D565F250DD4	5.6	B	3.40	1.70	1.49	1.11	1.07
600D685F250DE4	6.8	C	3.88	1.94	1.70	1.27	1.22
600D106F250DG4	10	D	4.52	2.26	1.98	1.47	1.42
600D126F250DJ4	12	E	5.16	2.58	2.26	1.68	1.62
600D226F250DL4	22	F	6.60	3.30	2.89	2.15	2.07
600D276F250DX4	27	G	7.88	3.94	3.45	2.57	2.47

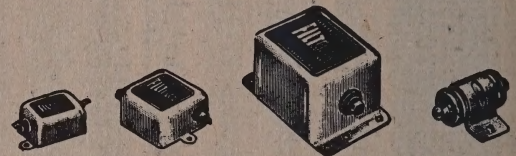
†SIZE

Items listed have outer insulating sleeve; for bare metal case version, subtract .0156″ from diameter .0625″ from lenght.

Case Code	Size, Inches Dia. x Length	Case Code	Size, Inches Dia. x Length
A	.296 x 1.000	E	.390 x 1.687
B	.390 x 1.000	F	.390 x 2.249
C	.390 x 1.187	G	.390 x 2.749
D	.390 x 1.437		

INTERFERENCE FILTERS

FILTEROL® TYPES



Filterol 1 Filterol 2 Filterol 3 Filterol 4

Filterol 1, 2 and 3—Three-terminal network with case as one terminal. Connects in series with power supply lines. The filter should rate higher than the continuous operating current of the offending device; usually sufficient when connected to the high side but may be connected to each leg of the power line in severe cases. **Filterol 4**—For high attenuation at frequencies above 5 megs, for use with small devices rated up to 20 amps continuous. Incorporates a Hypass® capacitor.

Sprague No.	Amps	Volts AC or DC	Size, Inches	Net Each 1-24
Filterol 1	1	115	⅞ x 1¼ x 1¾	$17.85
Filterol 2	10	115	1⅛ x 2 x 2	17.04
Filterol 3	35	115	1⅞ x 2⅞ x 3⅛	23.97
Filterol 4	20	115	1 dia. x 1 13/16″ lg.	4.80

IF TYPES

IF-15, IF-21, IF-S1, IF-37

IF-11

IF-15—For small motor-operated devices; prevents shocks from capacitor discharge. A triple-section filter for fans, drills, etc. **IF-11**—Enclosed safety design for motors over 1 hp and high current arcing devices. Dual, high capacity type operates up to 220 VAC or DC. **IF-21**—Compact dual; for use on fractional hp motors or across line terminals of motors; case grounds to motor frame. **IF-S1**—Completely insulated for use across make-and-break contacts; single section, two-lead design. **IF-37**—Delta-connected for fluorescent fixtures; only one required for each fixture. Also used on governor-type motors. UL Listed; 3-section filter.

Sprague No.	Volts AC or DC	Size, Inches Dia. x Lg.	Net Each 1-24
IF-15	220	1 x 2 3/16	$4.47
IF-11	220	1⅜ x 5¼	8.82
IF-21	220	1 x 2 3/16	4.44
IF-S1	220	¾ x 2 1/16	3.18
IF-37	220	1 x 2	4.86

TYPE 601D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

Supplement Type 600D Extralytic capacitors with larger case sizes and higher capacitance values. Unique new electrolyte, high-gain etched foil, and improved oxide system for long life with superior electrical characteristics. Designed to operate at a temperature range of −55° C to +85° C. Pressure-sensitive safety vent. Tolerance: −10, +75% thru 50 WVDC; −10, +50%, 75 WVDC up.

5 WVDC; 7 V SURGE

Sprague Number	Cap., µF	Size *
601D757G005FE4	750	A
601D128G005GE4	1200	G
601D158G005FJ4	1500	B
601D178G005HE4	1700	M
601D238G005FL4	2300	C
601D248G005GJ4	2400	H
601D278G005FP4	2700	D
601D358G005FS4	3500	E
601D368G005GL4	3600	I
601D428G005FT4	4200	F
601D438G005GP4	4300	J
601D478G005JJ4	4700	T
601D528G005HL4	5200	O
601D558G005GS4	5500	K
601D618G005HP4	6100	P
601D678G005GT4	6700	L
601D718G005JL4	7100	U
601D798G005HS4	7900	Q
601D838G005JP4	8300	V
601D968G005HT4	9600	R
601D109G005JS4	10000	W
601D139G005JT4	13000	X

7.5 WVDC; 10 V SURGE

Sprague Number	Cap., µF	Size *
601D657G7R5FE4	650	A
601D108G7R5GE4	1000	G
601D138G7R5FJ4	1300	B
601D148G7R5HE4	1400	M
601D198G7R5FL4	1900	C
601D208G7R5GJ4	2000	H
601D228G7R5FP4	2200	D
601D298G7R5FS4	2900	E
601D308G7R5GL4	3000	I
601D358G7R5FT4	3500	F
601D368G7R5GP4	3600	J
601D408G7R5JJ4	4000	T
601D448G7R5HL4	4400	O
601D468G7R5GS4	4600	K
601D518G7R5HP4	5100	P
601D568G7R5GT4	5600	L
601D608G7R5JL4	6000	U
601D668G7R5HS4	6600	Q
601D708G7R5JP4	7000	V
601D818G7R5HT4	8100	R
601D908G7R5JS4	9000	W
601D119G7R5JT4	11000	X

10 WVDC; 15 V SURGE

Sprague Number	Cap., µF	Size *
601D547G010FE4	540	A
601D857G010GE4	850	G
601D108G010FJ4	1000	B
601D128G010HE4	1200	M
601D168G010FL4	1600	C
601D178G010GJ4	1700	H
601D188G010FP4	1800	D
601D248G010FS4	2400	E
601D258G010GL4	2500	I
601D298G010FT4	2900	F
601D308G010GP4	3000	J
601D338G010JJ4	3300	T
601D368G010HL4	3600	O
601D388G010GS4	3800	K
601D428G010HP4	4200	P
601D478G010GT4	4700	L
601D508G010JL4	5000	U
601D558G010HS4	5500	Q
601D588G010JP4	5800	V
601D678G010HT4	6700	R
601D758G010JS4	7500	W
601D918G010JT4	9100	X

15 WVDC; 20 V SURGE

Sprague Number	Cap., µF	Size *
601D407G015FE4	400	A
601D657G015GE4	650	G
601D807G015FJ4	800	B
601D937G015HE4	930	M
601D128G015FL4	1200	C
601D138G015GJ4	1300	H
601D148G015FP4	1400	D
601D188G015FS4	1800	E
601D198G015GL4	1900	I
601D228G015FT4	2200	F
601D258G015JJ4	2500	T
601D278G015HL4	2700	O
601D298G015GS4	2900	K
601D328G015HP4	3200	P
601D358G015GT4	3500	L
601D388G015JL4	3800	U
601D428G015HS4	4200	Q
601D448G015JP4	4400	V
601D518G015HT4	5100	R
601D578G015JS4	5700	W
601D698G015JT4	6900	X

20 WVDC; 30 V SURGE

Sprague Number	Cap., µF	Size *
601D297G020FE4	290	A
601D467G020GE4	460	G
601D587G020FJ4	580	B
601D667G020HE4	660	M
601D907G020GJ4	900	H
601D108G020FP4	1000	D
601D138G020FS4	1300	E
601D168G020FT4	1600	F
601D188G020JJ4	1800	T
601D198G020HL4	1900	O
601D208G020GS4	2000	K
601D238G020HP4	2300	P
601D258G020GT4	2500	L
601D278G020JL4	2700	U
601D298G020HS4	2900	Q
601D318G020JP4	3100	V
601D368G020HT4	3600	R
601D408G020JS4	4000	W
601D498G020JT4	4900	X

25 WVDC; 40 V SURGE

Sprague Number	Cap., µF	Size *
601D227G025FE4	220	A
601D357G025GE4	350	G
601D447G025FJ4	440	B
601D507G025HE4	500	M
601D667G025FL4	660	C
601D687G025JE4	680	S
601D707G025GJ4	700	H
601D777G025FP4	770	D
601D997G025FS4	990	E
601D108G025GL4	1000	I
601D128G025FT4	1200	F
601D138G025JJ4	1300	T
601D158G025GS4	1500	K
601D178G025HP4	1700	P
601D198G025GT4	1900	L
601D208G025JL4	2000	U
601D228G025HS4	2200	Q
601D238G025JP4	2300	V
601D278G025HT4	2700	R
601D308G025JS4	3000	W
601D378G025JT4	3700	X

30 WVDC; 45 V SURGE

Sprague Number	Cap., µF	Size *
601D197G030FE4	190	A
601D317G030GE4	310	G
601D397G030FJ4	390	B
601D447G030HE4	440	M
601D587G030FL4	580	C
601D607G030JE4	600	S
601D627G030GJ4	620	H
601D687G030FP4	680	D
601D877G030FS4	870	E
601D887G030HJ4	880	N
601D937G030GL4	930	I
601D108G030FT4	1000	F
601D128G030JJ4	1200	T
601D148G030GS4	1400	K
601D158G030HP4	1500	P
601D178G030GT4	1700	L
601D188G030JL4	1800	U
601D208G030HS4	2000	Q
601D218G030JP4	2100	V
601D248G030HT4	2400	R
601D278G030JS4	2700	W
601D338G030JT4	3300	X

40 WVDC; 60 V SURGE

Sprague Number	Cap., µF	Size *
601D147G040FE4	140	A
601D227G040GE4	220	G
601D277G040FJ4	270	B
601D307G040HE4	300	M
601D407G040FL4	400	C
601D437G040JE4	430	S
601D447G040GJ4	440	H
601D487G040FP4	480	D
601D627G040FS4	620	E
601D637G040HJ4	630	N
601D667G040GL4	660	I
601D767G040FT4	760	F
601D777G040GP4	770	J
601D867G040JJ4	860	T
601D957G040HL4	950	O
601D108G040GS4	1000	K
601D118G040HP4	1100	P
601D128G040GT4	1200	L
601D148G040HS4	1400	Q
601D158G040JP4	1500	V
601D178G040HT4	1700	R
601D198G040JS4	1900	W
601D238G040JT4	2300	X

50 WVDC; 75 V SURGE

Sprague Number	Cap., µF	Size *
601D117G050FE4	110	A
601D177G050GE4	170	G
601D227G050FJ4	220	B
601D257G050HE4	250	M
601D337G050FL4	330	C
601D347G050JE4	340	S
601D357G050GJ4	350	H
601D387G050FP4	380	D
601D507G050FS4	500	E
601D607G050FT4	600	F
601D687G050JJ4	680	T
601D757G050HL4	750	O
601D797G050GS4	790	K
601D877G050HP4	870	P
601D957G050GT4	950	L
601D108G050JL4	1000	U
601D118G050HS4	1100	Q
601D158G050JS4	1500	W
601D188G050JT4	1800	X

75 WVDC; 100 V SURGE

Sprague Number	Cap., µF	Size *
601D456F075FE4	45	A
601D756F075GE4	75	G
601D956F075FJ4	95	B
601D107F075HE4	100	M
601D147F075FL4	140	C
601D157F075GJ4	150	H
601D167F075FP4	160	D
601D217F075FS4	210	E
601D227F075GL4	220	I
601D267F075FT4	260	F
601D297F075JJ4	290	T
601D327F075HL4	320	O
601D347F075GS4	340	K
601D387F075HP4	380	P
601D407F075GT4	400	L
601D447F075JL4	440	U
601D497F075HS4	490	Q
601D507F075JP4	500	V
601D607F075HT4	600	R
601D667F075JS4	660	W
601D807F075JT4	800	X

100 WVDC; 150 V SURGE

Sprague Number	Cap., µF	Size *
601D256F100FE4	25	A
601D456F100GE4	45	G
601D556F100FJ4	55	B
601D656F100HE4	65	M
601D806F100FL4	80	C
601D906F100GJ4	90	H
601D956F100FP4	95	D
601D127F100FS4	120	E
601D137F100GL4	130	I
601D157F100FT4	150	F
601D187F100JJ4	180	T
601D207F100GS4	200	K
601D237F100HP4	230	P
601D257F100GT4	250	L
601D287F100JL4	280	U
601D307F100HS4	300	Q
601D327F100JP4	320	V
601D377F100HT4	370	R
601D427F100JS4	420	W
601D507F100JT4	500	X

150 WVDC; 200 V SURGE

Sprague Number	Cap., µF	Size *
601D186F150FE4	18	A
601D306F150GE4	30	G
601D356F150FJ4	35	B
601D456F150HE4	45	M
601D556F150FL4	55	C
601D606F150GJ4	60	H
601D656F150FP4	65	D
601D856F150FS4	85	E
601D906F150HJ4	90	N
601D956F150GL4	95	I
601D107F150FT4	100	F
601D137F150JJ4	130	T
601D147F150GS4	140	K
601D167F150HP4	160	P
601D177F150GT4	170	L
601D197F150JL4	190	U
601D217F150HS4	210	Q
601D237F150JP4	230	V
601D267F150HT4	260	R
601D297F150JS4	290	W
601D367F150JT4	360	X

200 WVDC; 250 V SURGE

Sprague Number	Cap., µF	Size *
601D166F200FE4	16	A
601D256F200GE4	25	G
601D306F200FJ4	30	B
601D356F200HE4	35	M
601D456F200FL4	45	C
601D506F200GJ4	50	H
601D556F200FP4	55	D
601D706F200FS4	70	E
601D756F200GL4	75	I
601D856F200FT4	85	F
601D906F200GP4	90	J
601D107F200GS4	100	K
601D117F200HL4	110	O
601D137F200HP4	130	P
601D147F200GT4	140	L
601D167F200JL4	160	U
601D177F200HS4	170	Q
601D187F200JP4	180	V
601D217F200HT4	210	R
601D247F200JS4	240	W
601D297F200JT4	290	X

TYPE 601D OEM INDUSTRIAL PRICING

Prices shown are for sleeved units as listed in tables, above.

* Size	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	* Size	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
A	$3.48	$1.74	$1.53	$1.14	$1.09	M	$3.96	$1.98	$1.74	$1.29	$1.24
B	3.70	1.85	1.62	1.21	1.16	N	4.36	2.18	1.91	1.42	1.37
C	3.88	1.94	1.70	1.27	1.22	O	4.72	2.36	2.07	1.54	1.48
D	4.06	2.03	1.78	1.32	1.27	P	5.16	2.58	2.26	1.68	1.62
E	4.28	2.14	1.88	1.40	1.34	Q	5.52	2.76	2.42	1.80	1.73
F	4.48	2.24	1.97	1.46	1.41	R	5.92	2.96	2.60	1.93	1.86
G	3.70	1.85	1.62	1.21	1.16	S	4.36	2.18	1.91	1.42	1.37
H	3.94	1.97	1.73	1.28	1.24	T	4.80	2.40	2.11	1.56	1.51
I	4.24	2.12	1.86	1.38	1.33	U	5.32	2.66	2.33	1.73	1.67
J	4.52	2.26	1.98	1.47	1.42	V	5.76	2.88	2.53	1.88	1.81
K	4.72	2.36	2.07	1.54	1.48	W	6.36	3.18	2.79	2.07	1.99
L	5.04	2.52	2.21	1.64	1.58	X	6.84	3.42	3.00	2.23	2.14

***Size (Dia. x Lg., In.):** Sleeved Units: **A**, .687 x 1.250; **B**, .687 x 1.750; **C**, .687 x 2.250; **D**, .687 x 2.750; **E**, .687 x 3.250; **F**, .687 x 3.750; **G**, .812 x 1.250; **H**, .812 x 1.750; **I**, .812 x 2.250; **J**, .812 x 2.750; **K**, .812 x 3.250; **L**, .812 x 3.750; **M**, .937 x 1.250; **N**, .937 x 1.750; **O**, .937 x 2.250; **P**, .937 x 2.750; **Q**, .937 x 3.250; **R**, .937 x 3.750; **S**, 1.062 x 1.250; **T**, 1.062 x 1.750; **U**, 1.062 x 2.250; **V**, 1.062 x 2.750; **W**, 1.062 x 3.250; **X**, 1.062 x 3.750. For Bare Units: Subtract .062 dia. x .125" lg. from sleeved sizes.

TYPE 602D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

Large cylindrical power supply filter capacitors with exceptional performance over long and trouble-free life. Type 602D have high ripple current capability and are designed for continuous operation over temperature range of − 55° C to + 85° C. Safely carry as much as 10 amps of ripple current at 120 Hz. Superior humidity seal. Ideal for input of power supply filters. Capacitors with outer insulation are listed below. For bare case, change the 14th character of Sprague number from 2 to **0**. With low-screw insert terminals. For high-screw insert terminals, change last character of Sprague number to **B**.

5 WVDC, 7 V SURGE

Sprague Number	µF	Size, Price Code*
602D802G005AA2A	8000	AA
602D173G005AB2A	17000	AB
602D253G005AC2A	25000	AC
602D293G005AD2A	29000	AD
602D343G005AE2A	34000	AE
602D373G005AF2A	37000	AF
602D403G005BB2A	40000	BB
602D603G005BC2A	60000	BC
602D673G005CB2D	67000	CB
602D703G005BD2D	70000	BD
602D803G005BE2A	80000	BE
602D903G005BF2A	90000	BF
602D104G005CC2D	100000	CC
602D114G005CD2D	110000	CD
602D134G005CE2D	130000	CE
602D154G005CF2D	150000	CF
602D154G005DC2D	150000	DC
602D174G005DD2D	170000	DD
602D204G005DE2D	200000	DE
602D224G005DF2D	220000	DF

10 WVDC, 15 V SURGE

602D502G010AA2A	5000	AA
602D103G010AB2A	10000	AB
602D153G010AC2A	15000	AC
602D173G010AD2A	17000	AD
602D203G010AE2A	20000	AE
602D223G010AF2A	22000	AF
602D243G010BB2A	24000	BB
602D373G010BC2A	37000	BC
602D423G010CB2D	42000	CB
602D433G010BD2A	43000	BD
602D483G010BE2A	48000	BE
602D553G010BF2A	55000	BF
602D643G010CC2D	64000	CC
602D753G010CD2D	75000	CD
602D863G010CE2D	86000	CE
602D943G010DC2D	94000	DC
602D963G010CF2D	96000	CF
602D114G010DD2D	110000	DD
602D124G010DE2D	120000	DE
602D144G010DF2D	140000	DF

15 WVDC, 20 V SURGE

602D402G015AA2A	4000	AA
602D802G015AB2A	8000	AB
602D123G015AC2A	12000	AC
602D143G015AD2A	14000	AD
602D163G015AE2A	16000	AE
602D183G015AF2A	18000	AF
602D203G015BB2A	20000	BB
602D303G015BC2A	30000	BC
602D353G015BD2A	35000	BD
602D403G015BE2A	40000	BE
602D423G015CB2D	42000	CB
602D453G015BF2A	45000	BF
602D513G015CC2D	51000	CC
602D593G015CD2D	59000	CD
602D683G015CE2D	68000	CE
602D763G015CF2D	76000	CF
602D763G015DC2D	76000	DC
602D893G015DD2D	89000	DD
602D104G015DE2D	100000	DE
602D114G015DF2D	110000	DF

20 WVDC, 30 V SURGE

602D282G020AA2A	2800	AA
602D512G020AB2A	5100	AB
602D862G020AC2A	8600	AC
602D103G020AD2A	10000	AD
602D113G020AE2A	11000	AE
602D133G020AF2A	13000	AF

20 WVDC (CONT'D)

Sprague Number	µF	Size, Price Code*
602D203G020BC2A	20000	BC
602D233G020BD2A	23000	BD
602D243G020CB2D	24000	CB
602D263G020BE2A	26000	BE
602D303G020BF2A	30000	BF
602D373G020CC2D	37000	CC
602D433G020CD2D	43000	CD
602D473G020CE2D	47000	CE
602D543G020DC2D	54000	DC
602D553G020CF2D	55000	CF
602D633G020DD2D	63000	DD
602D733G020DE2D	73000	DE
602D823G020DF2D	82000	DF

25 WVDC, 40 V SURGE

602D252G025AA2A	2500	AA
602D502G025AB2A	5000	AB
602D752G025AC2A	7500	AC
602D872G025AD2A	8700	AD
602D103G025AE2A	10000	AE
602D113G025AF2A	11000	AF
602D173G025BC2A	17000	BC
602D203G025BD2A	20000	BD
602D203G025CB2D	20000	CB
602D233G025BE2A	23000	BE
602D253G025BF2A	25000	BF
602D303G025CC2D	30000	CC
602D353G025CD2D	35000	CD
602D403G025CE2D	40000	CE
602D443G025DC2D	44000	DC
602D453G025CF2D	45000	CF
602D523G025DD2D	52000	DD
602D603G025DE2D	60000	DE
602D673G025DF2D	67000	DF

30 WVDC, 40 V SURGE

602D222G030AA2A	2200	AA
602D442G030AB2A	4400	AB
602D662G030AC2A	6600	AC
602D772G030AD2A	7700	AD
602D882G030AE2A	8800	AE
602D992G030AF2A	9900	AF
602D103G030BB2A	10000	BB
602D153G030BC2A	15000	BC
602D173G030BD2A	17000	BD
602D183G030CB2D	18000	CB
602D203G030BE2A	20000	BE
602D223G030BF2A	22000	BF
602D263G030CC2D	26000	CC
602D303G030CD2D	30000	CD
602D343G030CE2D	34000	CE
602D383G030DC2D	38000	DC
602D393G030CF2D	39000	CF
602D453G030DD2D	45000	DD
602D523G030DE2D	52000	DE
602D583G030DF2D	58000	DF

40 WVDC, 55 V SURGE

602D182G040AA2A	1800	AA
602D372G040AB2A	3700	AB
602D552G040AC2A	5500	AC
602D642G040AD2A	6400	AD
602D742G040AE2A	7400	AE
602D822G040AF2A	8400	AF
602D902G040BB2A	9000	BB
602D133G040BC2A	13000	BC
602D153G040BD2A	15000	BD
602D153G040CB2A	15000	CB
602D183G040BE2A	18000	BE
602D193G040BF2A	19000	BF
602D223G040CC2D	22000	CC
602D253G040CD2D	25000	CD

40 WVDC (CONT'D)

Sprague Number	µF	Size, Price Code*
602D283G040CE2D	28000	CE
602D323G040DC2D	32000	DC
602D333G040CF2D	33000	CF
602D373G040DD2D	37000	DD
602D433G040DE2D	43000	DE
602D483G040DF2D	48000	DF

50 WVDC, 75 V SURGE

602D142G050AA2A	1400	AA
602D292G050AB2A	2900	AB
602D442G050AC2A	4400	AC
602D512G050AD2A	5100	AD
602D582G050AE2A	5800	AE
602D662G050AF2A	6600	AF
602D902G050BC2A	9000	BC
602D113G050BD2A	11000	BD
602D123G050CB2D	12000	CB
602D133G050BE2A	13000	BE
602D153G050BF2A	15000	BF
602D173G050CC2D	17000	CC
602D203G050CD2D	20000	CD
602D223G050CE2D	22000	CE
602D253G050CF2D	25000	CF
602D253G050DC2D	25000	DC
602D303G050DD2D	30000	DD
602D343G050DE2D	34000	DE
602D393G050DF2D	39000	DF

75 WVDC, 100 V SURGE

602D531F075AA2A	530	AA
602D102F075AB2A	1000	AB
602D162F075AC2A	1600	AC
602D182F075AD2A	1800	AD
602D202F075AE2A	2000	AE
602D242F075AF2A	2400	AF
602D262F075BB2A	2600	BB
602D392F075BC2A	3900	BC
602D442F075CB2D	4400	CB
602D452F075BD2A	4500	BD
602D502F075BE2A	5000	BE
602D582F075BF2A	5800	BF
602D662F075CC2D	6600	CC
602D772F075CD2D	7700	CD
602D882F075CE2D	8800	CE
602D952F075DC2D	9500	DC
602D992F075CF2D	9900	CF
602D113F075DD2D	11000	DD
602D133F075DE2D	13000	DE
602D143F075DF2D	14000	DF

100 WVDC, 150 V SURGE

602D251F100AA2A	250	AA
602D501F100AB2A	500	AB
602D801F100AC2A	800	AC
602D901F100AD2A	900	AD
602D102F100AE2A	1000	AE
602D112F100AF2A	1100	AF
602D122F100BB2A	1200	BB
602D182F100BC2A	1800	BC
602D212F100BD2A	2100	BD
602D212F100CB2D	2100	CB
602D242F100BE2A	2400	BE
602D262F100BF2A	2600	BF
602D312F100CC2D	3100	CC
602D362F100CD2D	3600	CD
602D412F100CE2D	4100	CE
602D452F100CF2D	4500	CF
602D462F100DC2D	4600	DC
602D552F100DD2D	5500	DD
602D602F100DE2D	6000	DE
602D672F100DF2D	6700	DF

*CASE SIZES AND PRICES

* Code	Case Size, In.† Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
AA	1.438 x 2.188	$ 4.35	$3.48	$3.05	$2.35	$2.18
AB	1.438 x 3.188	5.30	4.24	3.71	2.86	2.65
AC	1.438 x 4.188	6.38	5.10	4.46	3.44	3.19
AD	1.438 x 4.688	6.98	5.58	4.88	3.77	3.49
AE	1.438 x 5.188	7.65	6.12	5.36	4.13	3.83
AF	1.438 x 5.688	8.20	6.56	5.74	4.43	4.10
BB	2.062 x 3.188	8.13	6.50	5.69	4.39	4.06
BC	2.062 x 4.188	9.65	7.72	6.76	5.21	4.83
BD	2.062 x 4.688	10.63	8.50	7.44	5.74	5.31
BE	2.062 x 5.188	11.43	9.14	8.00	6.17	5.71
BF	2.062 x 5.688	$12.20	$ 9.76	$ 8.54	$ 6.59	$ 6.1
CB	2.578 x 3.250	11.85	9.48	8.30	6.40	5.9
CC	2.578 x 4.250	14.73	11.78	10.31	7.95	7.3
CD	2.578 x 4.750	15.98	12.78	11.18	8.63	7.9
CE	2.578 x 5.250	17.93	14.34	12.55	9.68	8.9
CF	2.578 x 5.750	19.33	15.46	13.53	10.44	9.6
DC	3.078 x 4.250	21.83	17.46	15.28	11.79	10.9
DD	3.078 x 4.750	24.68	19.74	17.27	13.32	12.3
DE	3.078 x 5.250	27.43	21.94	19.20	14.81	13.7
DF	3.078 x 5.750	30.03	24.02	21.02	16.21	15.0

†For bare case sizes, subtract .063″ from diameter and length.

SPRAGUE TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS

Small, dependable dry electrolytic. Low leakage; long shelf life. Withstands high temp. (85° C); high ripple currents and high surge voltages. Metal case with thermoplastic outer insulating sleeve except as noted.

POLARIZED SINGLE UNITS

Sprague No. TVA-	µF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249*	250-499*
081	1	3	1/4 x 17/32	$0.734	$0.408	$0.306	$0.255
081.1	2	3	1/4 x 17/32	.734	.408	.306	.255
081.2	3	3	1/4 x 17/32	.734	.408	.306	.255
081.3	4	3	1/4 x 17/32	.734	.408	.306	.255
081.4	5	3	1/4 x 17/32	.734	.408	.306	.255
081.5	6	3	1/4 x 17/32	.734	.408	.306	.255
081.6	8	3	1/4 x 17/32	.734	.408	.306	.255
082	10	3	1/4 x 17/32	.734	.408	.306	.255
082.5	15	3	1/4 x 17/32	.734	.408	.306	.255
083	20	3	1/4 x 17/32	.734	.408	.306	.255
084	25	3	1/4 x 17/32	.734	.408	.306	.255
084.5	30	3	1/4 x 17/32	.734	.408	.306	.255
085	50	3	1/4 x 23/32	.767	.426	.32	.266
085.5	65	3	1/4 x 23/32	.767	.426	.32	.266
088	75	3	5/16 x 23/32	.792	.44	.33	.275
089	100	3	5/16 x 23/32	.792	.44	.33	.275
089.5	130	3	5/16 x 23/32	.792	.44	.33	.275
090	150	3	5/16 x 27/32	.828	.46	.345	.288
091	200	3	5/16 x 27/32	.828	.46	.345	.288
091.5	250	3	3/8 x 27/32	.839	.466	.35	.291
092	300	3	3/8 x 27/32	.839	.466	.35	.291
093	400	3	3/8 x 31/32	.857	.476	.357	.298
094	500	3	3/8 x 1 9/32	.918	.51	.383	.319
095	600	3	3/8 x 1 9/32	.918	.51	.383	.319
097	750	3	3/8 x 1 17/32	.95	.528	.396	.33
097.1	800	3	3/8 x 1 17/32	.95	.528	.396	.33
097.2	900	3	7/16 x 1 9/32	1.08	.60	.45	.375
097.3	1000	3	7/16 x 1 17/32	1.138	.632	.474	.395
097.4	1200	3	7/16 x 1 17/32	1.138	.632	.474	.395
097.5	1500	3	1/2 x 1 17/32	1.534	.852	.639	.533
097.6	1800	3	1/2 x 1 17/32	1.534	.852	.639	.533
097.7	2000	3	1/2 x 1 17/32	1.534	.852	.639	.533
097.8	2200	3	1/2 x 1 13/16	1.616	.898	.674	.561
097.9	2500	3	1/2 x 1 13/16	1.616	.898	.674	.561
098	3000	3	3/4 x 1 21/32	1.613	.896	.672	.56
099	4000	3	13/16 x 1 21/32	1.667	.926	.695	.579
099.1	5000	3	13/16 x 1 29/32	1.883	1.046	.785	.654
099.6	10000	3	15/16 x 2 5/32	2.531	1.406	1.055	.879
099.80	1	6	1/4 x 17/32	.734	.408	.306	.255
099.81	2	6	1/4 x 17/32	.734	.408	.306	.255
099.82	3	6	1/4 x 17/32	.734	.408	.306	.255
099.83	4	6	1/4 x 17/32	.734	.408	.306	.255
099.84	5	6	1/4 x 17/32	.734	.408	.306	.255
099.85	6	6	1/4 x 17/32	.734	.408	.306	.255
099.86	8	6	1/4 x 17/32	.734	.408	.306	.255
099.87	10	6	1/4 x 17/32	.734	.408	.306	.255
099.89	15	6	1/4 x 17/32	.734	.408	.306	.255
099.90	20	6	1/4 x 17/32	.734	.408	.306	.255
099.91	25	6	1/4 x 23/32	.767	.426	.32	.266
099.93	35	6	1/4 x 23/32	.767	.426	.32	.266
100	50	6	1/4 x 23/32	.767	.426	.32	.266
100.5	75	6	5/16 x 23/32	.792	.44	.33	.275
100.6	90	6	5/16 x 23/32	.792	.44	.33	.275
101	100	6	5/16 x 27/32	.828	.46	.345	.288
101.2	140	6	5/16 x 27/32	.828	.46	.345	.288
101.5	150	6	3/8 x 27/32	.839	.466	.35	.291
101.7	200	6	3/8 x 27/32	.839	.466	.35	.291
102	250	6	3/8 x 31/32	.857	.476	.357	.298
102.1	300	6	3/8 x 31/32	.857	.476	.357	.298
102.3	400	6	3/8 x 1 9/32	.918	.51	.383	.319
103	500	6	3/8 x 1 17/32	.95	.528	.396	.33
103.2	600	6	3/8 x 1 17/32	.95	.528	.396	.33
103.4	700	6	7/16 x 1 9/32	1.08	.60	.45	.375
103.8	800	6	7/16 x 1 17/32	1.138	.632	.474	.395
103.9	950	6	7/16 x 1 17/32	1.138	.632	.474	.395
104	1000	6	1/2 x 1 9/32	1.138	.632	.474	.395
104.1	1200	6	1/2 x 1 17/32	1.534	.852	.639	.533
105	1500	6	1/2 x 1 17/32	1.534	.852	.639	.533
105.1	1800	6	1/2 x 1 25/32	1.616	.898	.674	.561
106	2000	6	1/2 x 1 25/32	1.616	.898	.674	.561
106.5	2500	6	3/4 x 1 21/32	1.613	.896	.672	.56
107	3000	6	3/4 x 1 29/32	1.667	.926	.695	.579
108	4000	6	7/8 x 1 29/32	1.937	1.076	.807	.673
109	5000	6	7/8 x 1 29/32	1.937	1.076	.807	.673
115	10000	6	1 x 2 13/32	2.794	1.552	1.164	.970
128	1000	10	1/2 x 1 13/16	1.616	.898	.674	.561
129.2	3000	10	7/8 x 1 21/32	1.768	.982	.737	.614
129.4	4000	10	7/8 x 1 29/32	1.937	1.076	.807	.673
129.5	5000	10	1 x 2 5/32	2.693	1.496	1.122	.935
129.8	10000	10	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
129.80	1	12	1/4 x 17/32	.734	.408	.306	.255
129.81	2	12	1/4 x 17/32	.734	.408	.306	.255
129.82	3	12	1/4 x 17/32	.734	.408	.306	.255
129.83	4	12	1/4 x 17/32	.734	.408	.306	.255
129.84	5	12	1/4 x 17/32	.734	.408	.306	.255
129.85	6	12	1/4 x 17/32	.734	.408	.306	.255
129.86	8	12	1/4 x 17/32	.734	.408	.306	.255
129.87	10	12	1/4 x 17/32	.734	.408	.306	.255
129.89	15	12	1/4 x 17/32	.734	.408	.306	.255
129.90	20	12	1/4 x 23/32	.767	.426	.32	.266
129.91	25	12	1/4 x 23/32	.767	.426	.32	.266
129.92	30	12	1/4 x 23/32	.767	.426	.32	.266
129.94	50	12	5/16 x 23/32	.792	.44	.33	.275
129.95	60	12	5/16 x 23/32	.792	.44	.33	.275

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	µF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249*	250-499*
1129.96	75	12	5/16 x 27/32	$0.828	$0.46	$0.345	$0.288
1129.97	90	12	3/8 x 23/32	.828	.46	.345	.288
1130	100	12	5/16 x 23/32	.828	.46	.345	.288
1130.2	140	12	3/8 x 27/32	.839	.466	.35	.291
1130.3	150	12	3/8 x 31/32	.857	.476	.357	.298
1130.5	190	12	3/8 x 31/32	.857	.476	.357	.298
1130.6	200	12	3/8 x 1 9/32	.918	.51	.383	.319
1131	250	12	3/8 x 1 9/32	.918	.51	.383	.319
1131.1	290	12	3/8 x 1 9/32	.918	.51	.383	.319
1131.2	390	12	3/8 x 1 17/32	.95	.528	.396	.33
1131.3	400	12	7/16 x 1 9/32	1.08	.60	.45	.375
1131.5	450	12	7/16 x 1 9/32	1.08	.60	.45	.375
1132	500	12	7/16 x 1 17/32	1.138	.632	.474	.395
1132.2	600	12	7/16 x 1 17/32	1.138	.632	.474	.395
1132.4	800	12	1/2 x 1 9/16	1.534	.852	.639	.533
1132.5	900	12	1/2 x 1 13/16	1.616	.898	.674	.561
1133	1000	12	1/2 x 1 13/16	1.616	.898	.674	.561
1133.4	1200	12	1/2 x 1 13/16	1.616	.898	.674	.561
1133.5	1500	12	3/4 x 1 21/32	1.613	.896	.672	.56
1134	2000	12	7/8 x 1 21/32	1.667	.926	.695	.579
1134.5	2500	12	7/8 x 1 21/32	1.768	.982	.737	.614
1135	3000	12	7/8 x 2 5/32	1.768	.982	.737	.614
1136	4000	12	15/16 x 2 5/32	2.531	1.406	1.055	.879
1136.1	5000	12	1 x 2 13/32	2.808	1.56	1.17	.975
1137	10000	12	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1140	1	16	1/4 x 17/32	.734	.408	.306	.255
1141	2	16	1/4 x 17/32	.734	.408	.306	.255
1142	3	16	1/4 x 17/32	.734	.408	.306	.255
1143	4	16	1/4 x 17/32	.734	.408	.306	.255
1144	5	16	1/4 x 17/32	.734	.408	.306	.255
1144.1	6	16	1/4 x 17/32	.734	.408	.306	.255
1144.2	8	16	1/4 x 17/32	.734	.408	.306	.255
1145	10	16	1/4 x 17/32	.734	.408	.306	.255
1146	15	16	1/4 x 23/32	.767	.426	.306	.255
1147	20	16	1/4 x 23/32	.767	.426	.306	.255
1148	25	16	1/4 x 23/32	.767	.426	.306	.255
1149	30	16	5/16 x 23/32	.792	.44	.33	.275
1149.1	35	16	5/16 x 23/32	.792	.44	.33	.275
1150	50	16	5/16 x 23/32	.792	.44	.33	.275
1151	75	16	5/16 x 27/32	.828	.46	.345	.288
1152	85	16	3/8 x 23/32	.828	.46	.345	.288
1153	90	16	5/16 x 27/32	.828	.46	.345	.288
1160	100	16	3/8 x 27/32	.839	.466	.35	.291
1160.2	130	16	3/8 x 27/32	.839	.466	.35	.291
1160.3	150	16	3/8 x 31/32	.857	.476	.357	.298
1160.4	175	16	3/8 x 31/32	.857	.476	.357	.298
1160.5	180	16	3/8 x 31/32	.857	.476	.357	.292
1160.6	200	16	3/8 x 1 9/32	.918	.51	.383	.319
1161	250	16	3/8 x 1 9/32	.918	.51	.383	.319
1161.1	300	16	3/8 x 1 17/32	.95	.528	.396	.33
1161.2	350	16	3/8 x 1 17/32	.95	.528	.396	.33
1161.5	400	16	7/16 x 1 9/32	1.08	.60	.45	.375
1161.6	450	16	7/16 x 1 17/32	1.138	.632	.474	.395
1162	500	16	7/16 x 1 17/32	1.138	.632	.474	.395
1162.2	600	16	7/16 x 1 17/32	1.138	.632	.474	.395
1162.3	800	16	1/2 x 1 9/16	1.534	.852	.639	.533
1163	1000	16	1/2 x 1 13/16	1.616	.898	.674	.561
1164	1200	16	1/2 x 1 13/16	1.616	.898	.674	.561
1175.2	1500	16	13/16 x 1 21/32	1.667	.926	.695	.579
1170*	2000	16	13/16 x 1 21/32	1.667	.926	.695	.579
1175.3	2500	16	7/8 x 1 29/32	1.937	1.076	.807	.673
1175	3000	16	7/8 x 1 29/32	1.937	1.076	.807	.673
1175.4	4000	16	15/16 x 2 5/32	2.531	1.406	1.055	.879
1175.5	5000	16	1 x 2 5/32	2.819	1.566	1.175	.979
1175.6	6000	16	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1175.7	8000	16	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1175.8	10000	16	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1175.11	15000	16	1 1/4 x 3 11/16	4.306	2.392	1.794	1.495
1175.13	20000	16	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1180	150	20	3/8 x 31/32	.857	.476	.357	.298
1190	1500	20	7/8 x 1 21/32	1.937	1.076	.807	.673
1194	2300	20	1 x 1 21/32	2.693	1.496	1.122	.935
1200	1	25	1/4 x 17/32	.734	.408	.306	.255
1201	2	25	1/4 x 17/32	.734	.408	.306	.255
1201.1	3	25	1/4 x 17/32	.734	.408	.306	.255
1202	4	25	1/4 x 17/32	.734	.408	.306	.255
1203	5	25	1/4 x 17/32	.734	.408	.306	.255
1203.1	6	25	1/4 x 17/32	.734	.408	.306	.255
1203.3	8	25	1/4 x 17/32	.734	.408	.306	.255
1204	10	25	1/4 x 23/32	.767	.426	.32	.266
1204.2	15	25	1/4 x 23/32	.767	.426	.32	.266
1204.5	20	25	5/16 x 23/32	.792	.44	.33	.275
1205	25	25	5/16 x 23/32	.792	.44	.33	.275
1205.1	30	25	5/16 x 23/32	.792	.44	.33	.275
1205.2	35	25	5/16 x 23/32	.792	.44	.33	.275
1205.7	40	25	5/16 x 27/32	.828	.46	.345	.288
1206	50	25	5/16 x 27/32	.828	.46	.345	.288
1206.1	75	25	3/8 x 27/32	.839	.466	.35	.291
1207	100	25	3/8 x 31/32	.857	.476	.357	.298
1207.5	150	25	3/8 x 1 9/32	.918	.51	.383	.319
1207.7	200	25	3/8 x 1 17/32	.95	.528	.396	.33
1208	250	25	7/16 x 1 9/32	1.08	.60	.45	.375
1208.5	300	25	7/16 x 1 17/32	1.138	.632	.474	.395
1208.6	350	25	7/16 x 1 17/32	1.138	.632	.474	.395
1208.7	400	25	1/2 x 1 5/16	1.138	.632	.474	.395
1208.8	450	25	1/2 x 1 9/16	1.534	.852	.639	.533
1209	500	25	1/2 x 1 9/16	1.534	.852	.639	.533
1209.2	600	25	1/2 x 1 13/16	1.616	.898	.674	.561
1209.4	800	25	3/4 x 1 21/32	1.613	.896	.672	.56
1211	1000	25	13/16 x 1 21/32	1.667	.926	.695	.579
1212	1500	25	7/8 x 1 29/32	1.937	1.076	.807	.673
1213	2000	25	1 x 1 29/32	2.693	1.496	1.122	.935

*1-99, Kleer-Pak; 100 Up Bulk-Pack. 500 Up Bulk-Pack prices on request. *Mounting strap attached.

TYPE TVA ATOM® ELECTROLYTICS CONTINUED ON NEXT PAGE

TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249	250-499*
1213.5	2500	25	1 x 1 29/32	$2.693	$1.496	$1.122	$0.935
1214†	3000	25	1 x 2 5/32	2.693	1.496	1.122	.935
1214.2	4000	25	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1214.5	5000	25	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1214.8	8000	25	1 1/4 x 3 11/16	4.309	2.394	1.796	1.496
1214.10	10000	25	1 3/8 x 3 11/16	4.464	2.48	1.86	1.55
1222†	900	30	7/8 x 1 21/32	2.099	1.166	.875	.729
1222.1	1000	30	15/16 x 1 29/32	2.099	1.166	.875	.729
1223	200	35	7/16 x 1 17/32	1.138	.632	.474	.395
1225	300	35	1/2 x 1 9/16	1.534	.852	.639	.533
1227	500	35	1/2 x 1 13/16	1.616	.898	.674	.561
1229	5500	35	1 x 3 13/32	4.464	2.48	1.86	1.55
1300	1	50	1/4 x 17/32	.734	.408	.306	.255
1301	2	50	1/4 x 17/32	.734	.408	.306	.255
1302	3	50	1/4 x 17/32	.734	.408	.306	.255
1302.7	4	50	1/4 x 17/32	.734	.408	.306	.255
1303	5	50	1/4 x 23/32	.767	.426	.32	.266
1303.1	6	50	1/4 x 23/32	.767	.426	.32	.266
1303.2	8	50	1/4 x 23/32	.767	.426	.32	.266
1304	10	50	5/16 x 23/32	.792	.44	.33	.275
1305	15	50	5/16 x 23/32	.792	.44	.33	.275
1305.5	20	50	5/16 x 27/32	.828	.46	.345	.288
1306	25	50	5/16 x 27/32	.828	.46	.345	.288
1306.2	35	50	3/8 x 27/32	.839	.466	.35	.291
1306.5	40	50	3/8 x 31/32	.857	.476	.357	.298
1308	50	50	3/8 x 31/32	.857	.476	.357	.298
1309.3	60	50	3/8 x 1 9/32	.918	.51	.383	.319
1309.4	75	50	3/8 x 1 9/32	.918	.51	.383	.319
1310	100	50	3/8 x 1 17/32	.95	.528	.396	.33
1310.1	120	50	7/16 x 1 9/32	1.08	.60	.45	.375
1310.2	125	50	7/16 x 1 17/32	1.138	.632	.474	.395
1311	150	50	7/16 x 1 17/32	1.138	.632	.474	.395
1311.5	200	50	1/2 x 1 5/16	1.138	.632	.474	.393
1312	250	50	1/2 x 1 5/16	1.138	.632	.474	.393
1312.1	300	50	1/2 x 1 9/16	1.534	.852	.639	.533
1312.2	350	50	1/2 x 1 13/16	1.616	.898	.674	.561
1313	400	50	1/2 x 1 13/16	1.616	.898	.674	.561
1315	500	50	3/4 x 1 21/32	1.613	.896	.672	.56
1315.2	600	50	13/16 x 1 21/32	1.667	.926	.695	.579
1315.4	800	50	7/8 x 1 21/32	1.768	.982	.737	.614
1316	1000	50	15/16 x 1 29/32	2.099	1.166	.875	.729
1318	1500	50	15/16 x 2 5/32	2.531	1.406	1.055	.879
1318.2	2000	50	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1318.3	2500	50	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1318.4	3000	50	1 1/4 x 2 11/16	2.988	1.66	1.245	.913
1318.5	4000	50	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1318.7	5000	50	1 3/8 x 3 1/8	4.464	2.48	1.86	1.55
1318.10	8000	50	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1319	250	60	1/2 x 1 5/16	1.688	.938	.704	.586
1319.5	500	75	1 x 2 21/32	2.819	1.566	1.175	.979
1319.7	1000	75	1 x 2 21/32	2.988	1.66	1.245	1.038
1319.8†	1500	75	1 x 3 21/32	4.306	2.392	1.794	1.495
1319.9	2000	75	1 3/8 x 2 3/8	5.393	2.996	2.247	1.873
1320	10	90	3/8 x 27/32	.922	.512	.384	.32
1321	16	90	3/8 x 31/32	.94	.522	.392	.326
1330	1	100	1/4 x 17/32	.806	.488	.336	.28
1331	2	100	1/4 x 23/32	.842	.468	.351	.293
1332	3	100	5/16 x 23/32	.875	.486	.365	.304
1333	4	100	5/16 x 23/32	.875	.486	.365	.304
1334	5	100	5/16 x 27/32	.911	.506	.38	.316
1335	6	100	5/16 x 27/32	.911	.506	.38	.316
1336	8	100	3/8 x 27/32	.922	.512	.384	.32
1337	10	100	3/8 x 27/32	.922	.512	.384	.32
1338	15	100	3/8 x 31/32	.94	.522	.393	.326
1339	20	100	3/8 x 1 9/32	1.008	.56	.42	.35
1340	25	100	3/8 x 1 17/32	1.044	.58	.435	.363
1341	30	100	3/8 x 1 17/32	1.044	.58	.435	.363
1342	40	100	7/16 x 1 17/32	1.253	.696	.522	.435
1343	50	100	1/2 x 1 9/16	1.688	.938	.704	.586
1344	60	100	1/2 x 1 9/16	1.688	.938	.704	.586
1345	75	100	1/2 x 1 13/16	1.778	.988	.741	.618
1345.2	85	100	3/4 x 1 13/32	1.559	.866	.65	.541
1346	100	100	3/4 x 1 13/32	1.559	.866	.65	.541
1347	150	100	13/16 x 1 21/32	1.667	.926	.695	.579
1348	200	100	7/8 x 1 29/32	1.937	1.076	.807	.673
1349	250	100	7/8 x 1 29/32	1.937	1.076	.807	.673
1350	300	100	1 x 1 29/32	2.693	1.496	1.122	.935
1375	400	100	1 x 2 5/32	2.693	1.496	1.122	.935
1376	500	100	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1377	600	100	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1379	800	100	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1380	1000	100	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1382	1500	100	1 1/4 x 3 11/16	4.306	2.392	1.794	1.495
1384	2000	100	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1400	1	150	1/4 x 17/32	.806	.448	.336	.28
1400.1	2	150	1/4 x 23/32	.842	.468	.351	.293
1400.2	3	150	5/16 x 23/32	.875	.486	.365	.304
1402	4	150	5/16 x 27/32	.911	.506	.38	.316
1403	5	150	5/16 x 27/32	.911	.506	.38	.316
1403.1	6	150	3/8 x 27/32	.922	.512	.384	.32
1403.2	7	150	3/8 x 27/32	.922	.512	.384	.32
1405	8	150	3/8 x 27/32	.922	.512	.383	.32
1406	10	150	3/8 x 31/32	.94	.522	.392	.326
1407	12	150	3/8 x 1 9/32	1.008	.56	.42	.35
1408	15	150	3/8 x 1 9/32	1.008	.56	.42	.35
1409	16	150	3/8 x 1 17/32	1.044	.58	.435	.363
1410	20	150	3/8 x 1 17/32	1.044	.58	.435	.363
1411	25	150	7/16 x 1 9/32	1.188	.66	.495	.413
1412	30	150	7/16 x 1 17/32	1.253	.696	.522	.435
1412.1	35	150	1/2 x 1 17/32	1.688	.938	.704	.586
1413	40	150	1/2 x 1 17/32	1.688	.938	.704	.586

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249	250-499*
1414	50	150	1/2 x 1 13/16	$1.778	$0.988	$0.741	$0.618
1415	60	150	13/16 x 1 13/32	1.778	.988	.741	.618
1416	75	150	7/8 x 1 13/32	1.868	1.038	.779	.649
1418	80	150	7/8 x 1 13/32	1.962	1.09	.818	.681
1418.1	85	150	7/8 x 1 21/32	1.962	1.09	.818	.681
1420	100	150	7/8 x 1 21/32	1.962	1.09	.818	.681
1422	150	150	7/8 x 2 5/32	2.099	1.166	.875	.729
1422.5	160	150	1 x 1 29/32	2.099	1.166	.875	.729
1423	200	150	1 x 2 5/32	2.693	1.496	1.122	.935
1424*	250	150	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1425	300	150	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1426	350	150	1 x 3 5/32	2.988	1.66	1.245	1.038
1426.1	400	150	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1428	500	150	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1429	1000	150	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1430	80	175	13/16 x 1 29/32	1.937	1.076	.807	.673
1434	1	200	1/4 x 23/32	.842	.468	.351	.293
1435	2	200	5/16 x 23/32	.875	.486	.365	.304
1436	3	200	5/16 x 27/32	.911	.506	.38	.316
1437	4	200	3/8 x 27/32	.922	.512	.384	.32
1438	5	200	3/8 x 27/32	.922	.512	.384	.32
1439	6	200	3/8 x 31/32	.94	.522	.392	.326
1440	8	200	3/8 x 1 9/32	1.008	.56	.42	.35
1441	10	200	3/8 x 1 9/32	1.008	.56	.42	.35
1442	15	200	7/16 x 1 9/32	1.188	.66	.495	.413
1442.1	20	200	7/16 x 1 17/32	1.253	.696	.522	.435
1442.2	25	200	1/2 x 1 9/16	1.688	.938	.704	.586
1442.3	30	200	1/2 x 1 13/16	1.778	.988	.741	.618
1442.5	40	200	13/16 x 1 13/32	1.778	.988	.741	.618
1443	50	200	13/16 x 1 21/32	1.832	1.018	.764	.636
1443.1	60	200	7/8 x 1 21/32	1.886	1.048	.786	.655
1444	75	200	13/16 x 2 5/32	1.937	1.076	.807	.673
1444.2	85	200	7/8 x 1 29/32	1.937	1.076	.807	.673
1445	100	200	7/8 x 2 5/32	2.099	1.166	.875	.729
1446	120	200	1 x 1 29/32	2.934	1.63	1.223	1.019
1447*	150	200	1 x 2 5/32	2.808	1.56	1.17	.975
1480*	200	200	1 1/8 x 2 11/16	2.934	1.63	1.223	1.019
1484	500	200	1 1/4 x 3 11/16	4.306	2.392	1.794	1.495
1500	1	250	5/16 x 23/32	.875	.486	.365	.304
1500.1	2	250	3/8 x 23/32	.911	.506	.38	.316
1500.2	3	250	3/8 x 27/32	.922	.512	.384	.32
1501	4	250	3/8 x 31/32	.94	.522	.392	.326
1502	5	250	3/8 x 1 9/32	1.008	.56	.42	.35
1502.1	6	250	3/8 x 1 9/32	1.008	.56	.42	.35
1503	8	250	3/8 x 1 9/32	1.044	.58	.435	.363
1504	10	250	7/16 x 1 9/32	1.188	.66	.495	.413
1505	12	250	7/16 x 1 17/32	1.253	.696	.522	.435
1506	15	250	1/2 x 1 9/16	1.688	.938	.704	.586
1507	16	250	1/2 x 1 9/16	1.688	.938	.704	.586
1508	20	250	1/2 x 1 13/16	1.778	.988	.741	.618
1509	25	250	3/4 x 1 13/32	1.778	.988	.741	.618
1510	30	250	13/16 x 1 13/32	1.778	.988	.741	.618
1511	40	250	7/8 x 1 13/32	1.868	1.038	.779	.649
1512	50	250	7/8 x 1 21/32	1.868	1.038	.779	.649
1513	60	250	7/8 x 1 29/32	1.937	1.076	.807	.673
1515	70	250	7/8 x 1 29/32	1.973	1.096	.822	.685
1520	75	250	7/8 x 2 5/32	1.973	1.096	.822	.685
1521	85	250	7/8 x 2 5/32	1.973	1.096	.822	.685
1522	100	250	1 x 1 29/32	2.693	1.496	1.122	.935
1524	125	250	7/8 x 2 5/8	2.819	1.566	1.175	.979
1525	150	250	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1526	160	250	1 x 2 5/32	2.819	1.566	1.175	.979
1528†	200	250	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1528.2	225	250	1 x 3 5/32	2.988	1.66	1.245	1.038
1528.3	250	250	1 x 3 5/32	2.988	1.66	1.245	1.038
1528.5	300	250	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1528.7	400	250	1 1/4 x 3 11/16	4.306	2.392	1.794	1.495
1528.8	450	250	1 3/8 x 3 11/16	4.464	2.48	1.86	1.55
1528.9	500	250	1 3/8 x 3 11/16	4.464	2.48	1.86	1.55
1529	600	250	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1530	6	275	3/8 x 1 17/32	1.044	.58	.435	.363
1540	1	300	5/16 x 23/32	.875	.486	.365	.304
1541	2	300	3/8 x 27/32	.922	.512	.384	.32
1542	3	300	3/8 x 31/32	.94	.522	.392	.326
1543	4	300	3/8 x 1 9/32	1.008	.56	.42	.35
1544	5	300	3/8 x 1 9/32	1.008	.56	.42	.35
1545	6	300	3/8 x 1 17/32	1.044	.58	.435	.363
1546	8	300	7/16 x 1 17/32	1.253	.696	.522	.435
1547	10	300	7/16 x 1 17/32	1.253	.696	.522	.435
1548	12	300	1/2 x 1 9/16	1.688	.938	.704	.586
1549	15	300	1/2 x 1 9/16	1.688	.938	.704	.586
1550	20	300	1/2 x 1 13/16	1.778	.988	.741	.618
1551	25	300	3/4 x 1 21/32	1.778	.988	.741	.618
1552	30	300	3/4 x 1 29/32	1.832	1.018	.764	.636
1553	40	300	13/16 x 1 29/32	1.883	1.046	.785	.654
1570	50	300	7/8 x 1 29/32	1.937	1.076	.807	.673
1570.1	60	300	7/8 x 2 5/32	1.973	1.096	.822	.685
1571	75	300	1 x 2 5/32	2.693	1.496	1.122	.935
1571.2	85	300	1 x 2 13/32	2.808	1.56	1.17	.975
1573	100	300	1 1/8 x 2 5/32	2.819	1.566	1.175	.979
1575*†	140	300	1 x 3 5/32	2.988	1.66	1.245	1.038
1576†	150	300	1 1/4 x 2 11/16	2.988	1.66	1.245	1.038
1578†	200	300	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1580	300	300	1 3/8 x 3 11/16	4.464	2.48	1.86	1.55
1582	400	300	1 3/8 x 4 5/32	5.393	2.996	2.247	1.873
1599	1	350	5/16 x 27/32	.911	.506	.38	.316
1600	2	350	3/8 x 27/32	.922	.512	.384	.32
1600.1	3	350	3/8 x 31/32	.94	.522	.392	.326
1601	4	350	3/8 x 1 9/32	1.088	.56	.42	.35
1602.5	5	350	3/8 x 1 17/32	1.044	.58	.435	.363
1602.6	6	350	3/8 x 1 17/32	1.044	.58	.435	.363

*1-99, Kleer-Pak; 100 Up Bulk-Pack. 500 Up Bulk-Pack prices on request. *Mounting strap attached. †Single ended with two 8-inch flexible leads.

TYPE TVA ATOM® ELECTROLYTICS CONTINUED ON NEXT PAGE

TYPE TVA ATOM® ELECTROLYTIC CAPACITORS (CONT'D)

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249	250-499
1603	8	350	7/16 x 1 17/32	$1.25	$0.696	$0.522	$0.435
1604	10	350	1/2 x 1 9/16	1.69	.938	.704	.586
1605	12	350	1/2 x 1 9/16	1.69	.938	.704	.586
1607	15	350	1/2 x 1 13/16	1.78	.988	.741	.618
1607.1	16	350	3/4 x 1 13/32	1.78	.988	.741	.618
1608	20	350	3/4 x 1 21/32	1.78	.988	.741	.618
1609	25	350	3/4 x 1 29/32	1.83	1.018	.764	.636
1610	30	350	7/8 x 1 21/32	1.87	1.048	.786	.655
1611	40	350	7/8 x 1 29/32	1.94	1.076	.807	.673
1612	50	350	7/8 x 2 5/32	1.97	1.096	.822	.685
1613	60	350	15/16 x 2 5/32	2.75	1.526	1.145	.954
1614	75	350	1 x 2 13/32	2.81	1.560	1.170	.975
1615	85	350	1 1/8 x 2 5/32	2.82	1.566	1.175	.979
1620	100	350	1 x 2 21/32	2.93	1.630	1.223	1.019
1622*	150	350	1 1/4 x 2 11/16	2.99	1.660	1.245	1.038
1623	160	350	1 x 3 21/32	2.99	1.660	1.245	1.038
1624*	200	350	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1627	250	350	1 3/8 x 3 11/16	4.46	2.480	1.860	1.550
1628*	300	350	1 3/8 x 4 5/32	5.39	2.996	2.247	1.873
1640	1	385	3/8 x 2 7/32	.92	.512	.384	.320
1641	2	385	3/8 x 1 9/32	1.01	.560	.420	.350
1643	4	385	7/16 x 1 9/32	1.19	.660	.495	.413
1645	1	400	3/8 x 2 7/32	.92	.512	.384	.320
1646	2	400	3/8 x 1 9/32	1.01	.560	.420	.350
1647	3	400	3/8 x 1 17/32	1.04	.580	.435	.363
1648	4	400	7/16 x 1 9/32	1.19	.660	.495	.413
1649	5	400	7/16 x 1 17/32	1.25	.696	.522	.435
1650	6	400	1/2 x 1 5/16	1.25	.696	.522	.435
1651	8	400	1/2 x 1 9/16	1.69	.938	.704	.586
1652	10	400	1/2 x 1 13/16	1.78	.988	.741	.618
1653	12	400	1/2 x 1 13/16	1.78	.988	.741	.618
1654	15	400	3/4 x 1 21/32	1.78	.988	.741	.618
1655	16	400	3/4 x 1 21/32	1.78	.988	.741	.618
1656	20	400	3/4 x 1 29/32	1.83	1.018	.764	.636
1657	25	400	7/8 x 1 21/32	1.89	1.048	.786	.655
1658	30	400	15/16 x 1 21/32	1.94	1.076	.807	.673
1659	40	400	15/16 x 1 29/32	2.10	1.166	.875	.729
1660	50	400	1 x 2 5/32	2.69	1.496	1.122	.935
1661	60	400	1 x 2 13/32	2.81	1.560	1.170	.975
1662	75	400	1 1/8 x 2 5/32	2.82	1.566	1.175	.979
1663	85	400	1 1/8 x 2 11/16	2.93	1.630	1.223	1.019
1664	100	400	1 1/4 x 2 11/16	2.99	1.660	1.245	1.038
1665	150	400	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1666	200	400	1 1/4 x 3 11/16	4.31	2.392	1.794	1.495
1667	250	400	1 3/8 x 4 5/32	5.39	2.996	2.247	1.873
1700	1	450	3/8 x 2 7/32	.92	.512	.384	.320
1701	2	450	3/8 x 1 9/32	1.01	.560	.420	.350
1701.1	3	450	7/16 x 1 9/32	1.19	.660	.495	.413
1702	4	450	7/16 x 1 17/32	1.25	.696	.522	.435
1703	5	450	1/2 x 1 5/16	1.25	.696	.522	.435
1703.1	6	450	1/2 x 1 9/16	1.69	.938	.704	.586
1704	8	450	1/2 x 1 13/16	1.78	.988	.741	.618
1705	10	450	1/2 x 1 13/16	1.78	.988	.741	.618
1706	12	450	3/4 x 1 21/32	1.78	.988	.741	.618
1707	15	450	3/4 x 1 29/32	1.83	1.018	.764	.636
1708	16	450	7/8 x 1 21/32	1.89	1.048	.786	.655
1709	20	450	13/16 x 2 5/32	1.94	1.076	.807	.673
1710	25	450	15/16 x 1 29/32	2.10	1.166	.875	.729
1711	30	450	1 x 1 29/32	2.69	1.496	1.122	.935
1712	40	450	15/16 x 2 13/32	2.80	1.556	1.167	.973
1713	50	450	1 1/8 x 2 5/32	2.82	1.566	1.185	.979
1714	60	450	1 1/8 x 2 5/32	2.82	1.566	1.175	.979
1715	75	450	1 1/4 x 2 11/16	2.99	1.660	1.245	1.038
1716	80	450	1 x 3 21/32	2.99	1.660	1.245	1.038
1717	85	450	1 1/4 x 2 11/16	2.99	1.660	1.245	1.038
1718	100	450	1 1/4 x 3 5/32	3.82	2.122	1.592	1.326
1718.3	120	450	1 1/4 x 3 11/16	4.46	2.480	1.860	1.550
1719*	150	450	1 3/8 x 3 11/16	4.46	2.480	1.860	1.550
1719.2	160	450	1 3/8 x 3 11/16	4.46	2.480	1.860	1.550
1720*	200	450	1 3/8 x 4 5/32	5.39	2.996	2.247	1.873
1790	1	475	1/2 x 1 13/32	1.81	.656	.492	.410
1791	2	475	5/8 x 1 5/32	1.21	.672	.504	.420
1792	3	475	5/8 x 1 13/32	1.40	.776	.582	.485
1800	4	475	5/8 x 1 21/32	1.51	.836	.627	.523
1800.1	5	475	5/8 x 1 21/32	1.51	.836	.627	.523
1800.2	6	475	11/16 x 1 21/32	1.69	.938	.704	.586
1801	8	475	3/4 x 1 13/32	1.78	.988	.741	.618
1802	10	475	3/4 x 1 21/32	1.78	.988	.741	.618
1802.1	12	475	3/4 x 1 29/32	1.83	1.018	.764	.636
1803	15	475	13/16 x 1 29/32	1.88	1.046	.785	.654
1803.1	16	475	7/8 x 1 21/32	1.88	1.046	.785	.654
1804	20	475	13/16 x 2 5/32	1.94	1.076	.807	.673
1890	1	500	1/2 x 1 5/32	1.18	.656	.492	.410
1895	3	500	5/8 x 1 13/32	1.40	.776	.582	.485
1901	5	500	3/4 x 1 5/32	1.50	.836	.627	.523
1902	8	500	3/4 x 1 21/32	1.78	.988	.741	.618
1903	10	500	3/4 x 1 21/32	1.78	.988	.741	.618
1904	12	500	7/8 x 1 29/32	1.83	1.018	.764	.636
1905	16	500	7/8 x 2 5/32	1.88	1.046	.785	.654
1906	20	500	7/8 x 2 5/32	1.94	1.076	.807	.673
1907	30	500	1 x 1 29/32	2.75	1.526	1.145	.954
1908	40	500	1 x 2 13/32	2.81	1.560	1.170	.975
1910	60	500	1 x 3 13/32	2.93	1.630	1.223	1.019
1920	15	525	7/8 x 2 5/32	1.97	1.096	.822	.685
1930	2	550	5/8 x 1 5/32	1.51	.840	.630	.525
1962	8	600	1 1/16 x 2 7/8	1.95	1.082	.812	.676
1963	10	600	1 1/16 x 3 3/16	2.02	1.120	.840	.700
1965	16	600	1 1/16 x 4 1/16	2.35	1.306	.980	.816
1966	20	600	1 1/16 x 3 7/8	2.42	1.344	1.01	.840

*Single ended with two 8-inch flexible leads. *1-99 Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request.

NON-POLARIZED SINGLE UNITS

Sprague No. TVAN-	μF	WV NP	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-49	50-99	100-249	250-499
1095	500	3	3/8 x 1 17/32	$1.50	$1.50	$1.50	$1.50
1100.1	50	6	3/8 x 2 3/32	1.32	1.32	1.32	1.32
1101.5	125	6	3/8 x 3 1/32	1.35	1.35	1.35	1.35
1103.1	500	6	1/2 x 1 13/16	2.40	2.40	2.40	2.40
1109	2	10	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1110	5	10	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1111	6	10	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1112	8	10	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1112.4	10	10	1/4 x 2 3/32	1.20	1.20	1.20	1.20
1115	30	10	5/16 x 2 7/32	1.32	1.32	1.32	1.32
1117	50	10	3/8 x 2 3/32	1.32	1.32	1.32	1.32
1121	170	10	3/8 x 1 9/32	1.44	1.44	1.44	1.44
1125	450	10	5/8 x 1 21/32	1.89	1.89	1.89	1.89
1126	500	10	5/8 x 1 21/32	1.89	1.89	1.89	1.89
1129	2000	10	7/8 x 2 5/32	2.49	2.49	2.49	2.49
1132.1	500	12	5/8 x 2 1/8	2.49	2.49	2.49	2.49
1150	4	15	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1155	10	15	1/4 x 2 3/32	1.20	.666	.50	.416
1162.1	500	15	5/8 x 2 1/8	2.49	2.49	2.49	2.49
1163.1	1000	15	3/4 x 2 1/8	3.39	3.39	3.39	3.39
1176	2.5	20	1/4 x 1 7/32	1.17	1.17	1.17	1.17
1200	1	25	1/4 x 2 3/32	1.20	1.20	1.20	1.20
1202	2	25	1/4 x 1 7/32	1.20	.666	.50	.416
1202.2*	4	25	1/4 x 2 3/32	1.20	.666	.50	.416
1203.1	5	25	1/4 x 2 3/32	1.20	.666	.50	.416
1203.8*	8	25	5/16 x 2 3/32	1.24	.688	.516	.43
1204.1	10	25	5/16 x 2 3/32	1.24	.688	.516	.43
1204.3	16	25	5/16 x 2 7/32	1.32	1.32	1.32	1.32
1204.6	20	25	3/8 x 2 7/32	1.32	1.32	1.32	1.32
1205.1	25	25	3/8 x 1 23/32	1.32	1.32	1.32	1.32
1205.5	35	25	3/8 x 2 7/32	1.32	1.32	1.32	1.32
1206.1	50	25	3/8 x 3 1/32	1.34	.746	.56	.466
1207.1	100	25	3/8 x 1 17/32	1.49	.826	.62	.516
1215	3	30	1/4 x 2 3/32	1.20	1.20	1.20	1.20
1220	20	30	3/8 x 2 7/32	1.31	.728	.546	.455
1230	10	40	5/16 x 2 7/32	1.32	1.32	1.32	1.32
1232	20	40	3/8 x 3 1/32	1.35	1.35	1.35	1.35
1301.1	2	50	1/4 x 2 3/32	1.20	.666	.50	.416
1302.1	3	50	1/4 x 2 3/32	1.20	.666	.50	.416
1302.5*	4	50	1/4 x 2 3/32	1.20	.666	.50	.416
1303.1	5	50	5/16 x 2 3/32	1.24	.688	.516	.43
1304.1	10	50	5/16 x 2 7/32	1.30	.72	.54	.45
1306.1	25	50	3/8 x 1 9/32	1.44	.798	.599	.499
1306.2	30	50	3/8 x 1 9/32	1.44	.798	.599	.499
1308.1	50	50	7/16 x 1 9/32	1.69	.938	.704	.586
1309.2	60	50	7/16 x 1 17/32	1.80	1.80	1.80	1.80
1310.1	100	50	1/2 x 1 9/16	2.40	2.40	2.40	2.40
1333	10	100	1/2 x 1 5/8	1.89	1.89	1.89	1.89
1335	20	100	5/8 x 1 21/32	1.89	1.89	1.89	1.89
1340	40	100	3/4 x 1 21/32	2.04	2.04	2.04	2.04
1402.1	4	150	9/16 x 1 21/32	1.64	.912	.684	.57
1406.1	10	150	3/4 x 1 13/32	1.95	1.95	1.95	1.95
1413.1	40	150	3/4 x 2 1/8	2.49	2.49	2.49	2.49
1435.1	2	200	1/2 x 1 13/32	1.48	.82	.615	.513
1436	4	200	1 x 1 29/32	3.12	3.12	3.12	3.12
1440	60	200	1 x 2 21/32	3.53	1.962	1.472	1.226
1560	1	300	1/2 x 1 13/32	1.50	1.50	1.50	1.50
1568	20	300	7/8 x 1 29/32	2.43	2.43	2.43	2.43
1602	5	350	3/4 x 1 21/32	2.02	1.12	.84	.70
1604.1	10	350	1 x 1 29/32	3.12	3.12	3.12	3.12
1608.1	20	350	1 x 2 5/32	3.39	3.39	3.39	3.39
1650*	10	400	7/8 x 1 29/32	2.42	1.346	1.61	.841
1652	20	400	1 x 2 5/32	3.37	1.87	1.403	1.169
1705.1	10	450	1 x 1 29/32	3.12	3.12	3.12	3.12

*Mounting straps attached. *1-99 Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request.

DUAL UNITS

No. TVA-	μF at WVDC	Net Each, Lots of 1-49	50-99	100-249	250-Up
2175	1500–1000 at 20	$5.31	$5.313	$5.313	$5.313
2231†	2000– 500 at 30	5.15	5.154	5.154	5.154
2232.1†	3000–1000 at 30				
2235†	5000–1000 at 30	7.95	7.95	7.95	7.95
2315*	10– 10 at 50	1.28	1.278	1.278	1.278
2330†	100– 500 at 75	5.39	5.393	5.393	5.393
2335	200 at 85/150 at 25	2.44	2.437	2.437	2.437
2345	15 at 150/ 25 at 25	1.28	1.278	1.278	1.278
2358†	350 at 150/100 at 50	3.80	3.795	3.795	3.795
2420*	16– 16 at 150	1.44	1.438	1.438	1.438

*Mounting strap attached. †Kraftboard case construction. •1-99, Kleer-Pak; 100 Up Bulk-Pack.

TYPE TVA ATOM® ELECTROLYTICS
CONTINUED ON THE NEXT PAGE

TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

DUAL UNITS, COMMON NEGATIVE—THREE LEADS (CONT'D)

No. TVA-	μF at WVDC	Net Each, Lots of* 1-49	50-99	100-249	250-499
2421*	30– 20 at 150	$1.48	$1.478	$1.478	$1.478
2425*	20– 12 at 150	1.40	1.398	1.398	1.398
2428*	20– 20 at 150	1.40	1.398	1.398	1.398
2434*	30– 30 at 150	1.44	1.438	1.438	1.438
2438*	40– 20 at 150	1.52	1.518	1.518	1.518
2442*	40– 30 at 150	1.44	1.438	1.438	1.438
2445*	40– 40 at 150	1.48	1.478	1.478	1.478
2450*	50– 30 at 150	1.56	1.558	1.558	1.558
2453*	50– 50 at 150	1.68	1.678	1.678	1.678
2455*	60– 20 at 150	1.60	1.598	1.598	1.598
2456*	60– 40 at 150	1.68	1.678	1.678	1.678
2457*	60– 60 at 150	1.84	1.838	1.838	1.838
2459*	80– 20 at 150	1.72	1.718	1.718	1.718
2460*	80– 30 at 150	1.76	1.758	1.758	1.758
2461*	80– 40 at 150	1.76	1.758	1.758	1.758
2462*	80– 50 at 150	1.88	1.878	1.878	1.878
2463*	100– 50 at 150	2.12	2.117	2.117	2.117
2464†	100–100 at 150	2.56	2.557	2.557	2.557
2464.8	130– 20 at 150	2.56	2.557	2.557	2.557
2465.5	150– 20 at 150	2.64	2.637	2.637	2.637
2465.8	150– 50 at 150	2.20	2.197	2.197	2.197
2466†	150–150 at 150	2.76	2.757	2.757	2.757
2467*	200– 5 at 150	2.12	2.117	2.117	2.117
2470*†	200–100 at 150	3.16	3.156	3.156	3.156
2473†	250– 50 at 150	2.64	2.637	2.637	2.637
2473.5†	425– 20 at 150	2.92	2.916	2.916	2.916

No. TVA-	μF at WVDC	Net Each, Lots of* 1-49	50-99	100-249	250-499
2475†	250–200 at 150	$3.36	$3.356	$3.356	$3.356
2484*†	60 at 200/125 at 50	2.28	2.277	2.277	2.277
2493*	60– 1 at 200	1.72	1.718	1.718	1.718
2498*	200– 5 at 200	2.88	2.876	2.876	2.876
2515*	20– 20 at 250	1.48	1.478	1.478	1.478
2520*	40– 10 at 250	1.64	1.638	1.638	1.638
2525*	80– 10 at 250	2.04	2.037	2.037	2.037
2535†	120– 80 at 250	3.20	3.196	3.196	3.196
2563†	140 at 300/100 at 50	3.16	3.156	3.156	3.156
2565*†	200 at 300/100 at 50	3.44	3.436	3.436	3.436
2585	60– 32 at 300	2.56	2.557	2.557	2.557
2590†	150–100 at 300	4.28	4.275	4.275	4.275
2622	150 at 350/100 at 25	3.44	3.436	3.436	3.436
2635.5	30– 5 at 350	1.72	1.718	1.718	1.718
2636	30– 20 at 350	2.00	1.998	1.998	1.998
2640*†	140– 5 at 350	3.32	3.316	3.316	3.316
2663*	10 at 450/100 at 50	1.80	1.798	1.798	1.798
2720*	8– 8 at 450	1.56	1.558	1.558	1.558
2722*	10– 10 at 450	1.64	1.638	1.638	1.638
2725*	16– 8 at 450	1.76	1.758	1.758	1.758
2730	20– 20 at 450	2.00	1.998	1.998	1.998
2735*	30– 30 at 450	2.60	2.597	2.597	2.597
2740*	40– 40 at 450	3.00	2.996	2.996	2.996
2743*	50– 30 at 450	2.72	2.717	2.717	2.717
2750*	80– 30 at 450	3.32	3.316	3.316	3.316
2765*	20 at 475/100 at 50	2.00	1.998	1.998	1.998

TRIPLE UNITS

No. TVA-	Cap., μF	WVDC	Net Each, Lots of* 1-49	50-99	100-249
3392.4	6000–300–100	15– 15– 15	$2.72	$2.717	$2.717
3393†	2000–200–100	16– 13– 6	3.64	3.635	3.635
3406*	40– 40–250	150–150– 10	2.60	2.597	2.597
3419*	30– 30–100	150–150– 12	2.44	2.437	2.437
3421.5*	60– 40–250	150–150– 15	2.68	2.677	2.677
3422.4	150– 20– 20	150–150– 15	2.36	2.357	2.357
3422.5	150– 40– 20	150–150– 15	2.44	2.437	2.437
3422.9*	40– 20– 20	150–150– 25	2.40	2.397	2.397
3423*	40– 30– 20	150–150– 25	2.40	2.397	2.397
3425*	40– 40– 20	150–150– 25	2.48	2.477	2.477
3430*	50– 30– 20	150–150– 25	2.48	2.477	2.477
3432*	50– 30–100	150–150– 25	2.56	2.557	2.557
3433*	50– 30–200	150–150– 25	2.68	2.677	2.677
3436*	50– 50– 20	150–150– 25	2.52	2.517	2.517
3437†	80– 20–100	150–150– 25	2.52	2.517	2.517
3437.1*	80– 40– 20	150–150– 25	2.60	2.597	2.597
3437.6*†	250–120– 50	150–150– 25	3.80	3.795	3.795
3439.4	150– 20– 20	150–150– 25	2.36	2.357	2.357
3440*	20– 20– 20	150–150–150	2.36	2.357	2.357
3442*	30– 25– 20	150–150–150	2.40	2.397	2.397
3443*	30– 30– 20	150–150–150	2.44	2.437	2.437
3444*	30– 30– 30	150–150–150	2.48	2.477	2.477
3445*	40– 20– 10	150–150–150	2.40	2.397	2.397
3446*	40– 20– 20	150–150–150	2.40	2.397	2.397
3448*	40– 30– 20	150–150–150	2.48	2.477	2.477
3449*	40– 30– 30	150–150–150	2.48	2.477	2.477
3450*	40– 40– 20	150–150–150	2.48	2.477	2.477
3451*	40– 40– 40	150–150–150	2.56	2.557	2.557
3453*	50– 30– 20	150–150–150	2.52	2.517	2.517
3453.5*	50– 50– 50	150–150–150	2.68	2.677	2.677
3454	60– 30– 10	150–150–150	2.00	1.988	1.998
3454.3*	60– 40– 40	150–150–150	2.64	2.637	2.637
3454.5	60– 50– 20	150–150–150	1.80	1.798	1.798
3454.6	60– 60– 20	150–150–150	2.56	2.557	2.557
3455*	80– 40– 20	150–150–150	2.64	2.637	2.637
3456*	80– 40– 40	150–150–150	2.72	2.717	2.717
3456.4	80– 50– 20	150–150–150	2.60	2.597	2.597
3456.5*	80– 50– 50	150–150–150	2.80	2.797	2.797

No. TVA-	Cap., μF	WVDC	Net Each, Lots of* 1-49	50-99	100-249
3457*	80– 60– 20	150–150–150	$2.72	$2.717	$2.717
3457.5	80– 80– 80	150–150–150	2.92	2.916	2.916
3458*	100– 30– 10	150–150–150	2.64	2.637	2.637
3458.5	100– 60– 40	150–150–150	2.68	2.677	2.677
3459*†	150–150–150	150–150–150	3.92	3.915	3.915
3460*†	250–200– 10	150–150–150	3.68	3.675	3.675
3460.5†	250– 50– 10	160–160– 25	2.92	2.916	2.916
3460.8	80–100– 40	160–160–150	2.88	2.876	2.876
3461†	250–120– 50	160–160–100	3.76	3.755	3.755
3461.5†	250–250– 50	160–160–160	4.20	4.195	4.195
3461.8†	250–250– 50	180–180–180	4.44	4.434	4.434
3465†	300–300– 60	200–150–150	4.52	4.514	4.514
3473†	150–150– 20	200–200–200	5.32	4.315	4.315
3475†	250–200– 10	200–200–200	4.95	4.954	4.954
3485†	40– 20–100	250–250– 50	2.64	2.637	2.637
3493†	200–150– 50	250–250–150	4.95	4.954	4.954
3350†	100–200– 40	300–200–200	5.75	5.753	5.753
3358†	80– 40–100	300–300– 50	3.20	3.196	3.196
3559†	100– 60–100	300–300– 50	3.96	3.955	3.955
3560†	120– 40–100	300–300– 50	4.08	4.075	4.075
3561†	70– 50– 30	300–300–250	3.48	3.476	3.476
3563†	120– 40– 10	300–300–250	3.86	3.875	3.875
3567†	60– 60– 60	300–300–300	3.80	3.795	3.795
3569†	80– 40– 40	300–300–300	3.72	3.715	3.715
3590*†	100– 40– 40	350–300–250	4.36	4.355	4.355
3605*†	100– 20– 50	350–350– 50	3.76	3.755	3.755
3620†	140– 5–200	350–350–200	5.35	5.353	5.353
3626†	60– 60– 60	350–350–250	3.80	3.795	3.795
3630†	60– 60– 4	350–350–350	3.16	3.156	3.156
3650†	10– 80– 60	400–250–150	3.20	3.196	3.196
3667†	100– 75– 70	400–400– 25	4.83	4.834	4.834
3712*†	5– 80– 4	450–400–400	3.68	3.675	3.675
3716*	12– 12– 20	450–450– 25	2.56	2.557	2.557
3718*	20– 20– 20	450–450– 25	2.80	2.797	2.797
3720*	40– 40– 20	450–450– 25	3.48	3.476	3.476
3740*	40– 20– 20	450–450–450	3.44	3.436	3.436
3748†	60– 60– 60	450–450–450	5.11	5.114	5.114

QUADRUPLE UNITS

No. TVA-	Cap., μF	WVDC	Net Each, Lots of* 1-49	50-99	100-249
4507	100–100– 50– 50	75– 75– 75– 75	$3.76	$3.755	$3.755
4517†	40– 20– 20–100	150–150–150– 25	2.88	2.876	2.876
4520*†	40– 40– 20– 20	150–150–150– 25	2.92	2.916	2.916
4525†	50– 50– 30– 25	150–150–150– 25	3.00	2.996	2.996
4529†	60– 40– 40– 20	150–150–150– 25	3.12	3.116	3.116
4546†	250–250– 30– 20	160–160–150–150	4.55	4.554	4.554
4547†	425– 50– 20– 50	175–150–150– 25	4.83	4.834	4.834
4560*	40– 40– 40– 25	250–250–150– 25	2.96	2.956	2.956
4567†	100– 40– 40– 25	300–300– 50– 25	4.04	4.035	4.035
4576†	140– 5–200– 30	350–300–200–150	4.95	4.954	4.954
4580†	150–100– 20–100	300–300–300– 25	5.55	5.553	5.553
4580.5†	100– 80– 20– 50	300–300–300– 50	4.79	4.794	4.794
4582†	80– 40– 10– 40	300–300–300–250	4.12	4.115	4.115
4584†	120– 40– 40– 10	300–300–300–250	4.95	4.954	4.954
4607†	140– 5–200– 30	350–300–200–200	6.11	6.112	6.112
4618†	80– 60– 40– 20	350–350–300–150	4.71	4.714	4.714

No. TVA-	Cap., μF	WVDC	Net Each, Lots of* 1-49	50-99	100-249
4634†	150–100– 20–100	350–350–350– 50	$6.27	$6.272	$6.272
4659*†	80– 10– 40–100	400–400–300– 50	4.36	4.355	4.355
4705*†	10– 80– 40–100	450–300–250– 50	4.08	4.075	4.075
4706*†	20–120– 40–100	450–300–250– 50	4.91	4.914	4.914
4708*†	10– 80– 40– 40	450–300–250–250	4.04	4.035	4.035
4742†	20– 20– 20– 10	450–450–450–450	3.68	3.675	3.675
4748†	40– 20– 20– 10	450–450–450–450	4.24	4.235	4.235
4750†	40– 40– 20– 20	450–450–450–450	4.36	4.355	4.355

QUINTUPLE UNITS

No. TVA-	Cap., μF	WVDC	Net Each, Lots of* 1-49	50-99	100-249
5100†	40–20–20–20–50	300–300–300–300–50	$4.04	$4.035	$4.035

*1–99, Kleer-Pak; 100 Up Bulk-Pack. 100 Up also available in Triple, Quadruple and Quintuple units, prices on request. *Mounting strap attached. †Kraft-board case construction.

SPRAGUE Twist-Lok® Capacitors

• The world's most complete line of can-type electrolytics. • Especially designed for tough TV replacement applications. • Hermetically sealed in aluminum cans for long life. • Stand up under high temperatures, high ripple currents, high surge voltages. • Ideal for above-chassis mounting—complete with phenolic and metal washers. • The most dependable electrolytic in such compact size. • Easy to mount—a twist of the tabs locks unit in place. • Designed for 85° C (185° F) operation. **Certain less popular TVL numbers have been omitted from this listing. Write for complete catalog of Sprague TVL capacitors.**

TYPE TVL SINGLE UNITS

Sprague No. TVL-	Cap., µF	W V DC	*	Net Each, Lots of 1-24	25-49	50-99*
1160	225	15	A	$1.86	$1.86	$1.86
1165†	1000	15	C	2.10	1.47	1.145
1167	1500	15	E	2.34	2.34	2.34
1168	2000	15	L	2.94	1.955	1.512
1170	3000	15	L	3.69	2.379	1.888
1173	4000	15	L	2.43	1.678	1.342
1220	500	25	C	1.65	1.125	.900
1230	1000	25	L	2.73	1.788	1.462
1245	3500	25	M	3.99	3.99	3.99
1265	1000	35	O	2.67	2.67	2.67
1269†	3000	35	M	2.64	1.83	1.464
1317	100	50	A	1.50	1.035	.828
1324	250	50	E	1.80	1.245	.996
1330	500	50	L	2.43	1.68	1.344
1338†	1000	50	M	3.00	1.723	1.378
1341	1500	50	M	3.69	2.792	2.237
P1342‡	2000	50	M	2.85	1.965	1.572
1415†	50	150	C	1.53	1.14	.912
1423	100	150	C	1.71	1.29	1.032
1425	120	150	E	2.31	2.31	2.31
1428§	140	150	G	2.82	2.82	2.82
1429	150	150	E	2.04	1.40	1.12
1430	150	150	L	2.07	1.423	1.138
1431	200	150	L	2.19	1.505	1.204
1431.1	200	150	H	1.95	1.358	1.086
1434	300	150	L	2.55	1.928	1.542
1439.5†	500	150	R	3.15	2.188	1.75
•1448	120	175	G	$1.77	$1.33	$1.064
1470	125	200	G	2.22	1.68	1.344
1471	150	200	H	2.28	1.578	1.262
1471.1	150	200	L	2.37	1.625	1.30
1473§	160	200	L	2.40	1.663	1.33
1475†	200	200	L	2.67	1.838	1.47
1475.1	200	200	I	2.49	1.728	1.382
1490†	500	200	S	4.23	2.939	2.331
1509	20	250	C	2.19	2.19	2.19
1519	40	250	E	1.74	1.208	.966
1530	80	250	E	2.01	1.393	1.114
1535	100	250	H	1.89	1.31	1.048
1539	150	250	G	2.64	1.685	1.366
1540	150	250	L	2.73	1.88	1.504
1541†#	160	250	M	3.09	2.34	1.872
1541.1†	160	250	I	2.79	2.103	1.682
1547†	200	250	M	3.15	1.943	1.554
1573	80	300	G	2.13	1.468	1.174
1578	100	300	G	2.19	1.515	1.212
1580	125	300	M	2.19	1.505	1.204
1584	150	300	R	3.00	2.068	1.654
1585	160	300	M	2.73	1.895	1.516
1586†	200	300	O	3.84	2.427	1.928
1590†	250	300	O	3.63	2.508	2.006
1617	30	350	E	2.13	2.13	2.13
1621	40	350	E	1.89	1.295	1.036
1622	50	350	E	1.80	1.248	.998
1624	60	350	G	$2.49	$2.49	$2.49
1630	80	350	L	2.49	1.888	1.51
1638	125	350	M	2.85	1.968	1.574
1642	150	350	M	3.12	2.155	1.724
1643†	200	350	R	3.99	2.755	2.204
1644.2†	250	350	R	3.87	2.688	2.15
1645†	320	350	S	4.65	3.225	2.58
1705	10	450	C	1.68	1.153	.922
1714§	20	450	E	1.68	1.265	1.012
1720	30	450	G	1.83	1.375	1.10
1725	40	450	G	1.98	1.485	1.188
1728	50	450	G	2.28	1.583	1.266
1730	60	450	L	3.57	3.57	3.57
1735†	80	450	M	2.70	2.045	1.636
1750	100	450	M	3.09	2.328	1.862
1760	125	450	O	3.63	2.508	2.006
1770†	150	450	R	3.99	2.768	2.214
1772	160	450	S	4.05	2.80	2.240
1820	40	475	L	3.00	3.00	3.00
1940	10	500	C	2.31	2.31	2.31
1943	20	500	E	1.98	1.36	1.088
1947	30	500	G	2.01	1.38	1.104
1950	40	500	G	2.40	1.66	1.328
1958†	80	500	M	3.39	2.358	1.886
1960	90	500	M	3.30	2.488	1.99
1980	15	525	O	3.15	3.15	3.15
1990	20	600	S	3.84	2.663	2.13

TYPE TVL DUAL UNITS

Sprague No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of 1-24	25-49	50-99*
2160	1000-1000	15-15	G	$2.61	$2.61	$2.61
2161	1000-1000	15-15	M	3.81	3.81	3.81
•2177	500-500	16-16	C	2.94	2.94	2.94
2233	500-500	25-25	L	2.91	2.91	2.91
2239	1000-500	25-25	L	2.40	1.66	1.328
P2242.9‡	1000-500	30-30	M	3.69	3.69	3.69
2326	100-100	50-50	C	1.95	1.335	1.068
2413	150-100	150-50	H	2.64	2.64	2.64
2415	20-20	150-150	C	2.13	2.13	2.13
2425	40-20	150-150	C	2.46	2.46	2.46
2428	40-40	150-150	C	1.77	1.335	1.068
2432§	50-30	150-150	C	1.80	1.363	1.09
2435†	50-50	150-150	C	2.01	1.378	1.102
•2435.1	50-50	150-150	C	2.88	2.88	2.88
2439§	70-30	150-150	E	2.13	1.468	1.174
•2441	80-30	150-150	E	3.00	3.00	3.00
2442§	80-40	150-150	L	3.15	3.15	3.15
2442.1§	80-50	150-150	E	2.16	1.498	1.198
2442.2	80-60	150-150	H	2.73	2.73	2.73
2442.4	80-80	150-150	L	3.33	3.33	3.33
2447	200-200	150-150	M	3.45	2.105	1.684
2461	60-60	200-200	D	2.22	1.535	1.228
2464	100-100	200-200	O	2.91	2.00	1.60
2475†	250-100	200-200	O	3.57	2.46	1.96
2475.5	300-300	200-200	S	4.74	3.283	2.626
2509.9	250-100	250-200	M	4.98	4.98	4.98
2515	20-20	250-250	C	1.92	1.33	1.064
2520	40-40	250-250	D	2.10	1.448	1.158
2535†	150-150	250-250	M	4.05	2.515	2.012
2538	200-200	250-250	S	4.74	3.278	2.622
2560.7	150-250	300-150	O	3.60	2.72	2.176
2585	80-80	300-300	M	3.09	2.138	1.71
2591	150-100	300-300	O	4.65	2.836	2.248
2593	200-80	300-300	S	5.19	5.19	5.19
2595	200-100	300-300	S	5.16	2.783	2.226
2626	20-20	350-350	E	2.61	2.61	2.61
2628	30-30	350-350	G	2.25	1.548	1.238
2629†	50-10	350-350	H	2.37	1.625	1.30
2630	50-30	350-350	L	3.63	3.63	3.63
2634	80-40	350-350	M	3.54	2.35	1.862
2635	80-80	350-350	M	4.05	2.025	1.620
2639	100-60	350-350	M	$3.27	$2.273	$1.818
2641	100-100	350-350	O	4.65	2.51	2.008
2642	150-20	350-350	R	4.59	4.59	4.59
2642.5†	150-150	350-350	S	4.14	2.95	2.512
2643	160-10	350-350	O	3.48	2.40	1.92
2645.5†	200-200	350-350	U	5.88	3.879	3.048
2656	80-80	400-200	R	4.41	4.41	4.41
2677	80-60	400-400	O	4.44	4.44	4.44
2678	80-80	400-400	S	5.16	5.16	5.16
2679	120-40	400-400	S	6.00	6.00	6.00
2720†	80-40	450-200	O	4.20	4.20	4.20
2722	20-50	450-250	H	3.21	3.21	3.21
2722.7†	20-160	450-250	M	3.21	2.213	1.77
2722.8†	80-200	450-250	U	4.40	3.07	2.456
2723†	90-200	450-250	S	5.94	5.94	5.94
2738.5†	80-2	450-350	M	3.21	2.225	1.78
2750†	10-10	450-450	E	2.07	1.565	1.252
2753	15-15	450-450	G	2.25	1.555	1.244
2754	20-10	450-450	E	2.97	2.97	2.97
2755	20-20	450-450	G	2.16	1.628	1.302
2757†	30-10	450-450	G	3.06	3.06	3.06
2759	30-30	450-450	L	2.70	2.045	1.636
2762	40-20	450-450	L	5.10	4.403	3.488
2764†	40-40	450-450	M	3.21	2.213	1.77
2767†	50-50	450-450	O	3.51	2.43	1.944
2768	60-20	450-450	O	4.11	4.11	4.11
2772†	60-60	450-450	O	3.72	2.583	2.066
2776	80-10	450-450	O	4.44	4.44	4.44
2776.5	80-20	450-450	M	3.48	2.415	1.932
2778†	80-40	450-450	R	3.84	2.658	2.126
2778.5†	80-50	450-450	R	3.99	2.765	2.212
2779†	80-80	450-450	R	4.44	3.07	2.456
2780	100-40	450-450	R	4.20	2.903	2.322
2808†	80-160	475-250	U	4.47	3.10	2.48
2813	20-100	475-400	O	4.95	4.95	4.95
2851	80-50	475-475	R	5.94	5.94	5.94
2933	10-10	500-500	E	2.79	2.79	2.79
2935	20-20	500-500	L	2.64	1.998	1.598
2937	30-30	500-500	L	3.15	2.178	1.742
2940	40-40	500-500	M	3.69	2.543	2.034
2944	60-40	500-500	R	4.05	2.798	2.238

TYPE TVL TRIPLE UNITS

Sprague No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of 1-24	25-49	50-99*
3021	850-400-4	16-16-11.5	G	$3.45	$2.292	$1.796
•3021.2	850-400-4	16-16-11.5	E	3.42	3.42	3.42
•3025.2	450-100-50	16-16-16	E	2.76	2.76	2.76
•3026.6	500-250-250	16-16-16	E	3.24	3.24	3.24
3026.8	500-500-100	16-16-16	E	2.85	2.85	2.85
•3026.11	500-500-100	16-16-16	C	3.12	3.12	3.12
•3414.3	80-60-250	150-150-10	G	3.03	3.03	3.03
3432	80-40-20	150-150-25	E	2.94	2.94	2.94
•3435.1	30-30-30	150-150-150	E	3.24	3.24	3.24
3437	40-20-20	150-150-150	C	2.70	2.70	2.70
3438	40-30-20	150-150-150	E	3.00	3.00	3.00
•3439	40-40-20	150-150-150	E	2.61	2.61	2.61
3440	40-40-40	150-150-150	D	2.28	1.575	1.26
•3440.5	50-30-20	150-150-150	E	2.82	2.82	2.82
•3441.2	50-40-30	150-150-150	G	2.70	2.70	2.70
3442	50-50-50	150-150-150	E	2.37	1.648	1.318
3443	60-40-20	150-150-150	D	2.88	2.88	2.88
3443.4	70-40-40	150-150-150	G	3.03	3.03	3.03
•3443.5	60-60-40	150-150-150	L	3.60	3.60	3.60
3444	80-40-20	150-150-150	E	2.37	1.628	1.302
•3445.5	80-80-60	150-150-150	H	3.63	3.63	3.63
3446	80-80-80	150-150-150	O	$3.63	$3.63	$3.63
3450	200-100-60	150-150-150	M	4.35	4.35	4.35
3452	200-150-150	150-150-150	O	4.95	4.95	4.95
3453	250-200-10	150-150-150	S	4.86	4.86	4.86
3454.12	250-200-50	175-175-175	S	4.47	3.095	2.476
3461.4	60-200-140	200-150-150	O	4.38	4.38	4.38
3461.8	250-200-50	200-150-150	R	4.41	3.045	2.436
3469	60-5-200	200-200-50	G	3.09	3.09	3.09
3489.5	250-100-5	200-200-200	O	3.57	2.478	1.982
3490	250-200-10	200-200-200	S	5.10	3.121	2.474
3491	250-200-50	200-200-200	R	4.47	3.103	2.482
3532	20-20-20	250-250-250	D	2.85	2.85	2.85
3540	40-20-20	250-250-250	E	2.94	2.94	2.94
3545	80-80-60	250-250-250	O	4.23	4.23	4.23
3574.3	125-20-20	300-300-50	R	4.38	4.38	4.38
3574.6	125-60-40	300-300-50	S	4.71	4.71	4.71

*See following page for sizes. †Exact replacement for color TV. ‡With common positive. §Also available in printed circuit version; prices similar, add prefix **PCL-** to order. •Printed circuit version only, add prefix **PCL-**. #With plastic outer insulating sleeve. ***Larger quantity prices on request.**

SPRAGUE Twist-Lok® Capacitors

TYPE TVL TRIPLE UNITS (CONTINUED)

Sprague No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of 1-24	25-49	50-99*
3574.7	140-100-60	200-300-50	R	$5.40	$5.40	$5.40
3574.8	140-100-100	300-300-50	R	5.22	5.22	5.22
3577.9	80-10-200	300-300-200	O	4.95	4.95	4.95
3583	80-40-40	300-300-300	M	3.90	2.409	1.931
3585.5	140-100-20	300-300-300	U	5.40	5.40	5.40
•3586	150-100-30	300-300-300	S	5.73	5.73	5.73
3587	160-60-20	300-300-300	S	5.22	5.22	5.22
3588	200-100-2	300-300-300	S	4.23	2.925	2.34
3608.12	10-150-200	350-200-25	L	3.93	3.93	3.93
3625.5	160-120-30	350-300-300	U	6.18	6.18	6.18
3628.5	150-100-100	350-350-50	U	4.38	3.04	2.432
3630	15-10-20	350-350-25	E	2.91	2.91	2.91
3635	20-20-20	350-350-25	E	3.03	3.03	3.03
3636.18	250-3-200	350-350-25	S	6.39	6.39	6.39
3637.3	150-5-100	350-350-50	M	4.05	2.533	2.026
3637.10	100-150-200	350-350-25	R	5.10	3.10	2.48
3637.12	100-20-100	350-350-50	M	3.96	3.96	3.96
3638.17	100-20-130	350-350-200	O	4.92	4.92	4.92
3639.2	100-60-20	350-350-200	S	4.77	4.77	4.77
3639.8	30-20-10	350-350-350	G	2.22	1.525	1.22
3639.9	50-50-50	350-350-350	R	4.83	4.83	4.83
3639.14	40-40-40	350-350-350	M	4.23	4.23	4.23
3640	60-40-20	350-350-350	M	4.02	4.02	4.02
3641	60-50-50	350-350-350	M	4.56	4.56	4.56
3642	80-60-60	350-350-350	R	4.80	2.633	2.106
3646.5†	100-100-40	350-350-350	S	4.20	2.915	2.332
3648	140-140-20	350-350-350	S	6.09	3.639	2.966
3648.6†	200-80-120	350-350-350	U	5.67	3.923	3.138
3651.8	80-80-200	400-200-25	O	3.54	2.453	1.962
3652	80-80-100	400-200-50	O	3.69	2.555	2.044
3668	10-4-20	400-350-25	E	1.95	1.355	1.084
3678	20-20-20	400-400-25	G	3.36	3.36	3.36
3683	80-40-100	400-400-50	O	3.96	2.735	2.188
3684	80-40-150	400-400-50	S	4.29	2.955	2.372
3685	100-10-20	400-400-50	M	4.38	4.38	4.38
3689.3	100-10-80	400-400-350	R	5.25	3.008	2.406
3697†	100-30-20	400-400-400	S	4.62	2.758	2.206
3698	100-40-10	400-400-400	S	5.28	5.28	5.28
3711.2†	50-160-50	450-250-50	S	4.32	2.998	2.398
3711.3†	20-160-40	450-250-150	R	4.77	4.77	4.77
3719.4†	50-10-160	450-350-250	U	4.17	2.885	2.308
3719.10†	80-2-25	450-350-25	M	3.21	2.41	1.928
3723.7†	80-50-100	450-350-200	R	4.95	3.11	2.488
3731	10-10-20	450-450-25	E	2.01	1.52	1.216
3739	20-20-20	450-450-25	H	2.40	1.665	1.332
3744	40-40-20	450-450-25	M	4.38	4.38	4.38
3754.9†	80-65-50	450-450-50	R	4.62	3.198	2.558
3755	40-40-100	450-450-50	O	4.47	4.47	4.47
3757†	80-20-100	450-450-50	O	4.08	2.803	2.28
3764	40-40-100	450-450-200	O	5.01	5.01	5.01
3774	40-40-80	450-450-350	S	5.91	5.91	5.91
3775.7†	10-80-80	400-450-450	U	5.01	3.47	2.776
3775.9†	80-80-20	450-450-400	R	4.98	3.445	2.756
3776	10-10-10	450-450-450	E	2.43	1.83	1.464
3778	15-15-10	450-450-450	H	3.57	3.57	3.57
3778.2	15-15-15	450-450-450	G	3.42	3.42	3.42
3779	20-10-10	450-450-450	H	3.30	3.30	3.30
3780†	20-20-20	450-450-450	L	3.12	2.165	1.732
3781	30-20-20	450-450-450	M	3.27	2.285	1.806
3782	30-30-30	450-450-450	O	3.57	2.483	1.986
3784	40-30-20	450-450-450	M	3.45	2.393	1.914
3785	40-40-10	450-450-450	M	3.57	2.465	1.972
3786†	40-40-20	450-450-450	M	3.72	2.57	2.056
3787	40-40-40	450-450-450	O	4.05	2.80	2.24
3788	50-40-30	450-450-450	O	4.02	2.778	2.222
3789†	60-20-20	450-450-450	O	4.77	4.77	4.77
3791	60-40-20	450-450-450	O	4.05	2.803	2.242
3791.8†	80-30-20	450-450-450	R	4.50	2.985	2.428
3793†	80-40-20	450-450-450	O	4.29	2.968	2.374
3793.3†	80-50-30	450-450-450	S	5.04	3.535	2.745
3794	120-40-40	450-450-450	S	6.45	6.45	6.45
3806.6	10-4-100	475-350-50	E	2.85	2.85	2.85
3816	40-80-10	475-450-450	R	4.59	3.061	2.414
3816.11†	50-40-40	475-475-25	R	5.46	5.46	5.46
3816.12	50-18-40	475-475-25	M	4.44	4.44	4.44
3840	30-30-20	475-475-475	O	4.62	4.62	4.62
3842	40-20-20	475-475-475	O	4.68	4.68	4.68
3935	40-40-100	500-500-200	R	5.91	5.91	5.91
3952	10-10-10	500-500-500	G	3.21	3.21	3.21
3956	30-20-20	500-500-500	M	3.69	2.553	2.042

TYPE TVL QUADRUPLE UNITS

Sprague No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of 1-24	25-49	50-99*
4414	60-40-20-200	150-150-150-10	L	$3.60	$3.60	$3.60
4432	80-40-40-40	150-150-150-25	L	3.66	3.66	3.66
4441	40-40-40-30	150-150-150-150	L	3.27	3.27	3.27
4445	100-80-60-40	150-150-150-150	L	4.14	4.14	4.14
4449	250-200-10-10	175-175-150-150	R	4.68	3.24	2.592
•4449.1	300-200-100-10	175-150-150-150	R	4.35	3.273	2.618
4449.2	300-200-20-20	175-175-150-150	U	4.53	3.13	2.504
•4449.3	250-200-10-5	175-160-150-150	O	3.93	2.978	2.382
4450	200-200-60-30	175-175-175-175	R	4.77	2.903	2.322
4451	200-200-200-30	175-175-175-175	U	5.58	3.40	2.72
•4459	250-200-20-10	165-150-150-150	R	3.81	2.885	2.308
4479.4	240-240-160-5	200-200-200-200	U	5.58	3.34	2.672
•4479.7	250-200-20-10	200-200-200-200	O	4.32	3.258	2.606
4479.8	240-180-160-5	200-200-200-200	U	4.80	3.33	2.664
4479.10	250-200-40-10	200-200-200-200	R	4.71	3.265	2.612
4479.11	250-200-20-10	200-200-200-200	R	4.68	3.235	2.588
4479.14	160-450-60-5	200-200-200-200	U	5.79	3.909	2.952
4541	250-200-10-10	250-250-250-250	S	6.15	3.425	2.74
4542	250-200-40-10	250-250-250-250	S	6.57	3.985	3.021
•4559.8	125-5-120-100	300-200-175-75	O	3.54	2.678	2.142
4564.8	200-100-2-20	300-300-300-15	U	6.42	6.42	6.42
4570.6	200-100-2-20	300-300-300-25	S	6.03	6.03	6.03
4573.6	125-10-20-100	300-300-300-50	O	4.59	4.59	4.59
4576	80-20-20-200	300-300-300-150	R	5.91	5.91	5.91
4578	40-20-10-10	300-300-300-300	L	3.90	3.90	3.90
4579	40-40-20-10	300-300-300-300	L	4.11	4.11	4.11
4580	40-40-30-20	300-300-300-300	L	4.44	4.44	4.44
4587	150-100-10-5	300-300-300-300	R	5.91	5.91	5.91
4589	150-150-30-30	300-300-300-300	U	6.57	6.57	6.57
4599†	100-500-500-200	350-50-25-25	O	3.75	2.593	2.074
4603.7	100-150-5-100	350-200-150-50	O	6.00	3.015	2.359
4603.15†	5-100-20-100	350-200-200-25	L	2.94	2.035	1.628
4605.3†	140-100-20-20	350-300-300-300	S	5.19	5.19	5.19
4605.5	160-60-10-4	350-300-300-300	R	6.03	6.03	6.03
4605.6	40-80-10-10	350-300-300-300	M	4.50	4.50	4.50
•4607.9	100-60-100-100	350-350-150-10	U	6.42	6.42	6.42
•4608.9	100-60-60-40	350-350-200-75	S	5.67	5.67	5.67
4608.11	100-50-100-100	350-350-200-50	R	4.23	2.918	2.334
4608.12†	5-20-100-100	350-350-200-50	L	3.69	2.277	1.807
4609	60-40-60-20	350-350-200-150	M	4.53	4.53	4.53
4609.4	100-60-10-100	350-350-200-150	U	5.10	3.212	2.585
4621.6	40-40-20-20	350-350-350-25	M	4.08	4.08	4.08
4622.3	40-40-40-40	350-350-350-25	M	4.53	4.53	4.53
4622.9	150-100-20-100	350-350-350-25	U	6.90	3.288	2.63
4624.8	150-100-10-60	350-350-350-50	U	6.57	3.788	2.966
4625	90-30-5-100	350-350-350-75	R	4.98	4.98	4.98
4631	70-40-10-50	350-350-350-50	M	4.29	4.29	4.29
4632	100-10-10-20	350-350-350-50	O	4.65	4.65	4.65
4633	100-20-10-20	350-350-350-50	M	4.86	4.86	4.86
4633.8	150-100-10-100	350-350-350-50	S	5.01	3.478	2.782
4634	100-40-30-50	350-350-350-50	S	5.61	5.61	5.61
4635	40-20-20-10	350-350-350-350	L	4.32	4.32	4.32
4635.3†	40-40-40-40	350-350-350-350	S	4.65	2.894	2.29
4635.7	80-60-40-20	350-350-350-350	R	5.07	3.227	2.497
4635.9	100-20-10-5	350-350-350-350	M	4.47	4.47	4.47
4635.15	100-100-50-50	350-350-350-350	S	4.47	3.375	2.70
4635.16	150-100-50-10	350-350-350-350	S	6.30	3.475	2.78
4635.17	120-80-20-10	350-350-350-350	R	6.00	6.00	6.00
4635.22	100-60-60-40	350-350-350-350	S	6.03	6.03	6.03
4635.23†	100-150-20-20	350-350-350-350	U	6.30	3.443	2.754
4650.5	40-100-5-100	400-350-150-50	R	4.98	4.98	4.98
4654	40-80-100-25	400-350-200-50	O	4.77	2.939	2.33
4661.4	40-80-10-100	400-350-350-350	S	5.43	5.43	5.43
4663.3	80-40-100-40	400-400-50-25	O	4.86	3.015	2.394
4663.4	80-40-100-20	400-400-50-25	O	4.65	3.015	2.386
4663.5	100-10-30-20	400-400-50-50	M	4.35	2.742	2.156
4664.8†	80-10-80-100	400-400-250-50	O	4.95	2.525	2.02
4665.6	120-40-20-100	400-400-350-25	S	6.27	6.27	6.27
4666.2	100-10-29-20	400-400-350-50	O	4.65	2.503	2.002
4669	80-40-10-20	400-400-400-25	O	4.98	4.98	4.98
4670	80-40-30-40	400-400-400-25	R	5.49	5.49	5.49
4670.9	80-10-4-100	400-400-400-50	M	4.44	4.44	4.44
4671.2	80-40-10-100	400-400-400-200	R	5.31	2.853	2.282
4672	80-40-30-4	400-400-400-350	O	5.16	5.16	5.16
4674	50-40-30-20	400-400-400-400	M	4.98	4.98	4.98
4681	100-40-10-10	400-400-400-400	S	5.16	5.16	5.16
4683	100-80-10-10	400-400-400-400	R	4.71	3.273	2.618
4683.8	100-80-30-10	400-400-400-400	U	6.18	3.36	2.688
4701.3†	20-160-50-50	450-250-75-50	S	4.44	2.818	2.276
4705.3†	80-2-100-25	450-350-25-25	O	3.75	2.603	2.082
4705.8	40-30-15-50	450-350-300-50	O	4.56	4.56	4.56
4705.9	10-140-100-20	450-350-300-300	S	5.70	3.517	2.789
4714.2†	80-30-20-50	450-450-250-50	R	4.32	2.988	2.39
4714.4†	30-20-160-40	450-450-250-150	S	4.68	3.248	2.598
4714.5†	30-50-100-250	450-450-250-50	U	6.90	6.90	6.90
4714.6†	80-50-20-50	450-450-250-50	S	4.83	3.345	2.676
4714.10†	30-20-160-10	450-450-250-250	S	4.95	3.177	2.538
4720	40-40-30-30	450-450-350-350	S	5.43	5.43	5.43
4724.2	20-20-20-20	450-450-450-25	L	3.36	2.333	1.866
4734	40-30-10-20	450-450-450-25	O	3.69	2.545	2.036
4736	40-40-10-20	450-450-450-25	O	4.86	4.86	4.86
4737	40-40-20-20	450-450-450-25	R	5.16	5.16	5.16
4739	40-40-40-40	450-450-450-25	O	4.83	2.977	2.386
4739.6	80-40-40-40	450-450-450-25	S	6.42	6.42	6.42
4739.9†	80-50-10-20	450-450-450-25	S	4.50	3.123	2.498
4754†	20-30-80-40	450-450-450-150	S	4.71	3.25	2.60
4757.12†	30-20-10-20	450-450-450-350	M	4.47	4.47	4.47
4758	40-10-10-40	450-450-450-350	M	3.45	2.388	1.91
4760†	10-10-10-10	450-450-450-450	L	2.91	2.193	1.754
4761	20-10-10-10	450-450-450-450	L	4.05	4.05	4.05
4763†	20-20-20-20	450-450-450-450	M	4.05	2.591	2.083
4769.4	30-30-20-20	450-450-450-450	O	5.01	3.783	3.026
4773	40-40-20-20	450-450-450-450	M	4.71	3.015	2.331
4774	40-40-30-30	450-450-450-450	S	5.25	3.318	2.579
4775	40-40-40-40	450-450-450-450	R	5.55	3.50	2.745
4778	60-20-20-20	450-450-450-450	O	5.55	5.55	5.55
4784.1†	80-40-20-20	450-450-450-450	R	5.10	3.545	2.814
4804.8	30-10-4-100	475-400-350-25	L	4.32	4.32	4.32
4805.2	10-80-40-100	475-400-400-50	S	4.56	3.163	2.53
4818.5†	100-4-4-200	475-475-475-25	S	4.80	3.32	2.656
4820.5†	80-80-4-4	475-475-450-450	U	5.85	3.986	3.159
4832	20-20-10-10	475-475-475-475	M	3.54	2.443	1.954
4834	20-20-20-20	475-475-475-475	M	4.26	2.712	2.193
4840	40-20-10-10	475-475-475-475	M	4.26	2.712	2.193
4940	10-10-10-10	500-500-500-500	L	3.57	2.47	1.976

*SIZE

Key	O.D. x L.	Key	O.D. x L.	Key	O .D. x L.	Key	O.D. x L.
A	¾" x 2"	E	1" x 2"	L	1⅜" x 2"	S	1⅜" x 4"
B	¾" x 2½"	G	1" x 2½"	M	1⅜" x 2½"	U	1⅜" x 4½"
C	1" x 1½"	H	1" x 3"	O	1⅜" x 3"		
D	1" x 1¾"	I	1" x 3½"	R	1⅜" x 3½"		

†Exact replacement for color TV. •Printed circuit version; add prefix **PCL-**. ***Larger quantity prices on request.**

TYPE 418P ORANGE DROP® FILMITE® "E" CAPACITORS

Ideal for TV, radio and allied commercial equipment. Type 418P combines excellent electrical characteristics, compactness and low cost. "Hockeystick" crimped radial lead design for easy insertion on PC wiring boards. Wound with polyester film and thin gage foil; protected against moisture by wax-free conformal coating of epoxy. Designed for operation at temperatures at 85° C and may be operated to 125° C with voltage derating. Capacitance tolerance, ±10%.

Sprague Number 418P-	µF	WV DC	Case Size Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-249
33391JD3	.033	100	.400 x .700	$0.24	$0.142	$0.110	$0.088
39391JD3	.039	100	.400 x .700	.27	.153	.119	.095
47391JD3	.047	100	.400 x .700	.27	.153	.119	.095
56391JD3	.056	100	.400 x .700	.27	.162	.126	.101
68391JD3	.068	100	.400 x .700	.27	.162	.126	.101
82391KD3	.082	100	.400 x .900	.30	.178	.138	.111
10491KD3	.10	100	.400 x .900	.30	.178	.138	.111
12491KD3	.12	100	.450 x .900	.33	.198	.154	.123
15491KD3	.15	100	.450 x .900	.33	.198	.154	.123
18491LD3	.18	100	.450 x 1.200	.39	.23	.179	.143
22491LD3	.22	100	.450 x 1.200	.39	.23	.179	.143
27491LD3	.27	100	.500 x 1.200	.42	.254	.198	.158
33491LD3	.33	100	.500 x 1.200	.42	.254	.198	.158
39491MD3	.39	100	.550 x 1.600	.57	.349	.271	.217
47491MD3	.47	100	.550 x 1.600	.57	.349	.271	.217
56491MD3	.56	100	.650 x 1.600	.66	.396	.308	.246
68491MD3	.68	100	.650 x 1.600	.66	.396	.308	.246
82491MD3	.82	100	.700 x 1.600	.90	.558	.434	.347
10591MD3	1.0	100	.700 x 1.600	.90	.558	.434	.347
18392JD3	.018	200	.400 x .700	.24	.142	.11	.088
22392JD3	.022	200	.400 x .700	.24	.142	.11	.088
27392JD3	.027	200	.400 x .700	.27	.153	.119	.095
33392KD3	.033	200	.400 x .900	.27	.153	.119	.095
39392KD3	.039	200	.400 x .900	.27	.169	.131	.105
47392KD3	.047	200	.400 x .900	.27	.169	.131	.105
56392LD3	.056	200	.400 x 1.200	.30	.178	.138	.111
68392LD3	.068	200	.400 x 1.200	.30	.178	.138	.111
82392LD3	.082	200	.450 x 1.200	.33	.198	.154	.123
10492LD3	.10	200	.450 x 1.200	.33	.198	.154	.123
12492LD3	.12	200	.500 x 1.200	.39	.23	.179	.143
15492LD3	.15	200	.500 x 1.200	.39	.23	.179	.143
18492LD3	.18	200	.550 x 1.200	.42	.254	.198	.158
22492LD3	.22	200	.550 x 1.200	.42	.254	.198	.158
27492MD3	.27	200	.500 x 1.600	.54	.329	.256	.204
33492MD3	.33	200	.500 x 1.600	.54	.329	.256	.204
39492MD3	.39	200	.550 x 1.600	.66	.396	.308	.246
47492MD3	.47	200	.550 x 1.600	.66	.396	.308	.246
82294JD3	.0082	400	.400 x .700	.21	.131	.102	.081
10394JD3	.010	400	.400 x .700	.21	.131	.102	.081
12394JD3	.012	400	.400 x .700	.24	.142	.11	.088
15394JD3	.015	400	.400 x .700	.24	.142	.11	.088
18394KD3	.018	400	.400 x .900	.27	.153	.119	.095
22394KD3	.022	400	.400 x .900	.27	.153	.119	.095
27394KD3	.027	400	.400 x .900	.27	.169	.131	.105

Sprague Number 418P-	µF	WV DC	Case Size Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-249
33394KD3	.033	400	.400 x .900	$0.27	$0.169	$0.131	$0.105
39394LD3	.039	400	.450 x 1.200	.30	.182	.142	.113
47394LD3	.047	400	.450 x 1.200	.30	.182	.142	.113
56394LD3	.056	400	.500 x 1.200	.33	.198	.154	.123
68394LD3	.068	400	.500 x 1.200	.33	.198	.154	.123
82394LD3	.082	400	.550 x 1.200	.39	.23	.179	.143
10494LD3	.10	400	.550 x 1.200	.39	.23	.179	.143
12494LD3	.12	400	.600 x 1.200	.42	.254	.198	.158
15494LD3	.15	400	.600 x 1.200	.42	.254	.198	.158
18494MD3	.18	400	.600 x 1.600	.57	.349	.271	.217
22494MD3	.22	400	.600 x 1.600	.57	.349	.271	.217
27494MD3	.27	400	.650 x 1.600	.66	.396	.308	.246
33494MD3	.33	400	.650 x 1.600	.66	.396	.308	.246
39494MD3	.39	400	.720 x 1.600	.90	.558	.434	.347
47494MD3	.47	400	.720 x 1.600	.90	.558	.434	.347
10296JD3	.0010	600	.400 x .700	.21	.131	.102	.081
12296JD3	.0012	600	.400 x .700	.21	.131	.102	.081
15296JD3	.0015	600	.400 x .700	.21	.131	.102	.081
18296JD3	.0018	600	.400 x .700	.21	.131	.102	.081
22296JD3	.0022	600	.400 x .700	.21	.131	.102	.081
27296JD3	.0027	600	.400 x .700	.21	.131	.102	.081
33296JD3	.0033	600	.400 x .700	.21	.131	.102	.081
39296JD3	.0039	600	.400 x .700	.24	.142	.11	.088
47296JD3	.0047	600	.400 x .700	.24	.142	.11	.088
56296JD3	.0056	600	.400 x .700	.24	.142	.11	.088
68296KD3	.0068	600	.400 x .700	.24	.142	.11	.088
82296KD3	.0082	600	.400 x .900	.27	.153	.119	.095
10396KD3	.010	600	.400 x .900	.27	.153	.119	.095
12396KD3	.012	600	.400 x .900	.27	.162	.126	.101
15396KD3	.015	600	.400 x .900	.27	.162	.126	.101
18396KD3	.018	600	.450 x .900	.30	.178	.138	.111
22396KD3	.022	600	.450 x .900	.30	.178	.138	.111
27396LD3	.027	600	.450 x 1.200	.33	.198	.154	.123
33396LD3	.033	600	.450 x 1.200	.33	.198	.154	.123
39396LD3	.039	600	.550 x 1.200	.39	.23	.179	.143
47396LD3	.047	600	.550 x 1.200	.39	.23	.179	.143
56396LD3	.056	600	.600 x 1.200	.42	.254	.198	.158
68396LD3	.068	600	.600 x 1.200	.42	.254	.198	.158
82396LD3	.082	600	.650 x 1.200	.45	.277	.215	.172
10496LD3	.10	600	.650 x 1.200	.45	.277	.215	.172
12496MD3	.12	600	.700 x 1.600	.66	.396	.308	.246
15496MD3	.15	600	.700 x 1.600	.66	.396	.308	.246
18496MD3	.18	600	.800 x 1.600	.90	.558	.434	.347
22496MD3	.22	600	.800 x 1.600	.90	.558	.434	.347

*1-24, Kleer-Pak; all others Bulk-Pack. 250-499, 500-999 Bulk-Pack prices on request.

PCL PRINT-LOK® ELECTROLYTICS

Universal replacement capacitors designed for printed circuit mounting. Will also fit standard twist base mountings without adapters. Withstand high surge voltages, high ripple currents and temperatures to 85° C (185° F). Hermetically sealed in aluminum cans. Ideal for TV replacement applications.

TYPE PCL SINGLE UNITS

Sprague No.	Cap., µF	WVDC	†	Net Each, Lots of 1-24	25-49	50-99
PCL1105	500	3	B	$2.73	$2.73	$2.73
PCL1110	750	6	A	2.76	2.76	2.76
PCL1130	2500	10	G	3.09	3.09	3.09
PCL1162	400	15	B	2.01	2.01	2.01
PCL1219	400	25	E	2.13	2.13	2.13
PCL1241	1500	25	I	4.20	4.20	4.20
PCL1318	100	50	A	2.04	2.04	2.04
PCL1339	1250	50	N	2.25	1.688	1.35
PCL1428	140	150	J	2.73	2.73	2.73
PCL1440	375	165	Q	4.62	4.62	4.62
PCL1448	120	175	G	1.77	1.33	1.064
PCL1468	100	200	M	3.03	3.03	3.03
PCL1473	160	200	O	2.49	1.873	1.498
PCL1704.1	8	450	B	1.95	1.95	1.95
PCL1714	20	450	E	2.52	2.52	2.52
PCL2161.5	500-500	16-8	C	2.85	2.85	2.85

TYPE PCL DUAL UNITS

Sprague No.	Cap., µF	WVDC	†	Net Each, Lots of 1-24	25-49	50-99
PCL2170	250-250	16-16	E	$2.43	$2.43	$2.43
PCL2173	400-200	16-16	E	2.52	2.52	2.52
PCL2174.1	400-300	16-16	C	2.49	2.49	2.49
PCL2175	500-100	16-16	E	2.58	2.58	2.58
PCL2177	500-500	16-16	C	2.94	2.94	2.94
PCL2177.5	600-400	16-16	E	2.61	2.61	2.61
PCL2178	700-200	16-16	E	2.85	2.85	2.85
PCL2179	700-300	16-16	E	3.09	3.09	3.09
PCL2180	800-250	16-16	E	3.00	3.00	3.00
PCL2181	800-300	16-16	C	2.91	2.91	2.91
PCL2184	1000-200	16-16	E	3.15	3.15	3.15
PCL2185.1	1000-600	16-16	D	2.82	2.82	2.82
PCL2190.5	250-250	20-20	C	2.31	2.31	2.31
PCL2190.8	500-100	20-20	E	2.37	2.37	2.37

†PCL SIZES

Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.
A	¾" x 1½"	F	1" x 2¼"	K	1" x 4"	P	1⅜" x 3"
B	¾" x 2"	G	1" x 2½"	L	1⅜" x 1¾"	Q	1⅜" x 3½"
C	1" x 1½"	H	1" x 2⅞"	M	1⅜" x 2"	R	1⅜" x 4"
D	1" x 1¾"	I	1" x 3"	N	1⅜" x 2½"	S	1⅜" x 4½"
E	1" x 2"	J	1" x 3½"	O	1⅜" x 2⅞"		

CONTINUED ON FOLLOWING PAGE

TYPE PCL DUAL UNITS (CONTINUED)

Sprag. No. PCL-	Cap., µF	WVDC	†	Net Each, Lots of 1-24	25-49	50-99
2192	800-250	20-20	G	$2.64	$2.64	$2.64
2232	250-250	25-25	G	2.55	2.55	2.55
2232.5	400-200	25-25	E	2.43	2.43	2.43
2241.1	1000-1000	25-25	N	4.02	4.02	4.02
2241.6	1500-1500	25-25	P	4.50	4.50	4.50
2410.5	60-200	150-10	E	2.37	2.37	2.37
2432	50-30	150-150	E	1.83	1.365	1.092
2435.1	50-50	150-150	C	2.88	2.88	2.88
2439	70-30	150-150	E	2.85	2.85	2.85
2439.2	75-30	150-150	E	2.88	2.88	2.88
2441	80-30	150-150	E	3.00	3.00	3.00
2442	80-40	150-150	E	2.91	2.91	2.91
2442.1	80-50	150-150	G	3.00	3.00	3.00
2442.10	100-70	150-150	H	3.15	3.15	3.15
2442.11	100-50	150-150	E	3.12	3.12	3.12
2443.1	120-120	150-150	I	2.79	2.79	2.79
2443.4	120-50	150-150	G	2.52	2.52	2.52
2444	200-5	150-150	N	$3.69	$3.69	$3.69
2447.2	200-200	150-150	N	3.72	3.72	3.72
2448	120-100	175-75	J	3.51	3.51	3.51
2459.5	50-100	200-150	M	3.03	3.03	3.03
2460.4	40-20	200-200	C	2.28	2.28	2.28
2460.8	50-50	200-200	E	2.91	2.91	2.91
2471	200-5	200-200	M	3.42	3.42	3.42
2515.1	20-20	250-250	C	2.25	2.25	2.25
2553	2-20	300-25	D	1.95	1.95	1.95
2556.8	10-10	300-50	E	2.04	2.04	2.04
2560.3	150-100	300-150	Q	4.56	4.56	4.56
2565	10-10	300-300	M	2.55	2.55	2.55
2565.1	10-10	300-300	E	2.19	2.19	2.19
2657.15	100-40	400-350	P	4.56	4.56	4.56
2738.9	80-20	450-350	P	4.26	4.26	4.26
2739	2-20	450-400	E	2.31	2.31	2.31
2764.2	40-40	450-450	N	4.29	4.29	4.29
2937.1	30-30	500-500	N	4.38	4.38	4.38

*Use prefix PCLP.

TYPE PCL TRIPLE UNITS

Sprag. No. PCL-	Cap., µF	WVDC	†	Net Each, Lots of 1-24	25-49	50-99
3016.3	500-400-700	8-8-3	D	$3.42	$3.42	$3.42
3016.4	1000-500-200	8-8-6	D	3.12	3.12	3.12
3018	500-500-250	8-8-8	C	3.18	3.18	3.18
3020.2	100-400-400	16-16-3	C	2.61	2.61	2.61
3020.3	500-450-100	16-16-6	E	3.33	3.33	3.33
3020.5	400-300-100	16-16-8	D	2.94	2.94	2.94
3020.7	400-100-600	16-16-3	C	2.79	2.79	2.79
3021.1	850-400-2.2	16-16-11.5	F	3.45	3.45	3.45
3021.2	850-400-4	16-16-11.5	E	3.42	3.42	3.42
3021.4	850-400-12	16-16-11.5	E	3.45	3.45	3.45
3021.8	1000-500-4	16-16-11.5	E	3.15	3.15	3.15
3021.9	1000-500-15	16-16-11.5	G	3.15	3.15	3.15
3022	250-250-50	16-16-16	E	2.52	2.52	2.52
3025.1	400-100-100	16-16-16	E	2.55	2.55	2.55
3025.2	450-100-50	16-16-16	E	2.76	2.76	2.76
3025.3	400-300-100	16-16-16	D	2.67	2.67	2.67
3025.5	450-450-25	16-16-16	C	2.73	2.73	2.73
3026.2	500-300-300	16-16-16	C	2.85	2.85	2.85
3026.3	450-100-100	16-16-16	G	2.82	2.82	2.82
3026.4	600-170-120	16-16-16	E	3.60	3.60	3.60
3026.5	500-150-50	16-16-16	E	2.88	2.88	2.88
3026.6	500-250-250	16-16-16	G	3.24	3.24	3.24
3026.9	1000-200-50	16-16-16	E	3.15	3.15	3.15
3026.10	600-300-100	16-16-16	E	2.73	2.73	2.73
3026.11	500-500-100	16-16-16	C	3.12	3.12	3.12
3026.12	500-450-140	16-16-16	D	3.21	3.21	3.21
3026.17	500-500-25	16-16-16	D	2.79	2.79	2.79
3027.4	700-200-100	16-16-16	G	3.18	3.18	3.18
3027.5	700-200-100	16-16-16	C	3.18	3.18	3.18
3028	1400-400-200	16-16-16	G	4.23	4.23	4.23
3307	1000-1000-250	50-25-25	P	6.84	6.84	6.84
3361	100-100-100	75-75-75	L	3.36	3.36	3.36
3411	70-30-100	150-150-10	E	2.67	2.67	2.67
3414.3	80-60-250	150-150-10	G	3.03	3.03	3.03
3414.4	80-60-400	150-150-10	I	3.18	3.18	3.18
3414.5	90-40-400	150-150-10	I	3.57	3.57	3.57
3415.5	80-20-20	150-150-25	G	3.15	3.15	3.15
3422	40-20-20	150-150-25	E	2.43	2.43	2.43
3431.1	70-30-20	150-150-25	E	3.57	3.57	3.57
3432.14	80-40-50	150-150-50	I	2.55	2.55	2.55
3435.1	30-30-30	150-150-150	E	3.24	3.24	3.24
3439	40-40-20	150-150-150	E	$2.61	$2.61	$2.61
3440.2	60-40-40	150-150-150	E	3.36	3.36	3.36
3440.3	50-40-40	150-150-150	F	2.73	2.73	2.73
3440.5	50-30-20	150-150-150	E	2.82	2.82	2.82
3441.2	50-40-30	150-150-150	G	2.70	2.70	2.70
3443.3	70-15-15	150-150-150	E	2.61	2.61	2.61
3443.5	60-60-40	150-150-150	M	3.60	3.60	3.60
3443.12	70-40-20	150-150-150	G	3.24	3.24	3.24
3444.6	50-50-80	150-150-150	G	3.27	3.27	3.27
3444.8	80-60-20	150-150-150	I	2.67	2.67	2.67
3445.5	80-80-60	150-150-150	I	3.63	3.63	3.63
3447.2	100-80-40	150-150-150	I	3.90	3.90	3.90
3447.4	100-100-50	150-150-150	M	3.72	3.72	3.72
3447.5	120-50-30	150-150-150	I	3.57	3.57	3.57
3449.5	150-100-40	150-150-150	K	3.54	3.54	3.54
3449.6	150-100-20	150-150-150	I	3.69	3.69	3.69
3454.5	100-80-40	160-160-150	I	3.63	3.63	3.63
3454.6	250-200-30	165-150-150	N	3.51	2.645	2.116
3454.7	100-80-60	160-160-160	N	4.26	4.26	4.26
3454.10	100-80-40	175-175-175	I	3.75	3.75	3.75
3460.5	100-50-60	200-150-10	M	3.51	3.51	3.51
3489	150-100-60	200-200-200	N	4.32	4.32	4.32
3554	10-10-20	300-50-25	E	2.31	2.31	2.31
3560.8	150-60-200	300-200-150	R	5.70	5.70	5.70
3560.16	10-20-10	300-150-150	C	2.34	2.34	2.34
3586	150-100-30	300-300-300	R	5.73	5.73	5.73
3606.5	125-5-100	350-150-10	Q	4.53	4.53	4.53
3617.6	20-20-20	300-300-25	E	2.55	2.55	2.55
3625.4	125-15-5	350-300-300	P	4.59	4.59	4.59
3626.5	20-20-1000	350-350-15	N	3.72	3.72	3.72
3637.2	10-4-20	350-350-50	M	3.33	3.33	3.33
3639.18	40-40-40	350-350-350	N	4.05	4.05	4.05
3639.20	100-50-50	350-350-350	N	5.22	5.22	5.22
3639.24	10-10-60	350-350-300	M	3.39	3.39	3.39
3639.25	20-20-20	350-350-350	G	3.60	3.60	3.60
3672.5	40-30-20	400-350-300	N	3.99	3.99	3.99
3691.6	30-30-30	400-400-400	K	3.87	3.87	3.87
3757.10	40-30-8	450-450-150	N	4.11	4.11	4.11
3904	40-40-60	500-200-50	N	3.93	3.93	3.93
3908.10	40-40-20	500-350-250	P	4.20	4.20	4.20

TYPE PCL QUADRUPLE UNITS

Sprag. No. PCL-	Cap., µF	WVDC	†	Net Each, Lots of 1-24	25-49	50-99
4209	2000-150-150-100	25-20-20-20	M	$4.44	$4.44	$4.44
4285	500-250-250-200	35-35-35-35	M	4.14	4.14	4.14
4290	500-500-100-100	25-25-25-25	M	4.77	4.77	4.77
4336	500-250-250-250	50-50-25-25	N	3.99	3.99	3.99
4370	80-150-150-150	150-20-20-20	M	3.39	3.39	3.39
4411.9	150-150-25-25	150-150-25-25	N	5.07	5.07	5.07
4414.4	290-30-10-100	150-150-150-10	Q	4.53	4.53	4.53
4424.6	50-40-10-50	150-150-150-25	M	3.33	3.33	3.33
4436.5	100-10-40-50	150-150-150-25	M	3.57	3.57	3.57
4438.2	150-150-150-50	150-150-150-25	N	4.98	4.98	4.98
4443.5	60-60-40-10	150-150-150-150	M	3.57	3.57	3.57
4449.1	300-200-100-10	175-150-150-150	R	4.35	3.273	2.618
4449.3	250-200-10-5	175-160-150-150	P	3.39	2.978	2.382
4457	300-300-100-100	150-150-150-150	S	7.41	7.41	7.41
4459	250-200-20-10	165-150-150-150	Q	3.81	2.885	2.308
4465	150-80-40-100	200-150-25-25	M	4.35	4.35	4.35
4479.7	250-200-20-10	200-200-200-200	M	4.32	3.258	2.606
4559.8	125-5-120-100	300-200-175-75	R	3.54	2.678	2.142
4574.9	200-20-5-100	300-300-300-75	Q	5.31	5.31	5.31
4575.1	20-20-20-100	300-300-300-150	M	3.63	3.63	3.63
4595	200-50-20-2	320-300-300-300	S	6.33	6.33	6.33
4603.14	100-150-5-100	350-200-150-50	Q	$5.55	$5.55	$5.55
4605.11	20-4-20-100	350-350-25-6	M	3.84	3.84	3.84
4607.9	100-60-100-100	350-350-150-10	S	6.42	6.42	6.42
4607.15	10-4-100-20	350-350-50-50	M	3.21	3.21	3.21
4608.9	100-60-60-40	350-350-200-75	R	5.67	5.67	5.67
4611.2	100-60-40-40	350-350-300-75	R	5.52	5.52	5.52
4627	40-20-10-100	350-350-350-50	N	4.17	4.17	4.17
4650.6	40-100-5-100	400-350-150-50	Q	5.01	5.01	5.01
4708.5	40-30-20-20	400-350-350-350	N	4.53	4.53	4.53
4714.8	30-20-160-40	450-450-250-150	R	6.06	6.06	6.06
4785.1	100-30-10-10	450-450-450-450	R	6.03	6.03	6.03
4785.4	100-40-30-10	450-450-450-450	R	7.02	7.02	7.02

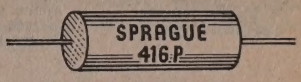
†SIZE

Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.
A	¾" x 1½"	F	1" x 2¼"	K	1" x 4"	P	1⅛" x 3"
B	¾" x 2"	G	1" x 2½"	L	1⅛" x 1¾"	Q	1⅛" x 3½"
C	1" x 1½"	H	1" x 2⅞"	M	1⅛" x 2"	R	1⅛" x 4"
D	1" x 1¾"	I	1" x 3"	N	1⅛" x 2½"	S	1⅛" x 4½"
E	1" x 2"	J	1" x 3½"	O	1⅛" x 2⅞"		

SPRAGUE Filmite® "E" Capacitors

TYPE 416P YELLOW JACKET® FILMITE® "E" CAPACITORS

Economically priced Yellow Jacket® capacitors are designed for all kinds of commercial applications. Extended foil construction. Protected against moisture by outer wrap of polyester film and plastic resin end seals. Operating temperature rated for −55° C to +85° C, can also operate to +105° C with voltage derating. High insulation resistance. Lightweight and minimum size. Made by Sprague World Trade Corp. in Taiwan to U.S. quality standards.



50 WVDC

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
1239R5	0.012	.190 x .531	$0.39	$0.242	$0.189	$0.158	$0.131
1539R5	0.015	.190 x .531	.39	.242	.189	.158	.131
1839R5	0.018	.200 x .594	.39	.242	.189	.158	.131
2239R5	0.022	.200 x .594	.39	.242	.189	.158	.131
2739R5	0.027	.210 x .656	.39	.242	.189	.158	.131
3339R5	0.033	.210 x .656	.39	.242	.189	.158	.131
5639R5	0.056	.250 x .718	.39	.242	.189	.158	.131
6839R5	0.068	.250 x .718	.39	.242	.189	.158	.131
8239R5	0.082	.290 x .750	.39	.242	.189	.158	.131
1049R5	0.1	.290 x .750	.39	.242	.189	.158	.131
1249R5	0.12	.315 x .812	.42	.258	.202	.168	.14
1549R5	0.15	.315 x .812	.42	.258	.202	.168	.14
1849R5	0.18	.315 x 1.062	.45	.271	.212	.177	.148
2249R5	0.22	.315 x 1.062	.45	.276	.216	.18	.15
2749R5	0.27	.375 x 1.062	.48	.299	.234	.195	.163
3349R5	0.33	.375 x 1.062	.54	.334	.261	.218	.181
3949R5	0.39	.430 x 1.062	.60	.368	.288	.24	.20
4749R5	0.47	.430 x 1.062	.63	.403	.315	.263	.219
5649R5	0.56	.450 x 1.375	.78	.483	.378	.315	.263
6849R5	0.68	.450 x 1.375	.81	.506	.396	.33	.275
8249R5	0.82	.500 x 1.375	.96	.605	.473	.395	.329
1059R5	1.0	.500 x 1.375	1.08	.688	.538	.449	.374

100 WVDC

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
56291	0.0056	.190 x .450	$0.33	$0.196	$0.153	$0.128	$0.106
68291	0.0068	.190 x .450	.33	.196	.153	.128	.106
82291	0.0082	.190 x .450	.33	.196	.153	.128	.106
10391	0.01	.190 x .450	.33	.196	.153	.128	.106
27391	0.027	.190 x .718	.33	.196	.153	.128	.106
33391	0.033	.190 x .718	.33	.196	.153	.128	.106
39391	0.039	.215 x .718	.33	.196	.153	.128	.106
47391	0.047	.215 x .718	.33	.205	.16	.134	.111
56391	0.056	.215 x .844	.36	.214	.167	.14	.116
68391	0.068	.215 x .844	.36	.221	.173	.144	.12
82391	0.082	.245 x .844	.36	.228	.178	.149	.124
10491	0.1	.245 x .844	.39	.242	.189	.158	.131
12491	0.12	.285 x .844	.42	.258	.202	.168	.14
15491	0.15	.285 x .844	.42	.265	.207	.173	.144
18491	0.18	.290 x 1.250	.45	.271	.212	.177	.148
22491	0.22	.290 x 1.250	.45	.278	.218	.182	.151
27491	0.27	.325 x 1.250	.45	.288	.225	.188	.156
33491	0.33	.325 x 1.250	.51	.311	.243	.203	.169
39491	0.39	.380 x 1.250	.54	.334	.261	.218	.181
47491	0.47	.380 x 1.250	.60	.368	.288	.24	.20
56491	0.56	.455 x 1.562	.69	.437	.342	.285	.238
68491	0.68	.455 x 1.562	.72	.46	.36	.30	.25
82491	0.82	.535 x 1.562	.87	.552	.432	.36	.30
10591	1.0	.535 x 1.562	.99	.626	.49	.408	.34

200 WVDC

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
10292	0.001	.190 x .450	$0.33	$0.196	$0.153	$0.128	$0.106
12292	0.0012	.190 x .450	.33	.196	.153	.128	.106
15292	0.0015	.190 x .450	.33	.196	.153	.128	.106
18292	0.0018	.190 x .450	.33	.196	.153	.128	.106
22292	0.0022	.190 x .450	.33	.196	.153	.128	.106
27292	0.0027	.190 x .450	.33	.196	.153	.128	.106
33292	0.0033	.190 x .450	.33	.196	.153	.128	.106
39292	0.0039	.190 x .450	.33	.196	.153	.128	.106
47292	0.0047	.190 x .450	.33	.196	.153	.128	.106
56292	0.0056	.190 x .718	.33	.196	.153	.128	.106
68292	0.0068	.190 x .718	.33	.196	.153	.128	.106
82292	0.0082	.190 x .718	.33	.196	.153	.128	.106
10392	0.01	.190 x .718	.33	.196	.153	.128	.106
12392	0.012	.190 x .718	.33	.196	.153	.128	.106
15392	0.015	.190 x .718	.33	.196	.153	.128	.106
18392	0.018	.190 x .718	.33	.196	.153	.128	.106
22392	0.022	.190 x .718	.33	.196	.153	.128	.106
27392	0.027	.190 x .844	.33	.196	.153	.128	.106
33392	0.033	.190 x .844	.33	.196	.153	.128	.106
39392	0.039	.210 x .844	.33	.20	.157	.131	.109
47392	0.047	.210 x .844	.33	.205	.16	.134	.111
56392	0.056	.240 x .844	.36	.216	.169	.141	.118
68392	0.068	.240 x .844	.36	.223	.175	.46	.121
82392	0.082	.275 x .969	.39	.244	.191	.159	.133

200 WVDC (CONT'D)

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
10492	0.1	.275 x .969	$0.42	$0.262	$0.205	$0.171	$0.143
12492	0.12	.345 x 1.000	.45	.269	.211	.176	.146
15492	0.15	.345 x 1.000	.45	.278	.218	.182	.151
18492	0.18	.355 x 1.250	.45	.288	.225	.188	.156
22492	0.22	.355 x 1.250	.48	.294	.23	.192	.16
27492	0.27	.425 x 1.250	.51	.315	.247	.206	.171
33492	0.33	.425 x 1.250	.54	.334	.261	.218	.181
39492	0.39	.440 x 1.562	.60	.368	.288	.24	.20
47492	0.47	.440 x 1.562	.63	.403	.315	.263	.219
56492	0.56	.610 x 1.750	.69	.437	.342	.285	.238
68492	0.68	.610 x 1.750	.78	.483	.378	.315	.263
82492	0.82	.710 x 1.875	.90	.575	.45	.375	.313
10592	1.0	.710 x 1.875	1.05	.656	.513	.428	.356

400 WVDC

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
27294	0.0027	.190 x .718	$0.36	$0.223	$0.175	$0.146	$0.121
33294	0.0033	.190 x .718	.36	.223	.175	.146	.121
39294	0.0039	.190 x .718	.36	.223	.175	.146	.121
47294	0.0047	.190 x .718	.36	.223	.175	.146	.121
56294	0.0056	.200 x .718	.36	.223	.175	.146	.121
68294	0.0068	.200 x .718	.36	.223	.175	.146	.121
82294	0.0082	.210 x .844	.36	.223	.175	.146	.121
10394	0.01	.210 x .844	.36	.223	.175	.146	.121
12394	0.012	.230 x .844	.36	.223	.175	.146	.121
15394	0.015	.230 x .844	.36	.223	.175	.146	.121
18394	0.018	.265 x .844	.36	.223	.175	.146	.121
22394	0.022	.265 x .844	.36	.223	.175	.146	.121
27394	0.027	.315 x .875	.36	.223	.175	.146	.121
33394	0.033	.315 x .875	.36	.223	.175	.146	.121
39394	0.039	.325 x 1.000	.36	.228	.178	.149	.124
47394	0.047	.325 x 1.000	.39	.232	.182	.152	.126
56394	0.056	.340 x 1.250	.39	.239	.187	.156	.13
68394	0.068	.340 x 1.250	.39	.248	.194	.162	.135
82394	0.082	.400 x 1.250	.42	.255	.20	.167	.139
10494	0.1	.400 x 1.250	.42	.265	.207	.173	.144
12494	0.12	.405 x 1.562	.45	.276	.216	.18	.15
15494	0.15	.405 x 1.562	.48	.294	.23	.192	.16
18494	0.18	.480 x 1.562	.51	.311	.243	.203	.169
22494	0.22	.480 x 1.562	.66	.414	.324	.27	.225
27494	0.27	.650 x 1.750	.81	.506	.396	.33	.275
33494	0.33	.650 x 1.750	.99	.621	.486	.405	.338
39494	0.39	.725 x 1.937	1.14	.713	.558	.465	.388
47494	0.47	.725 x 1.937	1.23	.782	.612	.51	.425

600 WVDC

Sprague Number 416P-	μF	Case Size, Inches Dia. x Lgth.	Net Each, Lots of* 1-24	25-49	50-99	100-499	500-999
10296	0.001	.190 x .718	$0.42	$0.255	$0.20	$0.167	$0.139
12296	0.0012	.190 x .718	.42	.255	.20	.167	.139
15296	0.0015	.190 x .718	.42	.255	.20	.167	.139
18296	0.0018	.190 x .718	.42	.255	.20	.167	.139
22296	0.0022	.190 x .718	.42	.255	.20	.167	.139
27296	0.0027	.205 x .718	.42	.255	.20	.167	.139
33296	0.0033	.205 x .718	.42	.255	.20	.167	.139
39296	0.0039	.235 x .718	.42	.255	.20	.167	.139
47296	0.0047	.235 x .718	.42	.255	.20	.167	.139
56296	0.0056	.240 x .844	.42	.255	.20	.167	.139
68296	0.0068	.240 x .844	.42	.255	.20	.167	.139
82296	0.0082	.270 x .844	.42	.255	.20	.167	.139
10396	0.01	.270 x .844	.42	.255	.20	.167	.139
12396	0.012	.315 x .875	.42	.255	.20	.167	.139
15396	0.015	.315 x .875	.42	.255	.20	.167	.139
18396	0.018	.375 x .875	.42	.255	.20	.167	.139
22396	0.022	.375 x .875	.42	.255	.20	.167	.139
27396	0.027	.395 x 1.000	.42	.255	.20	.167	.139
33396	0.033	.395 x 1.000	.42	.255	.20	.167	.139
39396	0.039	.400 x 1.250	.42	.255	.20	.167	.139
47396	0.047	.400 x 1.250	.42	.265	.207	.173	.144
56396	0.056	.455 x 1.250	.45	.276	.216	.18	.15
68396	0.068	.455 x 1.250	.45	.288	.225	.188	.156
82396	0.082	.470 x 1.562	.51	.317	.248	.207	.173
10496	0.1	.470 x 1.562	.42	.265	.207	.173	.144
12496	0.12	.545 x 1.562	.63	.386	.302	.252	.21
15496	0.15	.545 x 1.562	.66	.414	.324	.27	.225
18496	0.18	.590 x 1.937	.72	.46	.36	.30	.25
22496	0.22	.590 x 1.937	.78	.495	.387	.323	.269
27496	0.27	.800 x 1.937	1.05	.667	.522	.435	.363
33496	0.33	.800 x 1.937	1.35	.851	.666	.555	.463
39496	0.39	.890 x 2.125	1.50	.955	.747	.623	.519
47496	0.47	.890 x 2.125	1.80	1.139	.891	.743	.619

★1000 UP PRICES ON REQUEST

SPRAGUE MIL Paper Capacitors

SUBMINIATURE PAPER CAPACITORS TO MIL-C-25C

Impregnated with Vitamin Q for performance exceeding MIL-C-25C requirements. Positive hermetic closure of metal case assured by glass-to-metal solder-seal terminals. CP05/CP09 have insulating sleeve; CP04/CP08 have bare metal case. **Construction:** CP04/CP05, inserted tab type for limited space applications; CP08/CP09, extended foil, non-inductive section type. **Tolerance:** ±10%. **Temperature Range:** Characteristic K (−55° C to +125° C).
Note: For Vibration Grade 1, change last digit in MIL Type No. from 3 to **1.**

TYPE CP05—WITH INSULATING SLEEVE
TOLERANCE ±10%

Cap., µF	WV DC	MIL Type CP05-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*	Cap., µF	WV DC	MIL Type CP05-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*
.033	100	A1KB333K3	$10.164	$ 6.776	$4.659	$3.388	$2.118	$1.271	.47	400	A1KE474K3	$15.682	$10.454	$7.187	$5.227	$3.267	$1.960
.1	100	A1KB104K3	10.309	6.873	4.725	3.436	2.148	1.289	1.0	400	A1KE105K3	20.618	13.746	9.450	6.873	4.296	2.577
.22	100	A1KB224K3	11.035	7.357	5.058	3.678	2.299	1.379	.001	600	A1KF102K3	9.728	6.486	4.459	3.243	2.027	1.216
.47	100	A1KB474K3	13.649	9.099	6.256	4.550	2.844	1.706	.0015	600	A1KF152K3	9.728	6.486	4.459	3.243	2.027	1.216
1.0	100	A1KB105K3	15.827	10.551	7.254	5.276	3.297	1.978	.0022	600	A1KF222K3	9.728	6.486	4.459	3.243	2.027	1.216
.022	200	A1KC223K3	9.728	6.486	4.459	3.243	2.027	1.216	.0033	600	A1KF332K3	9.728	6.486	4.459	3.243	2.027	1.216
.068	200	A1KC683K3	10.164	6.776	4.659	3.388	2.118	1.271	.0047	600	A1KF472K3	9.728	6.486	4.459	3.243	2.027	1.216
.1	200	A1KC104K3	10.309	6.873	4.725	3.436	2.148	1.289	.0068	600	A1KF682K3	9.728	6.486	4.459	3.243	2.027	1.216
.22	200	A1KC224K3	11.035	7.357	5.058	3.678	2.299	1.379	.01	600	A1KF103K3	10.019	6.679	4.592	3.340	2.087	1.252
.47	200	A1KC474K3	13.213	8.809	6.056	4.404	2.753	1.652	.022	600	A1KF223K3	10.019	6.679	4.592	3.340	2.087	1.252
1.0	200	A1KC105K3	15.682	10.454	7.187	5.227	3.267	1.960	.047	600	A1KF473K3	10.454	6.970	4.792	3.485	2.178	1.307
.01	400	A1KE103K3	9.728	6.486	4.459	3.243	2.027	1.216	.1	600	A1KF104K3	12.342	8.228	5.657	4.114	2.571	1.543
.033	400	A1KE333K3	10.019	6.679	4.592	3.340	2.087	1.252	.22	600	A1KF224K3	13.213	8.809	6.056	4.404	2.753	1.652
.047	400	A1KE473K3	10.454	6.970	4.792	3.485	2.178	1.307	.47	600	A1KF474K3	17.134	11.422	7.853	5.711	3.570	2.142
.1	400	A1KE104K3	10.890	7.260	4.991	3.630	2.269	1.361	.1	1000	A1KG104K3	12.632	8.422	5.790	4.211	2.632	1.579
.22	400	A1KE224K3	13.358	8.906	6.123	4.453	2.783	1.670									

*500-999 Quantity Prices on Request.

TYPE CP09—WITH INSULATING SLEEVE
TOLERANCE ±10%

Cap., µF	WV DC	MIL Type CP09-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*	Cap., µF	WV DC	MIL Type CP09-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	520-499*
.01	100	A1KB103K3	$ 3.630	$ 2.904	$1.815	$1.452	$1.089	$0.908	.1	400	A1KE104K3	$ 4.659	$ 3.727	$2.329	$1.863	$1.398	$1.165
.015	100	A1KB153K3	3.570	2.856	1.785	1.428	1.071	.892	.15	400	A1KE154K3	4.901	3.920	2.450	1.960	1.470	1.225
.039	100	A1KB393K3	3.630	2.904	1.815	1.452	1.089	.908	.22	400	A1KE224K3	5.082	4.066	2.541	2.033	1.525	1.271
.047	100	A1KB473K3	3.630	2.904	1.815	1.452	1.089	.908	.001	600	A1KF102K3	3.630	2.904	1.815	1.452	1.089	.908
.1	100	A1KB104K3	3.872	3.098	1.936	1.549	1.162	.968	.0022	600	A1KF222K3	3.630	2.904	1.815	1.452	1.089	.908
.22	100	A1KB224K3	3.993	3.194	1.997	1.597	1.198	.998	.01	600	A1KF103K3	3.751	3.001	1.876	1.500	1.125	.938
.027	200	A1KC273K3	3.630	2.904	1.815	1.452	1.089	.908	.022	600	A1KF223K3	3.872	3.098	1.936	1.549	1.162	.968
.033	200	A1KC333K3	3.630	2.904	1.815	1.452	1.089	.908	.033	600	A1KF333K3	3.933	3.146	1.966	1.573	1.180	.983
.056	200	A1KC563K3	3.751	3.001	1.876	1.500	1.125	.938	.047	600	A1KF473K3	3.993	3.194	1.997	1.597	1.198	.998
.068	200	A1KC683K3	3.751	3.001	1.876	1.500	1.125	.938	.1	600	A1KF104K3	4.780	3.824	2.390	1.912	1.434	1.195
.1	200	A1KC104K3	3.812	3.049	1.906	1.525	1.143	.953	.22	600	A1KF224K3	5.264	4.211	2.632	2.105	1.579	1.316
.15	200	A1KC154K3	3.993	3.194	1.997	1.597	1.198	.998	.01	1000	A1KG103K3	4.296	3.436	2.148	1.718	1.289	1.074
.22	200	A1KC224K3	4.356	3.485	2.178	1.742	1.307	1.089	.1	1000	A1KG104K3	5.143	4.114	2.571	2.057	1.543	1.286
.015	400	A1KE153K3	3.812	3.049	1.906	1.525	1.143	.953	.22	1000	A1KG224K3	6.050	4.840	3.025	2.420	1.815	1.513
.047	400	A1KE473K3	4.296	3.436	2.148	1.718	1.289	1.074									

*500-999 Quantity Prices on Request.

TYPE CP04—BARE METAL CASE
TOLERANCE ±10%

Cap., µF	WV DC	MIL Type CP04-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*	Cap., µF	WV DC	MIL Type CP04-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*
.003	100	A1KB333K3	$ 9.583	$ 6.389	$4.392	$3.194	$1.997	$1.198	.47	400	A1KE474K3	$14.665	$ 9.777	$6.722	$4.888	$3.055	$1.833
.1	100	A1KB104K3	9.728	6.486	4.459	3.243	2.027	1.216	1.0	400	A1KE105K3	19.021	12.681	8.718	6.340	3.963	2.378
.22	100	A1KB474K3	10.309	6.873	4.725	3.436	2.148	1.289	.001	600	A1KF102K3	9.148	6.098	4.193	3.049	1.906	1.143
.47	100	A1KB474K3	12.778	8.518	5.856	4.259	2.662	1.597	.0015	600	A1KF152K3	9.148	7.098	4.193	3.049	1.906	1.143
1.0	100	A1KB105K3	14.956	9.970	6.855	4.985	3.116	1.869	.0022	600	A1KF222K3	9.148	6.098	4.193	3.049	1.906	1.143
.022	200	A1KC223K3	9.148	6.098	4.193	3.049	1.906	1.143	.0033	600	A1KF332K3	9.148	6.098	4.193	3.049	1.906	1.143
.068	200	A1KC683K3	9.583	6.389	4.392	3.194	1.997	1.198	.0047	600	A1KF472K3	9.148	6.098	4.193	3.049	1.906	1.143
.1	200	A1KC104K3	9.583	6.389	4.392	3.194	1.997	1.198	.0068	600	A1KF682K3	9.148	6.098	4.193	3.049	1.906	1.143
.22	200	A1KC224K3	10.309	6.873	4.725	3.436	2.148	1.289	.01	600	A1KF103K3	9.438	6.292	4.326	3.146	1.966	1.180
.47	200	A1KC474K3	12.342	8.228	5.657	4.114	2.571	1.543	.022	600	A1KF223K3	9.438	6.292	4.326	3.146	1.966	1.180
1.0	200	A1KC105K3	14.665	9.777	6.722	4.888	3.055	1.833	.047	600	A1KF473K3	9.728	6.486	4.459	3.243	2.027	1.216
.01	400	A1KE103K3	9.148	6.098	4.193	3.049	1.906	1.143	.1	600	A1KF104K3	11.471	7.647	5.257	3.824	2.390	1.434
.033	400	A1KE333K3	9.438	6.292	4.326	3.146	1.966	1.180	.22	600	A1KF224K3	12.342	8.228	5.657	4.114	2.571	1.543
.047	400	A1KE473K3	9.728	6.486	4.459	3.243	2.027	1.216	.47	600	A1KF474K3	15.827	10.551	7.254	5.276	3.297	1.978
.1	400	A1KE104K3	10.164	6.776	4.659	3.388	2.118	1.271	.1	1000	A1KG104K3	11.761	7.841	5.391	3.920	2.450	1.470
.22	400	A1KE224K3	12.487	8.325	5.723	4.162	2.602	1.561									

*500-999 Quantity Prices on Request.

TYPE CP08—BARE METAL CASE
TOLERANCE ±10%

Cap., µF	WV DC	MIL Type CP08-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*	Cap., µF	WV DC	MIL Type CP08-	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*
.01	100	A1KB103K3	$ 3.388	$ 2.710	$1.694	$1.355	$1.016	$0.847	.1	400	A1KE104K3	$ 4.296	$ 3.436	$2.148	$1.718	$1.289	$1.074
.015	100	A1KB153K3	3.328	2.662	1.664	1.331	.998	.832	.15	400	A1KE154K3	4.538	3.630	2.269	1.815	1.361	1.134
.039	100	A1KB393K3	3.388	2.710	1.694	1.355	1.016	.847	.22	400	A1KE224K3	4.719	3.775	2.360	1.888	1.416	1.180
.047	100	A1KB473K3	3.388	2.710	1.694	1.355	1.016	.847	.001	600	A1KF102K3	3.388	2.710	1.694	1.355	1.016	.847
.1	100	A1KB104K3	3.570	2.856	1.785	1.428	1.071	.892	.0022	600	A1KF222K3	3.388	2.710	1.694	1.355	1.016	.847
.22	100	A1KB224K3	3.691	2.952	1.845	1.476	1.107	.923	.01	600	A1KF103K3	3.509	2.807	1.755	1.404	1.053	.877
.027	200	A1KC273K3	3.388	2.710	1.694	1.355	1.016	.847	.022	600	A1KF223K3	3.570	2.856	1.785	1.428	1.071	.892
.033	200	A1KC333K3	3.388	2.710	1.694	1.355	1.016	.847	.033	600	A1KF333K3	3.630	2.904	1.815	1.452	1.089	.908
.056	200	A1KC563K3	3.449	2.759	1.724	1.379	1.035	.862	.047	600	A1KF473K3	3.691	2.952	1.845	1.476	1.107	.923
.068	200	A1KC683K3	3.449	2.759	1.724	1.379	1.035	.862	.1	600	A1KF104K3	4.417	3.533	2.208	1.767	1.325	1.104
.1	200	A1KC104K3	3.509	2.807	1.755	1.404	1.053	.877	.22	600	A1KF224K3	4.840	3.872	2.420	1.936	1.452	1.210
.15	200	A1KC154K3	3.691	2.952	1.845	1.476	1.107	.923	.01	1000	A1KG103K3	3.993	3.194	1.997	1.597	1.198	.998
.22	200	A1KC224K3	3.993	3.194	1.997	1.597	1.198	.998	.1	1000	A1KG104K3	4.719	3.775	2.360	1.888	1.416	1.180
.015	400	A1KE153K3	3.570	2.856	1.785	1.428	1.071	.892	.22	1000	A1KG224K3	5.506	4.404	2.753	2.202	1.652	1.376
.047	400	A1KE473K3	3.993	3.194	1.997	1.597	1.198	.998									

*500-999 Quantity Prices on Request.

TYPE CP72 MIL-C-25C CAPACITORS

Mineral oil impregnated for minimum capacitance change with temperature, and the ability to withstand severe operating conditions. Rugged construction for exacting heavy-duty operation. Terminals have ceramic pillar insulators (E) or rubber compression seals (B). Characteristic F units are recommended primarily for ground equipment where no low temperatures are met. **Note:** These units have a capacitance tolerance of ±10%. For ±20% tolerance, change last letter in number to **M** (same price). Temperature Range: −55° C to +85° C. Specify footed or spade mounting bracket. For spade, change sixth letter of mounting bracket number to **S** (i.e., CP072SA1).

"E" CHARACTERISTIC

E TERMINALS (PILLAR STANDOFFS WITH SOLDER LUGS)

μF	Volts	MIL-C-25C Number	Net Each, Lots of 1-24	25-49	50-99	Mtg. Bkt. CP072-	Net/ Pair
.25	2000	CP72E1EJ254K1	$12.75	$ 8.50	$ 6.38	FB1	$2.60
.5	1000	CP72E1EG504K1	7.95	5.30	3.98	FA2	2.60
.5	1500	CP72E1EH504K1	7.95	5.30	3.98	FA3	2.60
1.0	600	CP72E1EF105K1	8.31	5.54	4.16	FA2	2.60
1.0	1000	CP72E1EG105K1	8.25	5.50	4.13	FA3	2.60
1.0	2000	CP72E1EJ105K1	14.55	9.70	7.28	FB6	2.60
2.0	600	CP72E1EF205K1	9.12	6.08	4.56	FA4	2.60
2.0	1000	CP72E1EG205K1	9.45	6.30	4.73	FA6	2.60
4.0	600	CP72E1EF405K1	9.96	6.64	4.98	FB4	2.60
4.0	1500	CP72E1EH405K1	14.25	9.50	7.13	FD4	3.36
6.0	600	CP72E1EF605K1	14.70	9.80	7.35	FC2	2.60
6.0	1000	CP72E1EG605K1	15.30	10.20	7.65	FD3	3.36
8.0	1000	CP72E1EG805K1	17.10	11.40	8.55	FD5	3.36
10.0	600	CP72E1EF106K1	15.75	9.45	8.19	FD3	3.36
10.0	1000	CP72E1EG106K1	17.50	10.50	9.10	FE5	4.40

"E" CHARACTERISTIC

B TERMINALS (NON-REMOVABLE SOLDER LUGS)

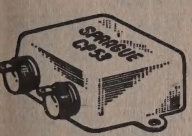
μF	Volts	MIL-C-25C Number	Net Each, Lots of 1-24	25-49	50-99	Mtg. Bkt. CP072-	Net/ Pair
1.0	1000	CP72B1EG105K1	$ 8.00	$ 6.00	$4.00	FA3	$2.60
2.0	1000	CP72B1EG205K1	9.60	7.20	4.80	FA6	2.60
4.0	600	CP72B1EF405K1	7.74	5.16	3.87	FB4	2.60
6.0	600	CP72B1EF605K1	12.45	8.30	6.23	FC2	2.60
8.0	600	CP72B1EF805K1	14.10	9.40	7.05	FC3	2.60
10.0	600	CP72B1EF106K1	16.50	11.00	8.25	FD3	3.36

"F" CHARACTERISTIC

B TERMINALS (NON-REMOVABLE SOLDER LUGS)

μF	Volts	MIL-C-25C Number	Net Each, Lots of 1-24	25-49	50-99	Mtg. Bkt. CP072-	Net/ Pair
2.0	1000	CP72B1FG205K1	$ 8.40	$6.30	$4.20	.....	.....
4.0	600	CP72B1FF405K1	9.00	6.75	4.50	.....	.....
10.0	600	CP72B1FF106K1	11.91	7.15	5.56	FC4	$2.60

TYPE CP53 MIL-C-25 BATHTUB CAPACITORS



Impregnated with specially processed mineral oil to exceed performance requirements of MIL-C-25. Units are hermetically sealed with silicone rubber compression terminals for −55° C to +85° C operation. Drawn metal cases have mounting flanges as an integral part of the container. Single and dual capacitance units have insulated sections, triple capacitance unit has grounded case. Mounting brackets available.

SINGLE CAPACITANCE UNITS

Capacitance Tolerance: ±10%. For ±20% tolerance, change last letter in No. from "K" to "M" (available at same price).

μF	Volts	Sprague No. CP53-	Net Each, Lots of 1-24	25-49	50-99	100-249
.05	1000	B1EG503K1	$ 5.34	$3.81	$2.223	$1.905
.1	1000	B1EG104K1	5.52	3.93	2.293	1.965
.25	600	B1EF254K1	6.06	4.32	2.52	2.16
.25	1000	B1EG254K1	5.73	4.08	2.38	2.04
.5	600	B1EF504K1	6.57	4.68	2.73	2.34
.5	1000	B1EG504K1	7.20	5.13	2.993	2.565
1.0	600	B1EF105K1	7.44	5.31	3.098	2.655
1.0	1000	B1EG105K1	8.88	6.33	3.693	3.165
2.0	200	B1EC205K1	10.26	7.32	4.27	3.66
2.0	600	B1EF205K1	9.39	6.69	3.903	3.345

TRIPLE CAPACITANCE UNIT

Capacitance Tolerance: +20%, −10%. For ±20% tolerance, change last letter in No. from "V" to "M" (available at same price).

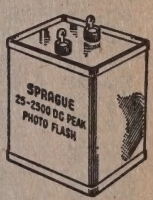
μF	Volts	Sprague No. CP53-	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.1–.1	600	B5EF104V1	$9.12	$6.51	$3.798	$3.255

DUAL CAPACITANCE UNITS

Capacitance Tolerance: +20%, −10%. For ±20% tolerance, change last letter in No. from "V" to "M" (available at same price).

μF	Volts	Sprague No. CP53-	Net Each, Lots of 1-24	25-49	50-99	100-249
.1 –.1	600	B4EF104V1	$ 7.23	$5.16	$3.01	$2.58
.1 –.1	1000	B4EG104V1	7.53	5.37	3.133	2.685
.25–.25	600	B4EF254V1	7.50	5.34	3.115	2.67
.25–.25	1000	B4EG254V1	8.40	6.00	3.50	3.00
.5 –.5	600	B4EF504V1	8.88	6.33	3.693	3.165
.5 –.5	1000	B4EG504V1	10.80	7.71	4.498	3.855
1.0 –1.0	600	B4EF105V1	10.50	7.50	4.375	3.75

TYPE PQ ENERGY STORAGE CAPACITORS



Designed expressly for photoflash and laser applications—not comparable to standard heavy-duty types such as CR transmitting capacitors. Compact design offers smallest possible energy storage construction with maximum dependability. Hermetically sealed; oil impregnated and oil filled. High insulation resistance.

Sprague Number	Cap., μF	Peak VDC*	Total Watt/Sec.	Size, Inches H. x W. x D.	Net Each
PQ-2510	10	2500	31	4½ x 3¾ x 2¼	$22.16
PQ-2515	15	2500	47	4¾ x 3¾ x 3⅛	31.47
PQ-2525	25	2500	78	5⅛ x 3¾ x 4⅛	47.04
PQ-2535	35	2500	109	7 x 3¾ x 4⅛	59.68
PQ-315	15	3000	67	4¾ x 3¾ x 3⅛	32.27
PQ-425	25	4000	200	9⅝ x 3¾ x 4⅛	80.05

*Not to be exceeded under highest line voltage condition.

OUR STOCKS ARE COMPLETE AND UP-TO-DATE FOR PROMPT DELIVERY—
SEE CATALOG INDEX FOR OTHER SPRAGUE PRODUCTS ALSO LISTED.
WRITE FOR INFORMATION ON NEW OR UNLISTED ITEMS.

CERA-MITE® NPO (DISCS)

Zero temperature-coefficient capacitors used where capacitance change with temperature is undesirable. Superior to silvered-mica types in stability, high "Q" and insulation resistance. Rated 1000 WVDC. Std. Tol.: ±5%, 12 pF up; all others ±0.5 pF.

Sprague No.	pF	Net Each
10TCC-V10	1	$0.15
10TCC-V12	1.2	.15
10TCC-V15	1.5	.15
10TCC-V18	1.8	.15
10TCC-V22	2.2	.15
10TCC-V27	2.7	.15
10TCC-V30	3.0	.15
10TCC-V33	3.3	.15
10TCC-V39	3.9	.15
10TCC-V47	4.7	.15
10TCC-V50	5.0	.15
10TCC-V56	5.6	.15
10TCC-V68	6.8	.15
10TCC-V82	8.2	.15
10TCC-Q10	10	.15
10TCC-Q12	12	.15
10TCC-Q15	15	.15
10TCC-Q18	18	.15
10TCC-Q20	20	.15
10TCC-Q22	22	.15
10TCC-Q25	25	.15
10TCC-Q27	27	.15
10TCC-Q30	30	.15
10TCC-Q33	33	.15
10TCC-Q39	39	.15
10TCC-Q47	47	.15
10TCC-Q50	50	.15
10TCC-Q56	56	.15
10TCC-Q68	68	.15
10TCC-Q75	75	.15
10TCC-Q82	82	.15
10TCC-T10	100	.15
10TCC-T12	120	.15
10TCC-T15	150	.15
10TCC-T18	180	.27
10TCC-T20	200	.27
10TCC-T22	220	.30
10TCC-T27	270	.33
10TCC-T30	300	.33
10TCC-T33	330	.45
10TCC-T39	390	.45

HYPERCON® CERAMIC DISCS

Ultra-miniature discs for transistorized circuitry, bypass and coupling. Especially suited for any low voltage use where high capacitance and low power factors are important. Std. Tol.: HY-420–HY470 and HY-510–HY-550, +80 −20%; all others +50 −20%.

Sprague No.	μF	WVDC	Net Each
HY-340	.022	12	$0.15
HY-345	.033	12	.15
HY-350	.047	12	.15
HY-355	.068	12	.15
HY-360	.1	12	.18
HY-365	.15	12	.24
HY-370	.22	12	.27
HY-375	.33	12	.33
HY-380	.47	12	.45
HY-420	.01	16	.15
HY-425	.022	16	.15
HY-430	.033	16	.15
HY-435	.047	16	.15
HY-440	.068	16	.15
HY-450	.1	16	.15
HY-470	.2	16	.27
HY-625	.022	16	.15
HY-630	.033	16	.15
HY-635	.047	16	.15
HY-640	.068	16	.15
HY-650	.1	16	.15
HY-665	.15	16	.24
HY-670	.22	16	.27
HY-675	.33	16	.33
HY-510	.0047	25	.15
HY-520	.01	25	.15
HY-525	.022	25	.15
HY-530	.033	25	.15
HY-535	.047	25	.18
HY-540	.068	25	.18
HY-550	.1	25	.21
HY-720	.015	25	.15
HY-725	.022	25	.15
HY-730	.033	25	.15
HY-735	.047	25	.18
HY-740	.068	25	.21
HY-750	.1	25	.24
HY-765	.15	25	.27
HY-770	.22	25	.39

1905XCR-73A

TYPE TE LITTL-LYTIC® CAPACITORS

Ultra small; excellent, dependable replacement units for transistorized equipment presently on the market. Hermetically sealed in metal case. Low leakage current; long shelf life. Furnished with clear plastic outer insulating sleeves. Rated 85° C.

3 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1050	1	A	$.72	$.48	$.384	$.288	$.240
1051	2	A	.72	.48	.384	.288	.240
1052	3	A	.72	.48	.384	.288	.24
1052.1	4	A	.72	.48	.384	.288	.24
1052.2	5	A	.72	.48	.384	.288	.24
1052.3	6	A	.72	.48	.384	.288	.24
1052.5	8	A	.72	.48	.384	.288	.24
1053	10	A	.72	.48	.384	.288	.24
1053.5	15	A	.72	.48	.384	.288	.24
1054	20	A	.72	.48	.384	.288	.24
1055	25	A	.72	.48	.384	.288	.24
1055.5	30	A	.72	.48	.384	.288	.24
1058	50	B	.72	.48	.384	.288	.24
1058.5	65	B	.72	.48	.384	.288	.24
1059	75	C	.72	.483	.386	.29	.241
1059.5	100	C	.72	.483	.386	.29	.241
1060.1	130	C	.72	.483	.386	.29	.241
1061	150	D	.72	.495	.396	.297	.248
1064	200	D	.72	.495	.396	.297	.248
1065	250	F	.72	.50	.40	.30	.25
1066	300	F	.72	.50	.40	.30	.25
1067	400	G	.75	.505	.404	.303	.253
1068	500	H	.81	.56	.448	.336	.28
1069.1	600	H	.81	.56	.448	.336	.28
1070.1	800	I	.87	.60	.48	.36	.30

6 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1080	1	A	$.72	$.48	$.384	$.288	$.24
1081	2	A	.72	.48	.384	.288	.24
1082	3	A	.72	.48	.384	.288	.24
1083	4	A	.72	.48	.384	.288	.24
1084	5	A	.72	.48	.384	.288	.24
1085	6	A	.72	.48	.384	.288	.24
1086	8	A	.72	.48	.384	.288	.24
1087	10	A	.72	.48	.384	.288	.24
1089	15	A	.72	.48	.384	.288	.24
1090	20	A	.72	.48	.384	.288	.24
1091	25	B	.72	.48	.384	.288	.24
1093	35	B	.72	.48	.384	.288	.24
1100	50	B	.72	.48	.384	.288	.24
1101.5	75	C	.72	.483	.386	.29	.241
1101.7	90	C	.72	.483	.386	.29	.241
1102	100	D	.72	.495	.396	.297	.248
1102.5	140	D	.72	.495	.396	.297	.248
1103	150	F	.72	.50	.40	.30	.25
1104	200	F	.72	.50	.40	.30	.25
1105	250	G	.75	.505	.404	.303	.253
1106	300	H	.75	.505	.404	.303	.253
1107	400	H	.81	.56	.448	.336	.28
1107.5	500	I	.87	.60	.48	.36	.30
1108.5	600	I	.87	.60	.48	.36	.30

12 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1120	1	A	$.72	$.48	$.384	$.288	$.24
1121	2	A	.72	.48	.384	.288	.24
1122	3	A	.72	.48	.384	.288	.24
1123	4	A	.72	.48	.384	.288	.24
1127	5	A	.72	.48	.384	.288	.24
1127.1	6	A	.72	.48	.384	.288	.24
1127.3	8	A	.72	.48	.384	.288	.24
1128	10	A	.72	.48	.384	.288	.24
1129	15	A	.72	.48	.384	.288	.24
1130	20	B	.72	.48	.384	.288	.24
1131	25	B	.72	.48	.384	.288	.24
1132.1	30	B	.72	.48	.384	.288	.24
1133	50	C	.72	.483	.386	.29	.241
1133.5	60	C	.72	.483	.386	.29	.241
1134	75	D	.72	.495	.396	.297	.248
1134.5	90	E	.72	.495	.396	.297	.248
1135	100	D	.72	.495	.396	.297	.248
1135.5	140	F	.72	.50	.40	.30	.25
1136	150	G	.75	.505	.404	.303	.253
1136.5	190	G	.75	.505	.404	.303	.253
1137	200	H	.81	.56	.448	.336	.28
1138	250	H	.81	.56	.448	.336	.28
1139	290	H	.81	.56	.448	.336	.28
1140	390	I	.87	.60	.48	.36	.30

*500–999 Quantity price Available on Request.

16 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-49
1148	1	A	$.72	$.48	$.384	$.288	$.2
1149	2	A	.72	.48	.384	.288	.2
1150	3	A	.72	.48	.384	.288	.2
1151	4	A	.72	.48	.384	.288	.2
1152	5	A	.72	.48	.384	.288	.2
1153	6	A	.72	.48	.384	.288	.2
1154	8	A	.72	.48	.384	.288	.2
1155	10	A	.72	.48	.384	.288	.2
1156	15	B	.72	.48	.384	.288	.2
1157	20	B	.72	.48	.384	.288	.2
1157.1	25	B	.72	.48	.384	.288	.2
1158	30	C	.72	.483	.386	.29	.2
1159	35	C	.72	.483	.386	.29	.2
1160	50	C	.72	.483	.386	.29	.2
1161	75	D	.72	.495	.396	.297	.2
1161.5	85	E	.72	.495	.396	.297	.2
1161.7	90	D	.72	.495	.396	.297	.2
1162	100	F	.72	.50	.40	.30	.2
1162.5	130	F	.72	.50	.40	.30	.2
1163	150	G	.75	.505	.404	.303	.2
1163.7	180	G	.75	.505	.404	.303	.2
1164	200	H	.81	.56	.448	.336	.2
1164.5	250	H	.81	.56	.448	.336	.2
1165.5	300	I	.87	.60	.48	.36	.3
1166	350	I	.87	.60	.48	.36	.3

25 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-49
1200	1	A	$.72	$.48	$.384	$.288	$.2
1201	2	A	.72	.48	.384	.288	.2
1201.1	3	A	.72	.48	.384	.288	.2
1201.2	4	A	.72	.48	.384	.288	.2
1202	5	A	.72	.48	.384	.288	.2
1203	6	A	.72	.48	.384	.288	.2
1203.5	8	A	.72	.48	.384	.288	.2
1204	10	B	.72	.48	.384	.288	.2
1205	15	B	.72	.48	.384	.288	.2
1206	20	C	.72	.483	.386	.29	.2
1207	25	C	.72	.483	.386	.29	.2
1207.5	30	C	.72	.483	.386	.29	.2
1208	35	C	.72	.483	.386	.29	.2
1209	50	D	.72	.495	.396	.297	.2
1210	75	F	.72	.50	.40	.30	.2
1211	100	G	.75	.505	.404	.303	.2
1212	150	H	.81	.56	.448	.336	.2
1213	200	I	.87	.60	.48	.36	.3

50 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-49
1300	1	A	$.72	$.48	$.384	$.288	$.2
1301	2	A	.72	.48	.384	.288	.2
1302	3	A	.72	.48	.384	.288	.2
1302.1	4	A	.72	.48	.384	.288	.2
1303	5	B	.72	.48	.384	.288	.2
1303.1	6	B	.72	.48	.384	.288	.2
1303.3	8	B	.72	.48	.384	.288	.2
1304	10	C	.72	.483	.386	.29	.2
1304.2	15	C	.72	.483	.386	.29	.2
1305	20	D	.72	.495	.396	.297	.2
1305.5	25	D	.72	.495	.396	.297	.2
1306	35	F	.72	.50	.40	.30	.2
1307	50	G	.75	.505	.404	.303	.2
1308	75	H	.81	.56	.448	.336	.2
1309	100	I	.87	.60	.48	.36	.3

100 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-49
1400	1	A	$.78	$.528	$.422	$.317	$.2
1401	2	B	.78	.528	.422	.317	.2
1402	3	C	.78	.53	.424	.318	.2
1403	4	C	.78	.53	.424	.318	.2
1404	5	D	.81	.545	.436	.327	.2
1405	6	D	.81	.545	.436	.327	.2
1406	8	F	.81	.55	.44	.33	.2
1407	10	F	.81	.55	.44	.33	.2
1408	15	G	.81	.555	.444	.333	.2
1409	20	H	.90	.615	.492	.369	.3
1410	25	I	.96	.66	.528	.396	.3
1411	30	I	.96	.66	.528	.396	.3

150 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-49
1500	1	A	$.78	$.528	$.422	$.317	$.2
1501	2	B	.78	.528	.422	.317	.2
1502	3	C	.78	.53	.424	.318	.2
1503	4	D	.81	.545	.436	.327	.2
1504	5	D	.81	.545	.436	.327	.2
1505	6	F	.81	.55	.44	.33	.2
1505.5	7	F	.81	.55	.44	.33	.2
1506	8	F	.81	.55	.44	.33	.2
1507	10	G	.81	.555	.444	.333	.2
1508.1	15	H	.90	.615	.492	.369	.3
1509	20	I	.96	.66	.528	.396	.2

†SIZES

Dia. x lg.: A—.260 x .536; B—.260 x .7
C—.322 x .723; D—.322 x .848; E—.3
.723; F—.385 x .848; G—.385 x .973;
.385 x 1.286; I—.385 x 1.536.

TRW Mylar Capacitors

TYPE 663UW TUBULAR MYLAR* CAPACITORS

Instrument quality capacitors for maximum space saving; tough, durable moisture-resistant plastic case. Conservatively rated for long life and reliable service. Can be produced to high reliability specs comparable to MIL-C-14157 and MIL-C-27287 except size and temp. on special order. Dense thermosetting epoxy endfill bonds securely to lead and case. **Insulation Resistance:** Greater than 70,000 megs-μF, 25° C, but need not exceed 140,000 megohms. **Temperature Range:** −55° C to +85° C; up to +125° C with 50% derating. **Humidity Resistance:** Will meet or exceed requirements of MIL-C-27287, para. 3.12. **Dielectric Strength:** Two times rated voltage. **Life:** 250 hours at 85° C and 125% of rated voltage. **Tolerance:** ±10%; also available in ±20%, ±5%, ±2% and ±1%.

100 AND 200 WVDC

Cap., μF	Net Each, Lots of 1-24	25-49	50-99*
.001	$0.79	$0.47	$0.34
.0015	.79	.47	.34
.0022	.79	.47	.34
.0033	.79	.47	.34
.0047	.83	.50	.36
.0068	.83	.50	.36
.0082	.86	.52	.38
.01	.86	.52	.38
.015	.86	.52	.38
.022	.86	.52	.38
.033	.94	.56	.41
.047	.94	.56	.41
.068	.98	.59	.42
.082	.98	.59	.42
.1	.99	.60	.43
.15	.99	.60	.43
.22	1.05	.63	.46
.27	1.13	.68	.49
.33	1.18	.71	.51
.47	1.24	.74	.54
.68	1.39	.83	.60
.82	1.43	.86	.62
1.0	1.58	.95	.69
2.0	2.10	1.26	.91

400 WVDC

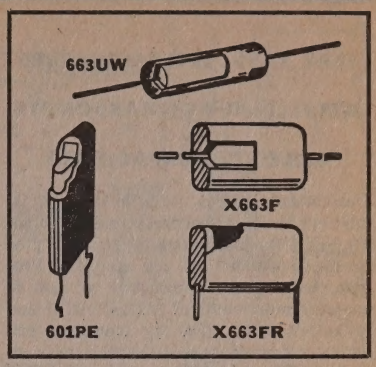
Cap., μF	Net Each, Lots of 1-24	25-49	50-99*
.001	$0.83	$0.50	$0.36
.0015	.83	.50	.36
.0022	.86	.52	.38
.0033	.86	.52	.38
.0047	.94	.56	.41
.0068	.94	.56	.41
.0082	.94	.56	.41
.01	.98	.59	.42
.015	.98	.59	.42
.022	.99	.60	.43
.033	.99	.60	.43
.047	1.01	.61	.44
.068	1.01	.61	.44
.082	1.01	.61	.44
.1	1.13	.68	.49
.15	1.18	.71	.51
.22	1.24	.74	.54
.27	1.28	.77	.56
.33	1.37	.82	.60
.47	1.56	.94	.68
.68	1.76	1.06	.77
.82	2.06	1.24	.90
1.0	2.21	1.33	.96
2.0	3.04	1.82	1.32

600 WVDC

Cap., μF	Net Each, Lots of 1-24	25-49	50-99*
.001	$0.86	$0.52	$0.38
.0015	.86	.52	.38
.0022	.86	.52	.38
.0033	.86	.52	.38
.0047	.94	.56	.41
.0068	.94	.56	.41
.0082	.98	.59	.42
.01	.98	.59	.42
.015	.98	.59	.42
.022	.99	.60	.43
.033	1.01	.61	.44
.047	1.13	.68	.49
.068	1.18	.71	.51
.082	1.20	.72	.52
.1	1.24	.74	.54
.15	1.37	.82	.60
.22	1.46	.88	.64
.27	1.58	.95	.69
.33	1.75	1.05	.76
.47	1.99	1.19	.86
.68	2.29	1.37	1.00
.82	2.48	1.49	1.08
1.0	2.70	1.62	1.17
2.0	5.18	3.11	2.25

1000 WVDC

Cap., μF	Net Each, Lots of 1-24	25-49	50-99*
.001	$0.86	$0.52	$0.38
.0015	.94	.56	.41
.0022	.94	.56	.41
.0033	.98	.59	.42
.0047	.98	.59	.42
.0068	.99	.60	.43
.0082	.99	.60	.43
.01	1.13	.68	.49
.015	1.18	.71	.51
.022	1.18	.71	.51
.033	1.20	.72	.52
.047	1.28	.77	.56
.068	1.43	.86	.62
.082	1.56	.94	.68
.1	1.56	.94	.68
.15	1.76	1.06	.77
.22	2.10	1.26	.91
.27	2.25	1.35	.98
.33	2.44	1.46	1.06
.47	2.93	1.76	1.27
.68	3.06	1.83	1.33
.82	3.24	1.95	1.41
1.0	3.45	2.07	1.50
2.0	6.60	3.96	2.87



TYPE 601PE "SLIM-LINE" MYLAR CAPACITORS

Special shape and leads for maximum space saving and flexibility in transistor and printed circuit applications. Replaces ceramic discs where stability with temperature change is important. Features high insulation resistance. Available in units comparable to MIL-C-14157 and MIL-C-27287 specifications on special order. Dipped epoxy coating over extended foil (non-inductive) Mylar dielectric. **Insulation Resistance:** Greater than 50,000 megohms-μF at 100 VDC, 25° C for 2 minutes, max. **Temperature Range:** Up to 85° C; derate 50% at 125° C. **Temperature Cycling:** Min. insulation resis., 25,000 megohms after MIL-STD-202B, Method 102A, Condition D no voltage applied test, capacitance change less than 1%, same test. **Dissipation Factor:** Less than 1% at 1 kHz 25° C. **Dielectric Strength:** 100 VDC. **Tolerance:** Units shown ±10%. Available in ±20% and ±5%; prices on request.

50 WVDC

Cap., μF	Net Each, Lots of 1-24	25-49	50-99*
.01	$0.98	$0.59	$0.42
.015	.99	.60	.43
.022	1.01	.61	.44
.033	1.13	.68	.49
.047	1.18	.71	.51
.068	1.20	.72	.52
.1	1.35	.81	.59
.15	1.39	.83	.60
.22	1.46	.88	.64
.33	1.58	.95	.69

TYPES X663F AND X663FR FLAT METALLIZED MYLAR CAPACITORS

Ultraminiature, lightweight design available with axial or radial leads to fit crowded chassis layouts. Thin, oval profile offers significant space saving. Feature high insulation resistance; self healing; long, stable life. **Insulation Resistance:** Better than 30,000 megohm-μF at 25° C, but need not exceed 30,000 megohms. **Dissipation Factor:** Less than 1.0% at 1000 ±20 Hz thru 1.0 μF at 25° C ±5° (.022 μF, 100 and 200 WVDC rated 1.5%); 1.5-50 μF at 60 ±6 Hz. **Temperature Range:** −55° C to +100° C; to +125° C with 50% derating. **Humidity Resistance:** Comply with test requirements of MIL-STD-202C, method 103B, condition A, para. 3.4. **Dielectric Strength:** Twice rated voltage for one minute. **Life:** 250 hours at +100° C and 125% of rated voltage. **Tolerance:** ±10%; also available in ±20%, ±5%, ±2% and ±1%; prices on request.

AXIAL LEAD TYPE X663F

Cap., μF	50 WVDC, Net Each 1-24	25-49	50-99*	100 or 200 WVDC, Net Each 1-24	25-49	50-99*	400 WVDC, Net Each 1-24	25-49	50-99*
.01	.....	.....	.....	$1.58	$0.95	$0.69	$2.25	$1.35	$0.98
.022	.....	.....	.....	1.46	.88	.64	1.99	1.19	.86
.033	$2.93	$1.76	$1.27	1.37	.82	.60	1.91	1.15	.83
.047	2.81	1.69	1.22	1.35	.81	.59	1.76	1.06	.77
.068	2.68	1.61	1.17	1.35	.81	.59	1.65	.99	.72
.1	2.66	1.60	1.16	1.35	.81	.59	1.43	.86	.62
.22	2.78	1.67	1.21	1.46	.88	.64	1.95	1.17	.85
.33	2.81	1.69	1.22	1.76	1.06	.77	2.21	1.33	.96
.47	3.19	1.91	1.39	1.91	1.15	.83	2.63	1.58	1.14
.68	3.75	2.25	1.63	2.10	1.26	.91	2.93	1.76	1.27
1.0	4.50	2.70	1.96	2.40	1.44	1.04	3.53	2.12	1.53
1.5	5.70	3.42	2.48	2.89	1.73	1.26	4.37	2.62	1.90
2.0	6.60	3.96	2.87	3.19	1.91	1.39	5.31	3.18	2.31
3.0	7.95	4.77	3.46	3.81	2.28	1.66	.....	.....	.....
4.0	9.00	5.40	3.91	4.74	2.85	2.06	.....	.....	.....
5.0	9.86	5.92	4.29	5.36	3.22	2.33	.....	.....	.....

RADIAL LEAD TYPE X663FR

Cap., μF	50 WVDC, Net Each 1-24	25-49	50-99*	100 or 200 WVDC, Net Each 1-24	25-49	50-99*	400 WVDC, Net Each 1-24	25-49	50-99*
.01	.....	.....	.....	$1.86	$1.11	$0.80	$2.27	$1.36	$0.99
.022	.....	.....	.....	1.65	.99	.72	2.01	1.27	.91
.033	$3.39	$2.04	$1.47	1.57	.95	.68	1.94	1.17	.84
.047	3.18	1.90	1.39	1.57	.95	.68	1.94	1.11	.80
.068	3.09	1.86	1.34	1.49	.89	.65	1.74	1.05	.76
.1	3.06	1.84	1.33	1.49	.89	.65	1.44	.87	.63
.22	3.14	1.88	1.36	1.65	.99	.72	2.15	1.29	.94
.33	3.18	1.90	1.39	1.98	1.19	.86	2.52	1.51	1.10
.47	3.67	2.20	1.60	2.19	1.31	.95	3.06	1.84	1.33
.68	4.33	2.60	1.88	2.43	1.46	1.06	3.42	2.06	1.49
1.0	5.07	3.05	2.21	2.68	1.61	1.17	4.08	2.45	1.77
1.5	6.56	3.94	2.85	3.30	1.98	1.44	5.07	3.05	2.21
2.0	7.59	4.55	3.30	3.67	2.20	1.60	6.06	3.64	2.64
3.0	9.12	5.47	3.96	4.38	2.63	1.90	.....	.....	.....
4.0	10.35	6.21	4.50	5.40	3.25	2.35	.....	.....	.....
5.0	11.34	6.81	4.93	6.23	3.74	2.71	.....	.....	.....

*Reg. DuPont trademark.

★WRITE FOR PRICES ON LARGER QUANTITIES

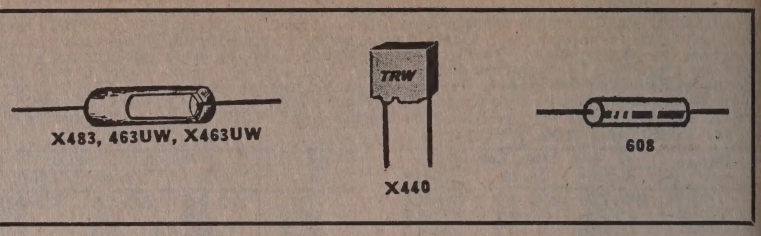
TYPE X483 ULTRAMINIATURE METALLIZED POLYCARBONATE DIELECTRIC CAPACITORS

Hermetically sealed, metal enclosed units offer outstanding electrical properties: High IR, low DF and dielectric absorption; plus excellent retrace, TC and stability. Provide environmental protection to meet or exceed requirements of MIL-C-18312 and MIL-C-19978B. Ideal for transistor circuitry and where close initial tolerances are required. Low dielectric absorption and excellent retrace make these suitable for computer, timing, filter and other critical circuits which may operate to 125° C. High insulation resistance. Both leads insulated. **Temperature Range:** −55° C to +125° C with full rated voltage. **Tolerance:** ±10%; other tolerances available on request. Also available in 100 V and 400 V on request.

Cap. µF	*	50 V, Net Each 1-24	50 V, Net Each 25-49*	*	200 V, Net Each 1-24	200 V, Net Each 25-49*
.0010	A	$4.46	$2.67	A	$4.46	$2.67
.0012	A	4.46	2.67	A	4.46	2.67
.0015	A	4.50	2.70	A	4.50	2.70
.0018	A	4.50	2.70	A	4.50	2.70
.0022	A	4.54	2.73	A	4.54	2.73
.0027	A	4.54	2.73	A	4.54	2.73
.0033	A	4.58	2.75	A	4.58	2.75
.0039	A	4.58	2.75	A	4.58	2.75
.0047	A	4.62	2.78	A	4.62	2.77
.0056	A	4.62	2.78	A	4.62	2.77
.0068	A	4.66	2.79	A	4.66	2.79
.0082	A	4.66	2.79	A	4.66	2.79
.010	A	4.74	2.85	B	4.74	2.85
.012	A	4.74	2.85	B	4.74	2.85
.015	A	4.79	2.87	B	4.74	2.85
.018	A	4.83	2.89	C	4.79	2.87
.022	A	4.87	2.93	C	4.83	2.89
.027	A	4.99	2.99	D	4.87	2.93
.033	A	5.12	3.07	D	4.91	2.95
.039	A	5.24	3.15	O	4.95	2.97
.047	A	5.32	3.19	O	4.99	2.99
.056	A	5.45	3.27	E	5.07	3.05
.068	B	5.53	3.32	E	5.20	3.12
.082	B	5.78	3.47	P	5.28	3.17
.10	B	5.90	3.54	P	5.37	3.22
.12	B	6.11	3.66	F	5.49	3.29
.15	C	6.36	3.82	F	5.65	3.39
.18	C	6.60	3.96	Q	5.82	3.49
.22	D	6.81	4.08	H	6.03	3.73
.27	D	7.14	4.28	H	6.27	3.76
.33	E	7.38	4.43	I	6.48	3.88
.39	E	7.71	4.63	J	6.69	4.02
.47	E	8.01	4.81	J	6.85	4.11
.56	E	8.37	5.03	K	7.14	4.28
.68	F	8.54	5.13	K	7.38	4.43
.82	F	9.08	5.45	L	7.68	4.61
1.00	G	9.57	5.74	M	8.01	4.81
1.25	H	9.90	5.94	M	8.46	5.07
1.50	H	10.23	6.14	R	8.67	5.20
2.00	I	10.89	6.53	S	9.41	5.64
3.00	J	12.17	7.30	T	10.68	6.41
4.00	K	13.20	7.92	U	11.80	7.08
5.00	L	14.44	8.67	V	13.16	7.90
8.00	M	17.74	10.65	W	16.59	9.96
10.00	N	19.59	11.76	X	18.60	11.17

*CASE SIZES

Case	Size, Inches Dia. x L.	Case	Size, Inches Dia. x L.
A	.175 x 9/16	M	.562 x 1 5/16
B	.175 x 5/8	N	.670 x 1 5/16
C	.195 x 5/8	O	.235 x 1 1/16
D	.235 x 5/8	P	.312 x 1 1/16
E	.312 x 5/8	Q	.400 x 1 1/16
F	.312 x 1 3/16	R	.562 x 1 9/16
G	.312 x 1 5/16	S	.670 x 1 9/16
H	.400 x 1 3/16	T	.670 x 1 13/16
I	.400 x 1 5/16	U	.750 x 1 13/16
J	.400 x 1 1/16	V	.750 x 2 5/16
K	.500 x 1 1/16	W	1.000 x 2 1/16
L	.562 x 1 1/16	X	1.000 x 2 9/16



TYPE X440 PRINTED CIRCUIT MICROMINIATURE METALLIZED POLYCARBONATE CAPACITORS

Specifically designed for fitting components in today's miniaturized designs. Metallized polycarbonate dielectric, non-inductive winding. Epoxy case with standoffs; radial leads 24 gauge tinned solid wire on 0.2" centers. Life test and humidity resistance meet MIL-C-27287. **Voltage Rating:** 50 VDC from −55° C to +125° C. **TC:** −150 ppm/° C. **Tolerance:** ±10%; other tolerances available. Maximum size, .290" w. x .145" d. x .320" h.

Cap. µF	Net Each, Lots of 1-24	25-49	50-99*
.0010, .0012	$2.81	$1.68	$1.22
.0015, .0018	2.81	1.68	1.22
.0022	2.81	1.68	1.22
.0027	2.85	1.71	1.24
.0033	2.85	1.71	1.24
.0039	3.01	1.80	1.31
.0047, .0056	3.01	1.80	1.31
.0068, .0082	3.01	1.80	1.31
.010	3.01	1.80	1.31
.012	3.06	1.84	1.33
.015, .018	3.09	1.86	1.34
.022	3.09	1.86	1.34
.027, .033	3.14	1.88	1.36
.039	3.14	1.88	1.36
.047	3.18	1.90	1.39
.056	3.39	2.04	1.47
.068, .082	3.42	2.06	1.49
.100	3.67	2.20	1.60

TYPE 463UW SUBMINIATURE FOIL-WOUND POLYCARBONATE CAPACITORS

Well suited for computer and timing circuits at temperatures from −55° C to +125° C. **Life Test:** 250 hours at +125° C and 140% of rated voltage. **Dissipation Factor:** Less than 20% at 1 kHz 25° C. **Tolerances:** Units shown ±10%; ±20%, ±5% to ±1% available on request.

Cap., µF	50 WVDC, Net Each 1-24	25-49	50-99*
.01	$0.95	$0.57	$0.42
.012	.95	.57	.42
.015	.99	.59	.43
.018	1.03	.62	.45
.022	1.03	.62	.45
.027	1.16	.69	.51
.033	1.16	.69	.51
.039	1.16	.69	.51
.047	1.20	.72	.52
.056	1.24	.75	.54
.068	1.36	.81	.59
.082	1.44	.87	.63
.1	1.49	.89	.65
.12	1.61	.97	.70
.15	1.69	1.01	.74
.18	1.69	1.01	.74
.22	1.77	1.07	.77
.27	1.77	1.07	.77
.33	1.90	1.14	.83
.39	1.98	1.19	.86
.47	2.15	1.29	.94
.56	2.40	1.44	1.05
.68	2.43	1.46	1.06
.82	2.52	1.51	1.10
1.0	2.73	1.64	1.19
1.25	2.93	1.76	1.28
1.50	3.34	2.00	1.45
1.80	3.75	2.26	1.63
2.00	3.96	2.38	1.73

TYPE X463UW ULTRA-MINIATURE METALLIZED POLYCARBONATE CAPACITORS

Small size, lightweight, low dielectric absorption and extremely high insulation resistance for use in portable and airborne equipment as well as in precision test equipment. **Insulation Resistance:** 6,000 megohms-µF, 85° C but need not exceed 50,000 megohms. **Tolerance:** ±10%.

Cap., µF	50 WVDC 1-24	50 WVDC 25-49*	200 WVDC 1-24	200 WVDC 25-49*
.01	$ 2.40	$ 1.44	$ 1.80	$ 1.08
.012	2.40	1.44	1.80	1.08
.015	2.40	1.44	1.80	1.08
.018	2.40	1.44	1.80	1.08
.022	2.44	1.46	1.88	1.13
.027	2.44	1.46	1.88	1.13
.033	2.44	1.46	1.91	1.15
.039	2.44	1.46	1.95	1.17
.047	2.44	1.46	2.03	1.22
.056	2.48	1.49	2.03	1.22
.068	2.48	1.49	2.03	1.22
.082	2.48	1.49	2.06	1.24
.1	2.49	1.51	2.10	1.26
.12	2.63	1.58	2.14	1.28
.15	2.68	1.61	2.21	1.33
.18	2.78	1.67	2.29	1.37
.22	2.85	1.71	2.36	1.42
.27	3.04	1.82	2.48	1.49
.33	3.08	1.85	2.63	1.58
.39	3.26	1.96	2.70	1.62
.47	3.49	2.09	3.00	1.80
.56	3.71	2.23	3.08	1.85
.68	4.01	2.41	3.26	1.96
.82	4.31	2.59	3.49	2.09
1.0	4.69	2.81	3.83	2.30
1.25	5.12	3.07	4.31	2.59
1.50	5.78	3.47	4.76	2.86
1.80	6.34	3.80	5.33	3.20
2.00	6.75	4.05	5.70	3.42
3.00	8.87	5.32	7.43	4.46
4.00	10.94	6.56	9.08	5.45
5.00	12.26	7.35	10.39	6.23
8.00	16.42	9.86	14.48	8.69
10.00	17.82	10.69	17.33	10.40

TYPE 608 "MICROLAR" FOIL-WOUND MICRO-MINIATURE CAPACITORS

Ideal for use in potted or extremely precise assemblies; designed for use in "cordwood" packaging and other high density circuitry. **Tolerances:** ±10% standard; ±20%, ±5% and ±1% available on request. **Humidity Resistance:** Exceeds MIL-C-27287, paragraph 3.12. **Temperature Range:** −55° C to +85° C; to 125° C with 50% derating.

Cap., µF	100 WVDC, Net Each 1-24	25-49	50-99*
.001	$2.14	$1.28	$0.93
.0012	2.21	1.33	.96
.0015	2.21	1.33	.96
.0018	2.25	1.35	.98
.0022	2.25	1.35	.98
.0027	2.29	1.37	1.00
.0033	2.29	1.37	1.00
.0039	2.40	1.44	1.04
.0047	2.40	1.44	1.04
.0056	2.44	1.46	1.06
.0068	2.44	1.46	1.06
.0082	2.48	1.49	1.08
.01	2.48	1.49	1.08
.012	2.49	1.51	1.09
.015	2.49	1.51	1.09
.022	2.49	1.51	1.09
.027	2.59	1.55	1.13
.033	2.59	1.55	1.13
.039	2.63	1.58	1.14
.047	2.63	1.58	1.14
.056	2.78	1.67	1.21
.068	2.89	1.73	1.26
.082	3.04	1.82	1.32
.1	3.06	1.83	1.33

★WRITE FOR PRICES ON LARGER QUANTITIES

CAMBRIDGE THERMIONIC CORPORATION

CAMBION® COILS AND COIL FORMS

CERAMIC, PHENOLIC, MOLDED AND SHIELDED ASSEMBLY COIL FORMS

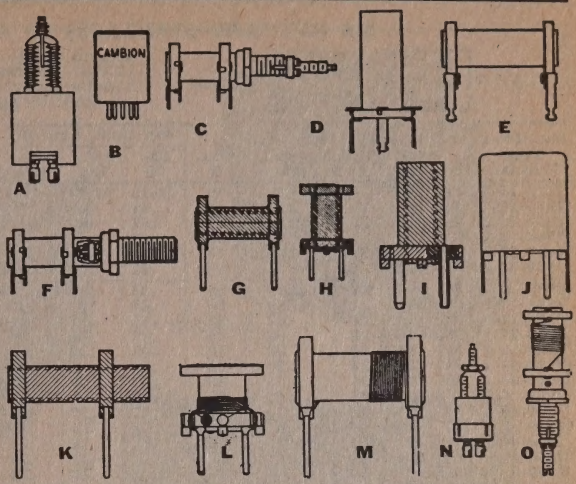
Cambion Basic Part No.	Suffix* No. 1	Suffix* No. 2	Description	Fig.	Net Each, Lots of 1-9	10-99	100-499	500-999	1000-2499
1150	†	-1/5		A	$2.75	$2.37	$2.20	$1.95	....
1155	†	-1/5		A	2.87	2.47	2.30	2.04	....
1160	†	-1/3	Shielded	A	2.42	2.08	1.94	1.72	....
1165	†	-1/5	assembly	A	2.75	2.37	2.20	1.95	....
1181	#	-3/4		B	3.20	2.75	2.56	2.27	....
1187	†	-3/4		B	2.20	1.89	1.76	1.56	....
1189	†	-3/4		B	3.70	3.20	2.69	2.63	....
1531‡	-1/7	-1		C	.....	1.11	.95	.83	.75
1531‡	-1/7	-2/3		C	.....	1.40	1.20	1.05	.95
1531‡	-1/7	-4/5		C	.....	1.25	1.07	.94	.85
1532	-1/7	-1		C	.....	1.03	.89	.77	.70
1532	-1/7	-2/3		C	.....	1.33	1.14	1.00	.90
1532	-1/7	-4/5		C	.....	1.18	1.02	.89	.80
1534	-1/7	-1	Ceramic	C	.....	1.28	1.09	.96	.87
1534	-1/7	-2/3	coil	C	.....	1.69	1.45	1.27	1.15
1534	-1/7	-4/5	form	C	.....	1.50	1.28	1.12	1.01
1535‡	-1/7	-1		C	.....	1.16	.99	.87	.79
1535‡	-1/7	-2/3		C	.....	1.45	1.25	1.09	.99
1535‡	-1/7	-4/5		C	.....	1.30	1.12	.98	.88
1536	-1/7	-1		C	.....	1.11	.95	.83	.75
1536	-1/7	-2/3		C	.....	1.40	1.20	1.05	.95
1536	-1/7	-4/5		C	.....	1.25	1.07	.94	.85
2173‡	-1/7	-1/3	Phenolic PC	D	.....	.55	.47	.41	.37
2175‡	-1/7	-1/2		D	.....	.62	.53	.47	.42
2175‡	-1/7	-3/5	Ceramic	D	.....	.64	.55	.48	.43
2270‡	-1/7	§	PC	E	.....	1.25	1.07	.94	.85
2271‡	-1/7	§		E	.....	1.42	1.22	1.06	.96
2770	-1/7	-1	Ceramic	F	.....	1.71	1.47	1.29	1.16
2770	-1/7	-2/3	Stud	F	.....	2.02	1.74	1.52	1.37
2770	-1/7	-4/5		F	.....	1.88	1.61	1.41	1.28
3104‡	-1/7	§	Molded Diallyl	G	.....	1.74	1.49	1.30	1.18
3602‡	-1/7	....	3623 w/ holl. pin	H	.....	1.74	1.49	1.30	1.18
3603‡	-1/7	....	3624 w/ holl. pin	H	.....	1.76	1.51	1.32	1.20
3609‡	-1/9	....	Hor. PC polyest. .240" winding	K	.....	1.76	1.51	1.32	1.20
3613‡	-1/7	...	3602; no top flg. .335" h.	I	.....	1.74	1.49	1.30	1.18
3614‡	-1/7	....	Same, .480" h.	I	.....	1.76	1.51	1.32	1.20
3618‡	-1/7	....	3613 w/ solid .025 pin	I	.....	1.74	1.49	1.30	1.18
3619‡	-1/7	....	3614 w/ solid .025 pin	I	.....	1.76	1.51	1.32	1.20
3623‡	-1/7	....	Molded	H	.....	1.74	1.49	1.30	1.18
3624‡	-1/7	....	polypro.	H	.....	1.76	1.51	1.32	1.20
3651	†	....	PC shld. polypro. .325" h.	J	2.31	1.99	1.85	1.64	....
3652	†	....	.480" h.	J	2.27	1.95	1.82	1.61	....
3706‡	-1/7	....	3618 but polyest.	I	.....	1.28	1.09	.96	.87
3707‡	-1/7	....	3619 but polyest.	I	.....	1.30	1.12	.98	.88
3742	†	....	PC shld. polyest. .325" h.	J	1.89	1.63	1.51	1.34	....
3743	†	....	.480" h.	J	1.94	1.67	1.55	1.38	....
3744‡	-1/9	....	3609 w/ .340" winding	K	.....	1.76	1.51	1.32	1.20
4460	-1/7	...	5-pin 3624	H	.....	1.81	1.56	1.36	1.23
4461	-1/7	...	5-pin 3614	I	.....	1.81	1.56	1.36	1.23
4462	†	...	5-pin shld. assy. w/ 4461 form	J	2.61	2.24	2.09	1.85	....

*ORDERING INSTRUCTION CHART

Order by Basic Part No. followed by desired suffix no. 1 (for frequency range) and suffix no. 2 (for terminal and collar or terminal board type) selected from the following chart: 1531-3-2 for 1531 form with 20-50 MHz slug and with 2 collars with 2 terminals each.

SUFFIX NO. 1			SUFFIX NO. 2		
Dash No.	Slug Color	Freq. Range, MHz	Dash No.	Terminal-Collar Locations	Type Term. Bd. (Shielded Forms)
-1	Yellow	.2–1.5	-1	2 ring terminals	2 term. bd.
-2	Red	1–20	-2	2 collars—2 term. ea.	3 term. bd.
-3	Green	20–50	-3	2 collars—1 term. ea.	4 term. bd.
-4	White	50–200	-4	1 top collar—2 term.	5 term. bd.
-5	Black	100 up	-5	1 bot. collar—2 term.	6 term. bd.
-6	Purple	2–50			
-7	Blue	40–300			
-8	Orange	.1–4.5			
-9	Gray	4.5–15.0			

Suffix No. 1: Dash numbers on these shielded forms available only †-1 thru -4, -6 and -7; #-1 thru -4, -6 thru -9. ‡These part numbers **available without slug.** Specify by ordering with -0 for suffix 1. §No final suffix (Suffix No. 2) required on these types.



CAMBION supplies both variable and fixed inductance coils, wound on ceramic or molded forms, or supplied in electromagnetic and electrostatic shielded housings. This listing comprises the more popular items. Ask for complete catalog or for further information if you do not see what you want listed. Variable inductance ranges are supplied in standard EIA 10% overlapping incrementals, within overall ranges shown. Order by part and dash number or specify inductance range wanted if you do not know correct dash number.

STANDARD COILS

Cambion Part Number	Fig.	Inductance Range, μH Min.	Inductance Range, μH Max.	Net Each, Lots of 1-9	10-99	100-499
1505-1/-4*	N	.55	8.3	$6.65	$5.00	$4.45
1505-5/-6*	N	7.8	33.0	7.15	5.35	4.80
1505-7/-10*	N	30.0	1000.0	6.50	4.90	4.35
1506-1/-2*	N	1.0#	4.7#	7.15	5.35	4.80
1506-3/-5*	N	4.5#	40.0#	7.80	5.85	5.25
1507-1/-7*	N	.11	8.1	6.50	4.90	4.35
2060-1/-2†	O	2.0	7.0	3.00	2.25	2.01
2060-3/-4†	O	6.5	18.0	3.25	2.44	2.18
2060-5†	O	16.0	30.0	3.50	2.63	2.35
2060-6†	O	28.0	63.0	3.80	2.85	2.55
2060-7†	O	61.0	122.0	4.00	3.00	2.68
2060-8†	O	120.0	243.0	4.35	3.25	2.91
2060-9/-10†	O	238.0	800.0	4.75	3.55	3.20
3387-1/-34*	J	1.27	39.5#	5.60	4.20	3.75
3387-35/-37*	J	47.0#	120.0#	6.60	4.95	4.40
3642-1/-32†	O	.090	45.5	4.60	3.45	3.10
3642-33/-41†	O	39.0	255.0	4.70	3.55	3.15
3642-42/-49†	O	224.0	1170.0	5.05	3.80	3.40
7105-1/-25‡	L	.090	2.97	3.40	2.55	2.28
7105-26/-36‡	L	2.97	31.5	3.65	2.74	2.45
7105-37/-58‡	L	31.4	254.0	3.75	2.81	2.51
7105-59/-73‡	L	254.0	1050.0	3.85	2.89	2.58
7107-1/-25*	J	.090	11.0	3.40	2.55	2.28
7107-26/-49*	J	12.0	1100.0	4.00	3.00	2.68
7120-1/-61§	M	.095	11000.0	4.70	3.55	3.15

*Shielded. †Ceramic form. ‡Molded polypropylene/diallyl form. #mH. §Molded diallyl form.

MICRO-MINIATURE INDUCTORS

Fixed and variable inductors designed for substrate compatibility. Epoxy encapsulated except 1072 and 1199 Series are shielded.

Cambion Part Number	Illus.	Size, Inches	Min.-Max. Inductance Range, μH	Net Ea., Lots of 1-9	10-99	100-499
1050-1/-5		.080 dia. x .188	0.06–3.9 3.5–95.0 90.0–2000.0	$4.00 4.60 5.30	$3.00 3.45 4.00	$2.68 3.10 3.55
1050-6/-8						
1050-9/-10						
1056-1/-13		.260 x .160 x .100	.07–13.0 12.0–1300.0	10.30 15.40	7.75 11.60	6.90 10.30
1056-14/-25						
1052-1/-8		.100 x .160 x .125*	0.1–95.0 90.0–2000.0	7.45 8.20	5.60 6.15	5.00 5.50
1052-9/-10						
1053-1/-32		.090 x .160 x .125*	0.1–1000.0 fixed	7.00 7.45 7.60	5.25 5.60 5.70	4.70 5.00 5.10
1053-33/-44						
1053-45/-49						
1054-1/-24		.075 dia. x .170	0.10–3300.0 fixed	4.00 4.60 4.80 5.30	3.00 3.45 3.60 4.00	2.68 3.10 3.20 3.55
1054-25/-37						
1054-38/-48						
1054-49/-55						
1072-1/-12		.125 x .155 x .125	0.1–10,000.0 fixed	7.80 8.40 9.00	5.85 6.30 6.75	5.25 5.65 6.05
1072-13/-44						
1072-45/-73						
1199-1/-10		.344 x .344 x .270	0.8–3.9 3.9–120.0 120.0–1200.0	4.40 4.70 5.40	3.30 3.55 4.05	2.95 3.15 3.60
1199-11/-19						
1199-20/-25						

*1052-7/-10 and 1053-38/-49 size .125" x .160" x .125".

SEND FOR COMPLETE CAMBION CATALOG FOR FULL DATA ON ALL CAMBION PRODUCTS

MS (MILITARY STANDARD) RF MOLDED CHOKES—QPL APPROVED

Molded epoxy, type LT4K chokes, conforming to MS spec indicated, per MIL-C-15305C. Tolerance (suffix -2, ±10%; suffix -3, ±20%) is as called out by MS spec. Popular ratings only listed. **All** MS nos. are available under each series. Order items not listed by applicable MS number. **Minimum standard package, 25 pieces.**

Cambion Type Number	Military Standard Number	Inductance μH	Min. Q	Net Each, Lots of 10-99	100-499	500-999
2950-14-2	MS 91189-14	1.2	60	$0.69	$0.42	$0.32
2950-17-2	MS 91189-17	2.2	60	.69	.42	.32
2950-29-2	MS 91189-29	22.0	50	.82	.49	.37
2950-33-2	MS 91189-33	47.0	65	.82	.49	.37
2950-37-2	MS 91189-37	100.0	75	.82	.49	.37
2950-38-2	MS 91189-38	120.0	95	.82	.49	.37
2960-21-3	MS 75008-21	.15	55	.65	.39	.30
2960-22-3	MS 75008-22	.22	50	.65	.39	.30
2960-24-3	MS 75008-24	.47	50	.65	.39	.30
2960-26-2	MS 75008-26	.68	45	.63	.38	.29
2960-28-2	MS 75008-28	1.00	40	.63	.38	.29
2960-32-2	MS 75008-32	2.20	30	.63	.38	.29
2960-34-2	MS 75008-34	3.30	30	.63	.38	.29
2960-36-2	MS 75008-36	4.70	30	.63	.38	.29
2960-37-2	MS 75008-37	5.60	30	.63	.38	.29
2960-38-2	MS 75008-38	6.8	30	.63	.38	.29
2960-40-2	MS 75008-40	10.0	30	.63	.38	.29
2960-41-2	MS 75008-41	12.0	50	.63	.38	.29
2960-44-2	MS 75008-44	22.0	60	.63	.38	.29
3640-1-3	MS 18130-1	.15	50	.57	.34	.26
3640-5-3	MS 18130-2	.22	50	.57	.34	.26

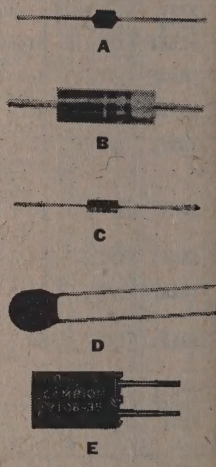
Cambion Type Number	Military Standard Number	Inductance μH	Min. Q	Net Each, Lots of 10-99	100-499	500-999
3640-9-3	MS 18130-3	.33	45	$0.57	$0.34	$0.26
3640-13-3	MS 18130-4	.47	45	.57	.34	.26
3640-21-2	MS 18130-8	1.00	50	.63	.38	.29
3640-23-2	MS 18130-9	1.20	33	.63	.38	.29
3640-25-2	MS 18130-10	1.50	33	.63	.38	.29
3640-27-2	MS 18130-11	1.80	33	.63	.38	.29
3640-29-2	MS 18130-12	2.20	33	.63	.38	.29
3640-31-2	MS 18130-13	2.70	33	.63	.38	.29
3640-33-2	MS 18130-14	3.30	33	.63	.38	.29
3640-35-2	MS 18130-15	3.90	33	.63	.38	.29
3640-39-2	MS 18130-17	5.60	45	.63	.38	.29
3640-45-2	MS 18130-20	10.0	55	.63	.38	.29
3640-47-2	MS 18130-21	12.0	65	.63	.38	.29
3640-53-2	MS 18130-24	22.0	75	.63	.38	.29
3640-57-2	MS 18130-26	33.0	65	.73	.44	.33
3710-3-2	MS 75052-3	68.0	70	.67	.40	.30
3710-5-2	MS 75052-5	100.0	65	.90	.54	.41
3711-2-2	MS 75053-2	220.0	80	.95	.57	.43
3712-1-2	MS 75054-1	470.0	80	.95	.57	.43
3712-4-2	MS 75054-4	820.0	75	1.01	.60	.46
3712-5-2	MS 75054-5	1000.0	70	1.01	.60	.46

OTHER CHOKES

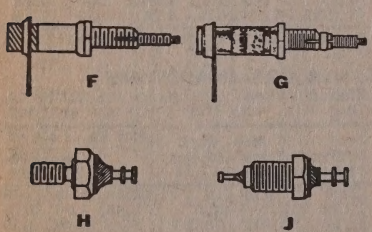
Order by CAMBION or MS Part and Dash No. If correct dash no. not known, state inductance rating desired. **Minimum standard package, 25 pieces.**

Cambion Part Number	Fig.	Size, Inches	Description	Min.-Max. Inductance Range, μH	Net Each, Lots of 10-99	100-499	500-999
3115-1/-2	A	.188 dia.	VHF encapsulated	.09–.40	$0.62	$0.56	$0.52
3115-3/-4	A	x .625		.62–.80	.84	.75	.71
3201-1/-12	B	.180 dia.	MS 75087-1/-12*	.10–.82	1.17	1.05	.98
3201-13/-26	B	x .395	MS 75088-1/-14*	1.0–12.0	1.17	1.05	.98
3201-27/-37	B		MS 75089-1/-11*	15.0–100.0	1.17	1.05	.98
3201-38/-65	B		MS 75089-12/-39*	120.0–22,000.0	2.25	2.01	1.89
3201-66/-73	B		MS 75089-40/-47*	27,000.0–100,000.0	2.63	2.35	2.21
3399-1/-13	C	.095 dia.	MS 75083-1/-13†	.10–1.0	.95	.57	.43
3399-14/-30	C	x .250	MS 75084-1/-17†	1.2–27.0	1.67	1.00	.76
3399-31/-40	C		MS 75085-1/-10†	33.0–180.0	1.94	1.16	.88
3399-41/-49	C		MS 75085-11/-49†	220.0–1000.0	2.06	1.24	.94
3628-1/-21	§	.155 dia. x .375	MS 95038-1/-21†	36.0–240.0	1.40	.84	.64
3635-1/-13	D	.375 dia.	Encapsulated/	1.0–10.0	1.47	1.31	1.23
3635-14/-35	D	x .375	shielded	12.0–680.0	1.72	1.53	1.44
3635-36/-48	D			820.0–8.2‡	1.96	1.75	1.64
3635-49/-61	D			10.0‡–100.0‡	2.18	1.94	1.83
7108-1/-25	E	.125 x	Molded	.10–10.0	1.16	1.03	.97
7108-26/-30	E	.228 x		12.0–27.0	1.57	1.40	1.32
7108-31/-49	E	.365		33.0–1000.0	1.88	1.68	1.58

*Conform to electrical parameters of MS specification indicated. CAMBION mechanical design provides slightly larger case (dia.) to provide more reliable unit. †Conform to MS specification indicated and to MIL-C-15305. Qualification in process. ‡mH. §Similar to MS Series 3640, above.



FIXED AND VARIABLE CAPACITORS



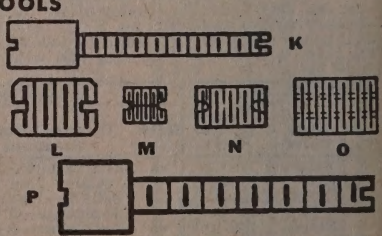
Fixed and variable; feed thru and standoff types in both glass and ceramic.

Cambion Type Number	Fig.	Description	Capacitance pF	Net Each, Lots of 1-9	10-99	100-499
1869-1	F	Variable, glass	.85–7.0	$4.80	$3.60	$3.20
2068-01†	G	Variable, ceramic	.5–4.5	.....	2.09	1.87
2069-01‡	G	Variable, ceramic	.5–4.5	.....	2.09	1.87
2098-01*	G	Variable, ceramic	1.0–8.0	.....	2.16	1.93
3251-25-1	H	Fixed, ceramic, standoff	100	.....	1.34	1.19
3252-37-2	H	Fixed, ceramic, standoff	1000	.....	1.25	1.12
3252-39-2	H	Fixed, ceramic, standoff	1500	.....	1.25	1.12
3265-37-2	J	Fixed, ceramic, feed thru	1000	.....	1.91	1.70

Formerly Cambion Type No.: *CS6-6; †CST-6; ‡PCST-6.

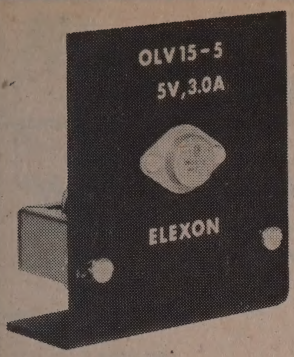
TUNING SLUGS, CORES AND TUNING TOOLS

Cambion Type Number	Fig.	Material	Color	Frequency MHz	Net Each, Lots of 10-99	100-499	500-999	1000-2499
3225-02-21	M	Powdered iron	Red	1.0– 20.0	$0.08	$0.07	$0.06	$0.05
3225-03-21	M	Powdered iron	Green	20.0– 50.0	.08	.07	.06	.05
3225-04-21	M	Powdered iron	White	50.0–200.0	.08	.07	.06	.05
3226-02-21	N	Powdered iron	Red	1.0– 20.0	.08	.07	.06	.05
3226-03-21	N	Powdered iron	Green	20.0– 50.0	.08	.07	.06	.05
3226-04-21	N	Powdered iron	White	50.0–200.0	.08	.07	.06	.05
3227-02-21	O	Powdered iron	Red	1.0– 20.0	.12	.10	.09	.07
3227-03-21	O	Powdered iron	Green	20.0– 50.0	.12	.10	.09	.07
3227-04-21	O	Powdered iron	White	50.0–200.0	.12	.10	.09	.07
2063-02-07	P	Powdered iron	Red	1.0– 20.0	.29	.24	.21	.19
2063-05-07	P	Powdered iron	Red	1.0– 20.0	.29	.24	.21	.19
2063-07-07	P	Powdered iron	White	50.0–200.0	.29	.24	.21	.19
2063-08-07	P	Powdered iron	Red	1.0– 20.0	.29	.24	.21	.19
2063-15-07	P	Powdered iron	Green	20.0– 50.0	.29	.24	.21	.19
2063-19-07	P	Powdered iron	Red	1.0– 20.0	.29	.24	.21	.19

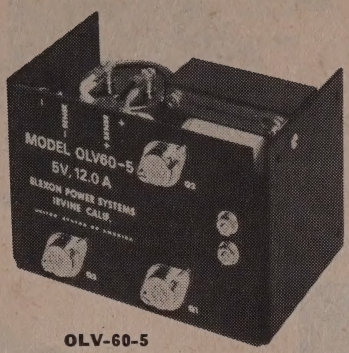


Tuning tools with paper phenolic handle.

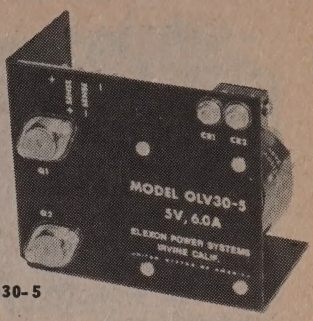
Cambion Type No.	Tip	Overall Length	Net Each
1971-1	Brass	4 3/16"	$1.06
2033-1	Brass	4"	1.06
2230-1	Nylon	4 3/16"	1.35
2375-1	Brass	4"	1.06



OLV-15-5



OLV-60-5



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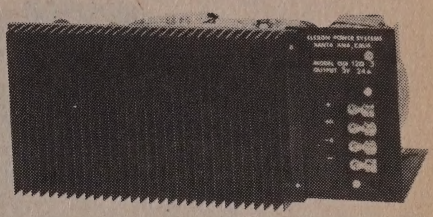

OLV-120-5

SERIES OLV ECONOMY GRADE POWER SUPPLIES

Economy grade all-silicon DC power supplies include integrated circuit regulator for precision regulation. Open frame construction, black anodized chassis. Power connections made via solder terminals. Standard features include short circuit protection, electrostatically shielded transformer, and remote voltage sensing. Floating output permits positive or negative operation. Can also be operated on 50–60 Hz (optional on series OLV-15). **Input Voltage:** 120/240 VAC, 10% single phase, 50–60 Hz (optional on series OLV-15). **Output Regulation:** .1% for line variation of 10%; .1% for 0 to full load. **Noise and Ripple:** Less than .1%. **Output Voltage Adjustment:** 5% at full load. **Temperature Range:** 0–55° C ambient operating temperature. Optional adjustable overvoltage crowbar available.

SPECIFICATIONS

Input Voltage: 120/240 VAC, 10% single phase, 50–60 Hz (optional on series OLV-15).

Output Regulation: .1% for line variation of 10%; .1% for 0 to full load.

Noise and Ripple: Less than .1% peak to peak.

Output Voltage Adjustment: 5% at full load.

Temperature Range: 0–55° C ambient operating temperature.

SERIES OLV-15 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
OLV-15-5	5	3	4 x 4½ x 2¾	$29.00	$27.00	$26.00	$24.00	$23.00
OLV-15-12	12	1.5	4 x 4½ x 2¾	29.00	27.00	26.00	24.00	23.00
OLV-15-15	15	1.2	4 x 4½ x 2¾	29.00	27.00	26.00	24.00	23.00
OLV-15-18	18	1	4 x 4½ x 2¾	29.00	27.00	26.00	24.00	23.00
OLV-15-24	24	0.75	4 x 4½ x 2¾	29.00	27.00	26.00	24.00	23.00

SERIES OLV-30 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
OLV-30-5	5	6	4⅞ x 5¾ x 3⅝	$49.00	$48.00	$46.00	$44.00	$42.00
OLV-30-12	12	4	4⅞ x 5¾ x 3⅝	49.00	48.00	46.00	44.00	42.00
OLV-30-15	15	3.3	4⅞ x 5¾ x 3⅝	49.00	48.00	46.00	44.00	42.00
OLV-30-18	18	2.6	4⅞ x 5¾ x 3⅝	49.00	48.00	46.00	44.00	42.00
OLV-30-24	24	2	4⅞ x 5¾ x 3⅝	49.00	48.00	46.00	44.00	42.00

SERIES OLV-60 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
OLV-60-5	5	12	4¾ x 4⅜ x 7	$79.00	$75.00	$72.00	$68.00	$64.00
OLV-60-12	12	8	4¾ x 4⅜ x 7	79.00	75.00	72.00	68.00	64.00
OLV-60-24	24	4	4¾ x 4⅜ x 7	79.00	75.00	72.00	68.00	64.00

SERIES OLV-90 POWER SUPPLIES

Elexon Number	Output Volts	Output Amp	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
OLV-90-5	5	18	5 x 4.75 x 11.25	$107.00	$102.00	$97.00	$91.00	$87.00

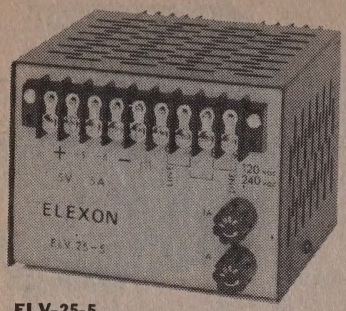
SERIES OLV-120 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
OLV-120-5	5	24	5⅜ x 6¼ x 13	$135.00	$129.00	$122.00	$116.00	$110.00
OLV-120-12	12	16	5⅜ x 6¼ x 13	135.00	129.00	122.00	116.00	110.00
OLV-120-15	15	13.2	5⅜ x 6¼ x 13	135.00	129.00	122.00	116.00	110.00

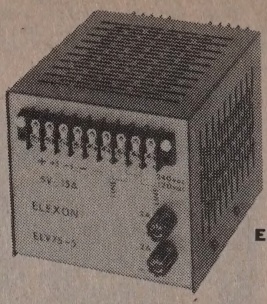
OPTIONAL ACCESSORIES

Elexon Number	Description	Net Each	Elexon Number	Description	Net Each
ovp-1	For series OLV-15, -30	$7.00	ovp-3	For series OLV-90, 120	$12.00
ovp-2	For series OLV-60	9.00	Optional 50 Hz	For series OLV-15	2.00

ELEXON OFFERS VOLTAGES IN ALL MODELS FROM 4 V TO 28 V. ADDITIONALLY, ELEXON OFFERS THE OLV SERIES (EXCEPT THE OLV-15 MODEL) IN A COVERED CONFIGURATION CALLED THE XLV SERIES, PLUS DUAL AND TRIPLE OUTPUT POWER SUPPLIES.



ELV-25-5



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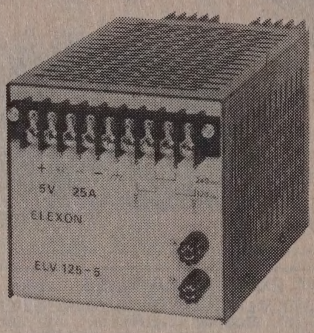
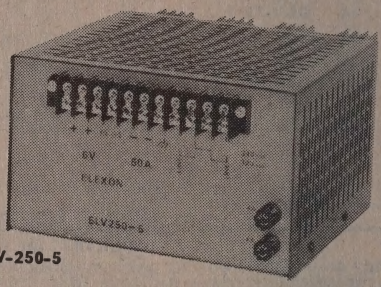


ELV-125-5



ELV-250-5

SERIES ELV COMPUTER GRADE POWER SUPPLIES

Reliable source of regulated DC voltage for commercial, industrial, research, educational and service applications. Smooth action controls permit adjustment to exacting requirements. Computer grade all-silicon solid state DC power supplies include integrated circuit regulators for precision regulation. Fully enclosed, ventilated black and gold anodized aluminum case. Power connections made by means of barrier strip terminals. Standard features include short circuit protection; adjustable overvoltage crowbar protection; and remote voltage sensing. Floating output permits either positive or negative terminal to be grounded. **Input Voltage:** 120 or 240 VAC, ± 10%, single phase, 47 to 420 Hz. **Output Regulation:** .1% for line variation of 10%; .1% for 0 to full load. **Noise and Ripple:** Less than .1%. **Output Voltage Adjustment:** 5% at full load; electrostatic shielded transformer. **Temperature Range:** 0–55° C ambient operating; no additional cooling required.

SPECIFICATIONS

Input Voltage: 120/240 VAC, ± 10%, single phase, 47 to 420 Hz.
Output Regulation: .1% for line variation of 10%; .1% for 0 to full load.
Noise and Ripple: Less than .1% peak to peak.
Output Voltage Adjustment: 5% at full load.
Temperature Range: 0–55° C ambient operating temperature.

SERIES ELV-25 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
ELV-25-5 ovp	5	5	4 x 5½ x 6½	$93.00	$89.00	$84.00	$79.00	$74.00
ELV-25-12 ovp	12	3	4 x 5½ x 6½	93.00	89.00	84.00	79.00	74.00
ELV-25-18 ovp	18	2	4 x 5½ x 6½	93.00	89.00	84.00	79.00	74.00
ELV-25-24 ovp	24	1.5	4 x 5½ x 6½	93.00	89.00	84.00	79.00	74.00

SERIES ELV-75 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
ELV-75-5 ovp	5	15	5⅛ x 5¾ x 8	$119.00	$115.00	$109.00	$99.00	$94.00
ELV-75-12 ovp	12	7	5⅛ x 5¾ x 8	119.00	115.00	109.00	99.00	94.00
ELV-75-18 ovp	18	5	5⅛ x 5¾ x 8	119.00	115.00	109.00	99.00	94.00
ELV-75-24 ovp	24	4	5⅛ x 5¾ x 8	119.00	115.00	109.00	99.00	94.00

SERIES ELV-125 POWER SUPPLIES

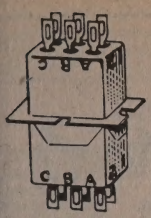
Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
ELV-125-5 ovp	5	25	6 x 6½ x 11	$165.00	$157.00	$149.00	$136.00	$129.00
ELV-125-12 ovp	12	12	6 x 6½ x 11	165.00	157.00	149.00	136.00	129.00
ELV-125-18 ovp	18	8	6 x 6½ x 11	165.00	157.00	149.00	136.00	129.00
ELV-125-24 ovp	24	6	6 x 6½ x 11	165.00	157.00	149.00	136.00	129.00

SERIES ELV-250 POWER SUPPLIES

Elexon Number	Output Volts	Output Amps	Dimensions, Inches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99
ELV-250-5 ovp	5	50	6 x 10½ x 11	$235.00	$225.00	$215.00	$205.00	$195.00
ELV-250-12 ovp	12	20	6 x 10½ x 11	235.00	225.00	215.00	205.00	195.00
ELV-250-18 ovp	18	14	6 x 10½ x 11	235.00	225.00	215.00	205.00	195.00
ELV-250-24 ovp	24	10.4	6 x 10½ x 11	235.00	225.00	215.00	205.00	195.00

ELEXON OFFERS 11 OTHER MODELS OF EACH SERIES WITH VOLTAGES FROM 4 TO 28 VOLTS. WRITE FOR COMPLETE INFORMATION AND PRICING.

ERIE Electronic Filters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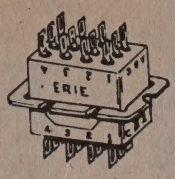
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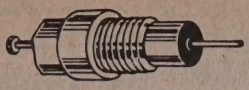
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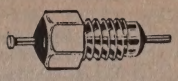
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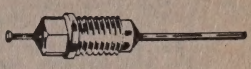
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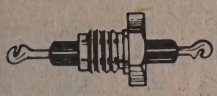
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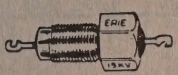
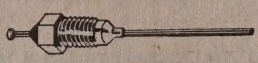
1214-001



1202 Series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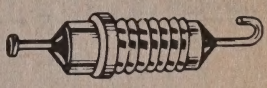

1221-001

SUBMINIATURE LOW-PASS FILTERS FOR EMI SUPPRESSION

Erie Filtercons are high-frequency low-pass RF filters designed to provide maximum effective attenuation in the UHF range, eliminating parallel resonance peaks. Performance superior to standard tubular feed-thru capacitors at frequencies above 100 MHz. Erie Broad-Band EMI Suppression Filters are miniaturized L-section types for use in low-voltage circuits; suppress interference caused by switches, relays, etc. over an extremely wide frequency range. For both filters and broadband types, minimum insertion loss figures are per MIL-STD-220 for a temperature range of −55° C to +125° C unless otherwise noted.

SERIES 1206 AND 1212 MULTI-SECTION FILTERS

Miniature multiple-channel filters. Elements are soldered into silver-plated brass case with hermetically sealed low-loss glass end-seals. Cross-channel separation exceeds 50 dB to virtually eliminate cross-channel coupling. Rated 350 WVDC. Tapped holes for #4-40 bolts. Min. insertion loss 50 dB, 100–2000 MHz except as noted.

Erie No.	Sections	Body Lgth.†	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
1206-502	6	1.125″	$19.50	$18.00	$16.50	$15.75	$15.30
1212-502	12	1.125″	21.45	19.80	18.15	17.32	16.83
1206-554*	6	.750″	$19.50	$18.00	$16.50	$15.75	$15.30
1212-554*	12	.750″	21.45	19.80	18.15	17.32	16.83

*Min. insertion loss 45 dB, 100–200 MHz; 50 dB, 200–2000 MHz. †Not including .281″ lg. terminals, each end.

SERIES 1216, 1233 AND 1234 SINGLE SECTION TYPES

Minimum insertion loss, MIL-STD-220: 40 dB, 5 MHz; 65 dB, 20 MHz; 65 dB, 100 MHz; 65 dB, 10 GHz. Operating temperature range: At 100 WVDC, −55° C to +105° C; at 70 WVDC, −55° C to +125° C. Maximum DC and low frequency current, 10 A.

Erie No.	Body Lgth.	Cap., Mfd.†	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
1216-001*	.687″	.05	$7.70	$6.54	$5.39	$5.00	$4.62
1233-000	.375″	.022	3.56	3.02	2.49	2.31	2.13
1234-000	.249″	.012	3.56	3.02	2.49	2.31	2.13

SINGLE-SECTION TYPES

Single-section, low-pass EMI filters for bushing or eyelet mounting. **Series 1201:** Small bushing type for rugged use; filter element soldered inside the bushing; ends potted with resin. **Series 1202:** Large-bushing version of 1201; same husky construction but has hook terminals. **Type 1203:** Miniature version of 1201 with heavily tinned eyelet for soldering into chassis. **Type 1204:** Same as 1202 series but with tinned eyelet for solder installation. **Type 1250:** Subminiature, low-voltage bushing type similar in construction to the larger 1201 series; offers improved volumetric efficiency and simple mounting. **Series 1270 and 1280:** Larger versions of type 1250, 1270-009 and -024 have miniature bushing; 1280-060 is for high voltage use. Filtercon EMI filters listed in table below are stock items. Other models are available on special order; prices on request.

Erie Number	Mounting Thd. x Lgth.	WVDC	Min. No-Load Insertion Loss Over MIL-STD-220 Temp. Range	Cap., pF†	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
1201-052	#12-28 x .218″*	200	45 dB, 200 MHz to 10 GHz	1500	$2.64	$2.24	$1.84	$1.71	$1.58
1201-054	#12-32 x .218″	200	45 dB, 200 MHz to 10 GHz	1500	2.64	2.24	1.84	1.71	1.58
1202-005	⅛-32 x .343*	1000	45 dB, 100 MHz to 10 GHz‡	2000	2.70	2.29	1.89	1.75	1.62
1202-051	⅛-32 x .343″*	500	50 dB, 100 MHz to 10 GHz	3000	2.95	2.54	2.14	2.00	1.87
1202-052	⅛-24 x .343″*	500	50 dB, 100 MHz to 10 GHz	3000	2.70	2.29	1.89	1.75	1.62
1202-054	⅛-32 x .343″*	500	50 dB, 100 MHz to 10 GHz	3000	2.70	2.29	1.89	1.75	1.62
1203-050	.160″ dia. mtg. hole	200	45 dB, 200 MHz to 10 GHz	1500	1.40	1.19	.98	.91	.84
1204-050	.250″ dia. mtg. hole	500	50 dB, 100 MHz to 10 GHz	3000	1.40	1.19	.98	.91	.84
1214-001	.160″ dia. mtg. hole	250§	38 dB, 200 MHz to 10 GHz	1750	1.06	.90	.74	.68	.63
1217-000	.180″ dia. mtg. hole	350•	55 dB, 200 MHz to 10 GHz▲	3000	1.76	1.49	1.23	1.14	1.05
1221-001	#12-32 x .250″*	300	50 dB, 100 MHz to 10 GHz	4000	2.96	2.51	2.07	1.92	1.77
1250-003	#8-32 x .216″*	200§	50 dB, 200 MHz to 10 GHz	1500	3.68	3.12	2.57	2.39	2.20
1270-009	#12-32 x .250″*	200	45 dB, 200 MHz to 10 GHz	1500	2.42	2.05	1.69	1.57	1.45
1270-016	#12-32 x .250″*	200§	50 dB, 100 MHz to 10 GHz	5000	2.42	2.05	1.69	1.57	1.45
1270-024	#12-32 x .250″	200	45 dB, 200 MHz to 10 GHz	1500	2.42	2.05	1.69	1.57	1.45
1270-025	#12-32 x .250″	200§	50 dB, 100 MHz to 10 GHz	5000	2.42	2.05	1.69	1.57	1.45
1280-060	⅜-32 x .375″	2500	40 dB, 100 MHz to 10 GHz	1250	4.50	3.82	3.15	2.92	2.70

*With lockwasher and nut. †Min. capacitance at 1 kHz, .5 to 5 V rms at 25° C. ‡Operating range, −55° C to +85° C. §WVDC given at 85° C; derate 50% for 125° C operation. •At 85° C; 200 WVDC at 125° C. ▲Operating range, −40° C to +125° C.

SERIES 1200 EMI SUPPRESSION FILTERS

Broadband filters specifically designed to suppress RF interference caused by electromechanical switches, relays, motor commutators, SCR and transistor switching, etc. Offering lightweight, compact construction excellent for aerospace applications, these non-polar devices are suitable for use on either low-voltage DC or AC lines. Combine operating reliability and high attenuation (down to 30 kHz) in a miniature, hermetically sealed, silver-plated steel case. WVDC: 50 at −55° C to +85° C; 28 at −55° C to +125° C. Recommended mounting torque 8–10 in. lbs. Typical weight, 5.6 grams. Tolerance, ≐.010. Approx. Size: .375″ dia. x .720″ lg., hex case types .995″ lg.; ¼-32 bushing. Terminal styles available: Series 1200-021 thru -025 and -028 and 1285-025, two flag terminals and .187″ lg. thread; 1200-091 thru -095 and -098, two flag terminals and .312″ long thread. With lockwasher and hex nut.

Series 1200 and 9000

9050, 9051

LOW PASS—L TYPE—10 kHz TO 10 GHz—50 WVDC, 125° C

Operating Temperature: −55° C to +85° C at 50 V; −55° C to +125° C at 28 V. Case dia., .385″. Overall length, 1.067″. ¼-28 threaded bushing. Flag terminals both ends.

Erie No.		Min. No-Load Insertion Loss per MIL-STD-220						Current, mA	Ohms, Max.	Net Each, Lots of						
Thread Length		30 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz			1-19	20-49	50-99	100-249	250-399	400-699	700-999
.187″	.312″															
1200-028	1200-098	44	70	70	70	70	70	60	70	$15.57	$13.70	$12.14	$11.21	$10.27	$9.65	$8.50
1200-023	1200-093	24	52	64	70	70	70	150	12	15.57	13.70	12.14	11.21	10.27	9.65	8.50
1200-024	1200-094	18	42	56	70	70	70	250	4	15.57	13.70	12.14	11.21	10.27	9.65	8.50
1200-021	1200-091	16	35	44	62	70	70	300	2.3	15.57	13.70	12.14	11.21	10.27	9.65	8.50
1200-022	1200-092	15	31	37	55	70	70	450	1.2	15.57	13.70	12.14	11.21	10.27	9.65	8.50
1200-025	1200-095	15	28	33	44	64	70	10A	.01	14.32	12.60	11.17	10.31	9.45	8.88	7.95

SERIES 9000 EMI SUPPRESSION FILTERS

Wide selection of precision-built, low-pass, power-line and feed-thru types EMI suppression filters. Hermetically sealed in sub-miniature cases for positive protection against any environmental condition. Available in L, Pi, T and C types for operation in various frequency ranges up to 10 GHz. **Tolerance:** ≐.010, unless specified. **Operating Temperature Range:** −55° C to +85° C or +125° C, as specified. Supplied with lockwasher and hex nut.

LOW PASS—L TYPE—10 kHz TO 10 GHz—50 WVDC, 125° C

Operating Temperature: −55° C to +85° C at 80 V; −55° C to +125° C at 50 V. Peak transient voltage, 160. I.R. megohms, minimum, 100. Gold-plated copper leads both ends. Diameter, .375″. Part No. 9050, resin sealed; 9051, hermetic sealed. ¼ x 28 threaded bushing.

Erie No.	Type	Overall Length, Inches	Minimum Full Load Insertion Loss (dB) per MIL-STD-220						Current, Amps	Ohms, Max.	Net Each, Lots of				
			30 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz			1-19	20-49	50-99	100-249	250-399
9050-000-0000	L	.687	15	28	33	44	60	70	15	.008	$7.52	$6.09	$5.42	$5.34	$5.02
9051-100-0000	L	.687	15	28	33	44	60	70	10	.008	9.02	7.31	6.50	6.41	6.03

LOW PASS—L, Pi AND T TYPES—30 kHz TO 10 GHz—100 WVDC, 125° C

Operating Temperature: −55° C to +85° C at 150 V; −55° C to +125° C at 100 V. Peak transient voltage, 500. I.R. megohms, minimum, 400, except 9004, 100. Diameter, .410″. ¼-28 threaded bushing. Thread length, .190″. Flag terminals.

Erie No.	Type	Overall Length, Inches	Minimum Full Load Insertion Loss (dB) per MIL-STD-220*						Current, Amps	Ohms, Max.	Net Each, Lots of				
			75 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz			1-19	20-49	50-99	100-249	250-399
9000-100-0012	L	1.078	24	35	47	65	70	70	.5	.6	$18.41	$14.92	$13.27	$13.08	$12.30
9000-100-0015	L	1.078	15	27	36	57	70	70	1	.25	17.06	13.82	12.30	12.12	11.40
9000-100-0017	L	1.078	.....	22	29	44	65	70	3	.06	16.32	13.22	11.76	11.59	10.90
9000-100-0019	L	1.078	12	20	26	37	65	70	5	.015	16.32	13.22	11.76	11.59	10.90
9001-100-1010	Pi	1.128	33	51	69	80	80	80	.5	.6	19.17	15.54	13.82	13.62	12.81
9001-100-1013	Pi	1.128	19	41	60	80	80	80	1.0	.25	18.01	14.60	12.99	12.80	12.04
9001-100-1015	Pi	1.128	.....	16	41	75	80	80	3	.06	17.29	14.01	12.47	12.29	11.56
9001-100-1017	Pi	1.128	.....	.....	28	65	80	80	5	.015	17.29	14.01	12.47	12.29	11.56
9004-100-2001	T	1.514	14	25	34	57	80	80	2	.1	19.38	15.71	13.97	13.77	12.95

*From −55° C to +125° C.

POWER LINE—L, Pi AND T TYPES—10 kHz TO 10 GHz—125 VAC, 125° C

Operating Temperature: −55° C to +85° C at 200 VDC/125 VAC at 400 Hz frequency; −55° C to +125° C at 150 VDC/125 VAC at 400 Hz frequency. Peak transient voltage, 500. I.R. megohms, minimum, 1000. Case diameter, .410″. ¼-28 threaded bushing. Thread length, .190″. Flag terminals, both ends.

Erie No.	Type	Overall Length, Inches	Minimum Full Load Insertion Loss (dB) per MIL-STD-220*						Current, Amps	Ohms, Max.	Net Each, Lots of				
			75 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz			1-19	20-49	50-99	100-249	250-399
9000-100-0024	L	1.078	14	25	36	58	70	70	.5	.6	$18.03	$14.61	$13.00	$12.81	$12.05
9000-100-0026	L	1.078	8	17	29	50	70	70	1	.25	16.68	13.52	12.03	11.85	11.15
9000-100-0028	L	1.078	8	13	20	35	70	70	3	.06	15.96	12.94	11.51	11.34	10.67
9000-100-0030	L	1.078	8	12	20	30	62	70	5	.015	15.96	12.94	11.51	11.34	10.67
9001-100-1018	Pi	1.128	15	33	50	80	80	80	.5	.6	20.84	16.89	15.03	14.81	13.93
9001-100-1021	Pi	1.128	.....	20	40	70	80	80	1	.25	17.63	14.29	12.71	12.53	11.79
9001-100-1023	Pi	1.128	.....	.....	20	55	80	80	3	.06	16.91	13.71	12.19	12.02	11.30
9001-100-1025	Pi	1.128	.....	.....	.....	44	80	80	5	.015	16.91	13.71	12.19	12.02	11.30
9004-100-2002	T	1.514	5	13	22	44	80	80	2	.1	19.38	15.71	13.97	13.77	12.95

*From −55° C to +125° C.

EMI SUPPRESSION FILTERS, SILICON AND BRIDGE RECTIFIERS

SERIES 9000 HERMETICALLY SEALED EMI SUPPRESSION FILTERS (CONTINUED)

POWER LINE—L, Pi AND T TYPES—10 kHz TO 10 GHz—100 VDC, 125° C

perating Temperature: −55° C to +85° C at 150 VDC; −55° C to +125° C at 100 VDC. Peak transient voltage, 500. I.R. megohms, inimum: L Types, 1000; Pi Types, 100; T Type 200. Case dia., .690″; thread lgth., .312″. 5/16-24 threaded bushing. Flag terminals both ds. Tolerance, ±.015.

Erie No.	Type	Overall Lgth., Inches	Min. Full Load Insertion Loss (dB) per MIL-STD-220* 30 kHz	100 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz	Current, Amps	Ohms, Max.	Net Each, Lots of 1-19	20-49	50-99	100-249	250-399
010-100-0010	L	1.405	21	41	48	60	70	70	70	.5	.3	$32.00	$25.93	$23.07	$22.73	$21.39
010-100-0011	L	1.405	16	33	40	52	70	70	70	1	.21	31.71	25.70	22.87	22.53	21.20
010-100-0012	L	1.405	14	25	29	37	55	70	70	3	.03	30.59	24.79	22.06	21.74	20.45
010-100-0013	L	1.405	14	25	29	34	47	70	70	5	.007	30.12	24.41	21.71	21.40	20.13
011-100-1010	Pi	1.700	34	65	75	80	80	80	80	.5	.3	39.23	31.80	28.29	27.88	26.23
011-100-1011	Pi	1.700	24	60	69	80	80	80	80	1	.21	38.76	31.42	27.95	27.54	25.91
011-100-1012	Pi	1.700	.....	36	48	66	80	80	80	3	.03	37.62	30.49	27.13	26.73	25.15
011-100-1013	Pi	1.700	.....	20	38	58	80	80	80	5	.02	37.05	30.03	26.71	26.32	24.76
011-100-2006	T	1.700	11	31	40	56	70	70	70	2	.08	37.62	30.49	27.13	26.73	25.15

From −55° C to +125° C.

POWER LINE—L, Pi AND T TYPES—10 kHz TO 10 GHz, 150 TO 300 VDC, 230 VAC, 125° C

perating Temperature: Part Nos. 9010-100-0020, 9011-100-1008 and 9011-100-2005, +85° C at 450 VDC/230 VAC, +125° C at 300 DC/230 VAC; all others, +85° C at 200 VDC/125 VAC, +125° C at 150 VDC/125 VAC. Tolerance, ±.015. Case diameter, .690″. 6-24 threaded bushing. Thread length, .312″. Flag terminals, both ends.

Erie No.	Type	Overall Length, Inches	Min. Full Load Insertion Loss (dB) per MIL-STD-220* 50 kHz	100 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz	Current, Amps	Ohms, Max.	Net Each, Lots of 1-19	20-49	50-99	100-249	250-399
010-100-0004	L	1.405	19	31	38	50	70	70	70	.5	.3	$24.99	$20.25	$18.02	$17.75	$16.70
010-100-0000	L	1.405	13	24	30	41	60	70	70	1	.21	24.68	20.00	17.80	17.54	16.50
010-100-0002	L	1.405	9	14	19	27	45	70	70	3	.03	23.52	19.07	16.96	16.71	15.72
010-100-0003	L	1.405	9	14	19	25	37	70	70	5	.007	22.95	18.60	16.55	16.31	15.34
011-100-1005	Pi	1.700	31	51	61	78	80	80	80	.5	.3	30.76	24.93	22.18	21.86	20.56
011-100-1000	Pi	1.700	23	43	53	70	80	80	80	1	.21	30.46	24.69	21.96	21.64	20.36
011-100-1002	Pi	1.700	.....	15	31	51	80	80	80	3	.03	29.32	23.76	21.14	20.83	19.60
011-100-1003	Pi	1.700	.....	.....	17	40	75	80	80	5	.02	28.69	23.25	20.69	20.39	19.18
011-100-2000	T	1.700	21	38	49	67	70	70	70	1	.6	31.16	25.26	22.47	22.14	20.83
011-100-2002	T	1.700	8	20	28	45	70	70	70	2	.08	30.21	24.49	21.78	21.46	20.19
011-100-2003	T	1.700	8	14	18	26	40	70	70	4	.013	29.73	24.10	21.44	21.13	19.87
010-100-0020	L	1.405	6	16	23	35	55	70	70	1	.21	41.99	34.03	30.28	29.83	28.07
011-100-1008	Pi	1.700	10	28	28	58	80	80	80	1	.3	43.70	35.42	31.51	31.05	29.21

From −55° C to +125° C.

FEED THRU—C TYPE—30 kHz TO 10 GHz—100 TO 300 VDC, 230 VAC, 125° C

perating Temperature: Part Nos. 9920-100-6000, 9923-100-6004, 9930-100-6000, 9932-100-6004, +85° C at 150 VDC, +125° C at 100 DC; Part No. 9932-100-6005, +85° C at 450 VDC/230 VAC, +125° C at 300 VDC/230 VAC; All others, +85° C at 200 VDC/125 AC, +125° C at 150 VDC/125 VAC. Tolerance, ±.015. Current, 15 amps. Ohms, .005, maximum. Flag terminals, both ends.

Erie No.	Cap. G.M.V. μF	Overall Length, Inches	Minimum Full Load Insertion Loss (dB) per MIL-STD-200* 50 kHz	100 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz	Net Each, Lots of 1-19	20-49	50-99	100-249	250-399
920-100-6000†	.33	.722	7	10	16	22	32	50	65	$ 8.07	$ 6.54	$ 5.82	$ 5.74	$ 5.40
923-100-6000†	.99	.911	16	19	25	31	41	60	65	14.29	11.58	10.30	10.15	9.55
930-100-6000‡	.7	1.013	15	20	24	30	40	57	65	13.11	10.63	9.45	9.31	8.76
932-100-6004‡	2.1	1.202	23	20	33	39	50	60	65	22.80	18.48	16.44	16.20	15.24
920-100-6002†	.1	.722	.....	.....	8	12	20	41	65	8.07	6.54	5.82	5.74	5.40
923-100-6002†	.3	.911	7	13	16	20	30	51	65	14.29	11.58	10.30	10.15	9.55
930-100-6001‡	.42	1.013	10	16	19	25	36	55	65	13.11	10.63	9.45	9.31	8.76
932-100-6005‡	.21	1.202	5	10	13	19	30	50	65	28.73	23.28	20.71	20.41	19.20

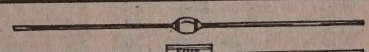
*From −55° C to +125° C. †Case dia., .410″; thread lgth., .190″. ¼-28 threaded bushing. ‡Case dia., .690″; thread lgth., .312″. 5/16-24 hreaded bushing.

FEED THRU—C TYPE—30 kHz TO 10 GHz—50 WVDC, 125° C

Operating Temperature: −55° C to +85° C at 80 V; −55° C to +125° C at 50 V. Peak Transient Voltage, 200. I.R. Megohm, Minimum, 00. Tolerance, ±.015. Case dia., .315″; overall length, .785″. Thread length, .190″, 12-32 threaded bushing. Flag terminals, both ends.

Erie No.	Cap. G.M.V. μF	Minimum Insertion Loss (dB) per MIL-STD-220 30 kHz	100 kHz	150 kHz	300 kHz	1 MHz	10 MHz	1 GHz	Current, Amps	Ohms, Max.	Net Each, Lots of 1-19	20-49	50-99	100-249	250-399
9916-100-6000	1.4	15	23	28	33	44	48	70	10	.004	$12.92	$10.47	$9.32	$9.18	$8.64

HIGH VOLTAGE SILICON RECTIFIER



Series HV10 miniature high voltage silicon rectifiers available in rated peak reverse voltage from 1 kV to 5 kV, in molded type and protective coated type. Feature extremely small size, nanoampere leakage, solid silver leads and an operating temperature range from −55° C to +125° C. Maximum forward current, derate 2 mA/° C from 100° C, 50 mA. Forward voltage drop at 10 mA at 25° C, 5.0 volts. Maximum capacitance at 100 VDC, 0.5 pF. Size: Protective coated type, .130″ body lgth., .085″ dia., .75″ lead lgth. Molded type, .250″ body lgth., .100″ dia., .75″ lead lgth.

Erie No.*	Peak Reverse Voltage	Max. Reverse Current at 25° C	Max. Reverse Current at 100° C	Cathode Dot Color Code	Net Each, Lots of 1-99	100-499	500-999
HV10M	1000 V	10 nA	1 μA	Brown	$1.38	$0.88	$0.66
HV10P	1000 V	10 nA	1 μA	Brown	1.27	.81	.61
HV20M	2000 V	10 nA	1 μA	Red	1.46	.92	.70
HV20P	2000 V	10 nA	1 μA	Red	1.35	.86	.65
HV30M	3000 V	10 nA	2 μA	Orange	1.53	.97	.74
HV30P	3000 V	10 nA	2 μA	Orange	1.43	.91	.69
HV40M	4000 V	20 nA	3 μA	Yellow	1.61	1.02	.78
HV40P	4000 V	20 nA	3 μA	Yellow	1.51	.96	.73
HV50M	5000 V	20 nA	3 μA	Green	1.72	1.09	.83
HV50P	5000 V	20 nA	3 μA	Green	1.61	1.02	.78

*Suffix **M** in Erie No. specifies Molded Type; Suffix **P** specifies Protective Coated Type.

FULL WAVE BRIDGE RECTIFIERS

Style 3000 full wave bridge rectifiers are series of miniature bridges with double-sealed modules designed for printed circuit applications. Available with working voltage from 100 to 1000 volts per leg. Operating temperature range from −55° C to +100° C. Double seal insures moisture resistance to MIL-STD-750A, Method 1021.1. Storage temperature, −55° C to +125° C. Surge current, 1 cycle 60 Hz, 25 A. VF per leg 1 A at 25° C, 1.1 VDC. I.R. per leg PRV at 25° C, 5 μA. Size, .500″ square top; .250″ h., .750″ leg length, .031″ leg dia.

Erie No.	Min. Peak Inverse Voltage, per Arm	Maximum Applied rms Voltage	Average Rectified Current 25° C	Net Each, Lots of 1-99	100-999
FWB 3001 A	100	70	1.5 A	$1.35	$1.10
FWB 3002 A	200	140	1.5 A	1.45	1.20
FWB 3004 A	400	280	1.5 A	1.60	1.35
FWB 3006 A	600	420	1.5 A	1.75	1.50
FWB 3008 A	800	560	1.5 A	2.20	2.00
FWB 3010 A	1000	700	1.5 A	2.40	2.25

WEE DUCTORS

Subminiature shielded inductor. Provides special merits in high density circuit applications. Has great inductance-to-size ratio. Conforms to MIL-C-15305C, Grade 1, Class B specifications.

Inductance Tol.: ±10% (0.1 to 22 μH), ±5% (27 to 1000 μH), ±10% (1200 to 56,000 μH), ±20% (68,000 to 180,000 μH). **Size:** .164″ dia. x .450″ lg. **Leads:** #24 AWG, 1.3″ lg. **Operating Temp.:** −55° C to 125° C.

SPECIFICATIONS

Nytronics No.	Ind., μH	Min. Q at Freq. Q	Min. Q at Freq. MHz	Approx. Reson., MHz	Approx. Cap., pF	Max. DC Ohms	Max. Cur., mA†
WEE-0.10	.10	63	25	500‡	0.67	0.020	4000
WEE-0.12	.12	61	25	500‡	0.67	0.029	3350
WEE-0.15	.15	59	25	500‡	0.67	0.032	3000
WEE-0.18	.18	57	25	458	0.67	0.040	2850
WEE-0.22	.22	56	25	414	0.67	0.045	2700
WEE-0.27	.27	50	25	373	0.67	0.08	2000
WEE-0.33	.33	48	25	337	0.67	0.09	1900
WEE-0.39	.39	48	25	310	0.67	0.16	1420
WEE-0.47	.47	48	25	283	0.67	0.17	1400
WEE-0.56	.56	45	25	258	0.67	0.36	960
WEE-0.68	.68	45	25	235	0.67	0.37	940
WEE-0.82	.82	41	25	214	0.67	0.46	870
WEE-1.0	1.0	42	7.9	164	0.92	0.062	2300
WEE-1.2	1.2	43	7.9	150	0.92	0.067	2200
WEE-1.5	1.5	41	7.9	135	0.92	0.16	1420
WEE-1.8	1.8	42	7.9	124	0.92	0.17	1370
WEE-2.2	2.2	42	7.9	112	0.92	0.19	1300
WEE-2.7	2.7	41	7.9	107	0.92	0.20	1270
WEE-3.3	3.3	40	7.9	91.5	0.92	0.31	1030
WEE-3.9	3.9	40	7.9	84.5	0.92	0.33	1000
WEE-4.7	4.7	40	7.9	76.5	0.92	0.58	750
WEE-5.6	5.6	40	7.9	69.5	0.92	0.64	710
WEE-6.8	6.8	40	7.9	63.5	0.92	0.68	680
WEE-8.2	8.2	45	7.9	57.5	0.92	1.3	500
WEE-10	10	46	2.5	52.5	0.92	1.4	480
WEE-12	12	47	2.5	47.5	0.92	1.5	460
WEE-15	15	47	2.5	42.5	0.92	1.7	440
WEE-18	18	45	2.5	53.5	0.49	0.88	610
WEE-22	22	47	2.5	47.0	0.50	0.95	590
WEE-27	27	42	2.5	44.0	0.48	1.15	530
WEE-33	33	43	2.5	40.0	0.48	1.2	520
WEE-39	39	45	2.5	36.5	0.48	1.6	450
WEE-47	47	46	2.5	33.0	0.49	1.8	420
WEE-56	56	40	2.5	30.0	0.49	2.2	390
WEE-68	68	40	2.5	27.0	0.50	2.3	375
WEE-82	82	42	2.5	17.5	1.0	2.4	360
WEE-100	100	63	.79	15.0	1.0	2.6	345
WEE-120	120	62	.79	14.0	1.0	2.9	330
WEE-150	150	63	.79	12.5	1.0	3.3	315
WEE-180	180	60	.79	11.5	1.0	3.6	300
WEE-220	220	57	.79	11.0	0.94	4.1	280
WEE-270	270	52	.79	10.0	0.92	4.8	260
WEE-330	330	50	.79	9.0	0.92	5.6	240
WEE-390	390	43	.79	8.5	0.87	6.2	230
WEE-470	470	66	.79	8.0	0.83	10.0	180
WEE-560	560	64	.79	7.5	0.82	11.5	170
WEE-680	680	71	.79	6.5	0.87	12.0	160
WEE-820	820	67	.79	6.0	0.87	13.8	150
WEE-1000	1000	62	.79	5.6	0.87	16.0	140
WEE-1200	1200	52	.250	1.490	9.0	18.2	135
WEE-1500	1500	51	.250	1.460	8.0	23.7	118
WEE-1800	1800	51	.250	1.420	6.5	30.2	105
WEE-2200	2200	50	.250	1.300	6.8	33.7	99
WEE-2700	2700	51	.250	1.180	6.8	43.1	87
WEE-3300	3300	52	.250	1.050	7.0	48.7	82
WEE-3900	3900	48	.250	.960	7.0	62.7	72
WEE-4700	4700	48	.250	.840	7.4	70.5	68
WEE-5600	5600	48	.250	.810	6.8	104	56
WEE-6800	6800	45	.250	.740	6.8	118	53
WEE-8200	8200	38	.250	.580	9.2	146	47
WEE-10,000	10,000	36	.079	.470	11.5	76.6	66
WEE-12,000	12,000	36	.079	.370	15.0	109	55
WEE-15,000	15,000	38	.079	.330	15.0	119	52
WEE-18,000	18,000	38	.079	.305	15.0	138	49
WEE-22,000	22,000	32	.079	.295	13.0	219	39
WEE-27,000	27,000	32	.079	.270	13.0	259	35
WEE-33,000	33,000	32	.079	.250	12.5	296	33
WEE-39,000	39,000	30	.079	.215	14.0	395	29
WEE-47,000	47,000	25	.079	.210	12.5	452	27
WEE-56,000	56,000	25	.079	.195	12.0	499	26
WEE-68,000	68,000	20	.079	.130	18.4	395	29
WEE-82,000	82,000	20	.079	.125	16.5	452	27
WEE-100,000	100,000	20	.079	.115	16.2	499	26
WEE-120,000	120,000	20	.070	.105	16.8	540	23
WEE-150,000	150,000	20	.060	.098	13.4	750	20
WEE-180,000	180,000	20	.050	.094	13.4	880	18

†Based on temp. rise not to exceed 40° C at 85° C ambient. ‡Greater than figure shown.

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
WEE-0.10 μH to .82 μH	$1.78	$1.19	$0.85	$0.65	$0.54	$0.49
WEE-1.0 μH to 22 μH	1.87	1.25	.89	.69	.57	.52
WEE-27 μH to 1000 μH	2.59	1.73	1.24	.95	.79	.72
WEE-1200 to 4700	2.94	1.96	1.40	1.08	.90	.81
WEE-5600 to 56,000	3.39	2.26	1.61	1.24	1.03	.93
WEE-68,000 to 180,000	5.11	3.41	2.43	1.87	1.56	1.42

SUPER WEE DUCTORS, MS90537, MS75087, MS75088 AND MS75089

Meet MIL-C-15305C, Grade 1, Class B. Epoxy-molded envelope and shielding offers reliability, electrical performance and min. coupling in high density packaging. **Inductance Tol.:** ±10%. **Size:** 0.157″ x 0.395″. **Leads:** #22 AWG, 1 7/16″ lg. **Operating Temp.:** −55° C to +125° C. **MS90537 Series** has "T" design, eliminating fine wire considerations.

SPECIFICATIONS

MS Type	Nytronics No. Wee-ductor§	Min. Q at Freq. Q	Min. Q at Freq. MHz#	Min. Reson., MHz	Appr. Cap., pF‡	Max. DC Ohms	Max. Cur., mA†
90537-1	SWD-0.10	50	25	500	0.67	0.025	2900
90537-2	SWD-0.12	51	25	450	0.67	0.034	2800
90537-3	SWD-0.15	51	25	400	0.67	0.037	2750
90537-4	SWD-0.18	50	25	375	0.67	0.047	2200
90537-5	SWD-0.22	49	25	330	0.67	0.067	1700
90537-6	SWD-0.27	47	25	290	0.67	0.11	1500
90537-7	SWD-0.33	46	25	280	0.67	0.13	1300
90537-8	SWD-0.39	44	25	255	0.67	0.18	1100
90537-9	SWD-0.47	44	25	235	0.67	0.25	1000
90537-10	SWD-0.56	43	25	210	0.67	0.33	900
90537-11	SWD-0.68	42	25	190	0.67	0.45	750
90537-12	SWD-0.82	40	25	180	0.67	0.59	600
90537-13	SWD-1.0	47	25	140	0.84	0.070	1900
90537-14	SWD-1.2	46	7.9	130	0.83	0.093	1600
90537-15	SWD-1.5	45	7.9	115	0.83	0.12	1300
90537-16	SWD-1.8	43	7.9	105	0.83	0.14	1200
90537-17	SWD-2.2	45	7.9	100	0.73	0.19	1100
90537-18	SWD-2.7	46	7.9	92	0.73	0.28	950
90537-19	SWD-3.3	44	7.9	85	0.76	0.35	800
90537-20	SWD-3.9	44	7.9	75	0.73	0.40	750
90537-21	SWD-4.7	44	7.9	70	0.73	0.55	650
90537-22	SWD-5.6	47	7.9	65	0.73	0.72	550
90537-23	SWD-6.8	50	7.9	55	0.78	1.02	500
90537-24	SWD-8.2	50	7.9	50	0.78	1.32	475
90537-25	SWD-10	49	7.9	46	0.84	1.62	450
90537-26	SWD-12	55	2.5	44	0.73	2.00	400
90537-27	SWD-15	44	2.5	49	0.48	0.80	620
90537-28	SWD-18	45	2.5	45	0.48	0.89	610
90537-29	SWD-22	46	2.5	41	0.48	0.96	600
90537-30	SWD-27	49	2.5	38	0.48	1.19	500
90537-31	SWD-33	45	2.5	34	0.48	1.37	490
90537-32	SWD-39	53	2.5	29	0.48	1.93	410
90537-33	SWD-47	52	2.5	27	0.48	2.11	400
90537-34	SWD-56	49	2.5	25	0.48	2.23	380
90537-35	SWD-68	51	2.5	21	0.50	2.70	370
90537-36	SWD-82	45	2.5	10.5	1.70	2.44	360
90537-37	SWD-100	52	2.5	10.0	1.70	3.12	325
90537-38	SWD-120	57	.79	9.7	1.40	3.60	290
90537-39	SWD-150	56	.79	8.5	1.50	4.10	275
90537-40	SWD-180	60	.79	8.0	1.40	4.40	260
90537-41	SWD-220	58	.79	7.5	1.30	5.00	250
90537-42	SWD-270	60	.79	7.0	1.30	5.80	240
90537-43	SWD-330	54	.79	6.5	1.10	6.40	225
90537-44	SWD-390	67	.79	6.2	1.00	7.40	200
90537-45	SWD-470	60	.79	5.7	1.00	9.50	180
90537-46	SWD-560	60	.79	4.7	1.30	10.5	174
90537-47	SWD-680	60	.79	4.5	1.10	11.8	168
90537-48	SWD-820	57	.79	4.2	1.10	13.0	152
90537-49	SWD-1000	65	.79	3.8	1.10	17.5	135
90537-50	SWD-1200	45	.25	1.5	6.20	22.1	115
90537-51	SWD-1500	49	.25	1.2	8.20	26.5	110
90537-52	SWD-1800	47	.25	1.0	8.70	29.9	105
90537-53	SWD-2200	50	.25	0.97	8.00	33.8	99
90537-54	SWD-2700	47	.25	0.92	7.00	47.3	83
90537-55	SWD-3300	43	.25	0.84	7.20	53.0	80
90537-56	SWD-3900	43	.25	0.80	6.50	73.8	67
90537-57	SWD-4700	44	.25	0.74	6.40	81.6	63
90537-58	SWD-5600	45	.25	0.73	5.50	98.9	56
90537-59	SWD-6800	43	.25	0.66	5.50	111.0	54
90537-60	SWD-8200	42	.25	0.54	6.70	119.0	52
90537-61	SWD-10,000	39	.25	0.47	7.30	137.0	49
90537-62	SWD-12,000	31	.079	0.33	12.0	143.0	46
90537-63	SWD-15,000	31	.079	0.29	12.7	157.0	45
90537-64	SWD-18,000	31	.079	0.28	11.2	175.0	41
90537-65	SWD-22,000	27	.079	0.25	11.6	274.0	33
90537-66	SWD-27,000	27	.079	0.21	12.9	308.0	31
90537-67	SWD-33,000	27	.079	0.19	13.3	343.0	30
90537-68	SWD-39,000	27	.079	0.17	14.1	376.0	27
90537-69	SWD-47,000	23	.079	0.16	13.5	473.0	26
90537-70	SWD-56,000	23	.079	0.14	13.2	512.0	25
90537-71	SWD-68,000	23	.079	0.13	13.2	580.0	24
90537-72	SWD-82,000	21	.079	0.12	12.9	618.0	23
90537-73	SWD-100,000	18	.079	0.11	12.2	678.0	22

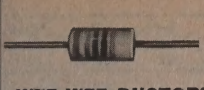
†Based on temp. rise not to exceed 35° C at 90° TA. ‡Applies to SWD only -100 thru -100,000. §Final suffix of SWD types indicates inductance in μH. #Applies to SWD only thru -82.

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
-0.1 μH to -.82 μH	$1.78	$1.19	$0.85	$0.65	$0.54	$0.49
-1.0 μH thru -12 μH	1.87	1.25	.89	.69	.57	.52
-15 μH thru -8200 μH	2.36	1.57	1.12	.86	.72	.65
-10,000 μH to -100,000 μH	3.60	2.40	1.72	1.72	1.10	1.00

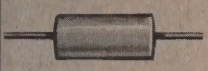
See following page for high-reliability versions of Super Wee Ductors.

NYTRONICS, INC. Inductors: Fixed, Shielded



WEE-WEE DUCTORS

RFC-M INDUCTOR



RFC-S INDUCTOR

RFC-L INDUCTOR

WEE-WEE DUCTORS

Subminiature shielded inductor, permits high density applications. Great inductance-to-size ratio. Color-coded per MIL-C-15305C. **Inductance Tolerance:** ±10%. **Power Rating:** I max. based on ½ watt dissipation. **Operating Temperature:** −55° C to +125° C. **Size:** 0.133″ dia. x 0.335″ lg. **Leads:** #24 AWG, 1.3″ lg.

SPECIFICATIONS

Nytronics No.*	Min. Q at Freq. Q	MHz	Approximate Reson., MHz	Cap., pF	Max. DC Ohms	Max. Cur., mA
WEE-WEE-0.10	42	25	500†	0.67	.112	1720
WEE-WEE-0.12	42	25	500†	0.67	.126	1630
WEE-WEE-0.15	42	25	500†	0.67	.138	1550
WEE-WEE-0.18	42	25	458	0.67	.165	1420
WEE-WEE-0.22	42	25	414	0.67	.198	1330
WEE-WEE-0.27	42	25	373	0.67	.220	1230
WEE-WEE-0.33	42	25	360	0.66	.258	1140
WEE-WEE-0.39	42	25	339	0.57	.292	1060
WEE-WEE-0.47	41	25	309	0.57	.360	960
WEE-WEE-0.56	39	25	295	0.52	.397	915
WEE-WEE-0.68	36	25	270	0.52	.472	840
WEE-WEE-0.82	35	25	250	0.52	.638	720
WEE-WEE-1.0	42	25	170	0.87	.208	1260
WEE-WEE-1.2	38	7.9	150	0.94	.225	1210
WEE-WEE-1.5	38	7.9	139	0.87	.265	1120
WEE-WEE-1.8	38	7.9	129	0.85	.285	1080
WEE-WEE-2.2	36	7.9	118	0.83	.330	1000
WEE-WEE-2.7	38	7.9	106	0.83	.381	935
WEE-WEE-3.3	38	7.9	98	0.81	.432	875
WEE-WEE-3.9	40	7.9	91	0.79	.576	755
WEE-WEE-4.7	42	7.9	83	0.79	.787	650
WEE-WEE-5.6	42	7.9	77	0.79	1.04	565
WEE-WEE-6.8	45	7.9	67	0.83	1.40	485
WEE-WEE-8.2	47	7.9	62	0.81	1.68	440
WEE-WEE-10	51	7.9	55	0.83	2.58	355
WEE-WEE-12	51	2.5	49	0.88	3.65	300
WEE-WEE-15	45	2.5	55	0.56	.862	620
WEE-WEE-18	43	2.5	50	0.57	1.02	570
WEE-WEE-22	42	2.5	45	0.57	1.12	545
WEE-WEE-27	37	2.5	41	0.58	1.28	510
WEE-WEE-33	46	2.5	37	0.57	1.70	440
WEE-WEE-39	38	2.5	33	0.59	1.99	405
WEE-WEE-47	42	2.5	29	0.64	2.41	370
WEE-WEE-56	41	2.5	27	0.54	2.85	340
WEE-WEE-68	46	2.5	23	0.71	3.21	320
WEE-WEE-82	46	2.5	21	0.71	3.57	305
WEE-WEE-100	43	2.5	19	0.71	4.10	280
WEE-WEE-120	50	0.79	16	0.79	5.97	235
WEE-WEE-150	49	0.79	15	0.75	7.05	215
WEE-WEE-180	56	0.79	14	0.72	8.12	200
WEE-WEE-220	53	0.79	12	0.79	14.8	150
WEE-WEE-270	57	0.79	11.5	0.72	16.8	140
WEE-WEE-330	57	0.79	10.5	0.70	18.6	130
WEE-WEE-390	57	0.79	10.0	0.65	21.1	120
WEE-WEE-470	50	0.79	8.5	0.75	32.2	100
WEE-WEE-560	50	0.79	7.5	0.80	36.4	95
WEE-WEE-680	56	0.79	7.0	0.77	41.1	90
WEE-WEE-820	49	0.79	6.5	0.74	45.0	85
WEE-WEE-1000	49	0.79	6.0	0.74	52.0	80

†Greater than. *Suffix indicates inductance in μH (e.g., WEE-WEE-**0.10** = 0.10 μH).

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
WEE-WEE-0.1 to -0.82	$2.57	$1.71	$1.22	$0.94	$0.79	$0.71
WEE-WEE-1.0 to -12	2.93	1.95	1.39	1.07	.89	.81
WEE-WEE-15 to -1000	3.47	2.32	1.65	1.27	1.06	.97

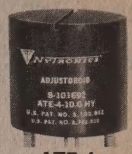
SUPER WEE-WEE DUCTOR SERIES ALSO AVAILABLE

Shielded miniature design provides greater inductance-to-size ratio in molded epoxy envelope. "T" lead construction in values 15 to 10,000 μH for exceptional reliability. Meets MIL-C-15305C, Grade 1, Class B specifications. **All values stocked from 0.10 to 10,000 μH. Prices and Specifications on request.**

PEE-WEE DUCTOR

ATE-11

ATE-0



ATE-4

PEE-WEE DUCTORS ULTRA MINIATURE

Amazing Pee-Wee Ductors represent a 66% size reduction from the smallest magnetically-shielded, axial lead inductor series previously available anywhere. Furthermore, this size reduction was obtained with negligible loss of electrical performance by employing several unique concepts in RF coil design. **Inductance Tolerance:** ±10%. **Operating Temperature:** −20° C to +80° C. **Size:** .085″ dia. x .155″ lg. **Leads:** #26 AWG, 1.5″ lg.

SPECIFICATIONS

Nytronics No.*	Min. Q at Freq. Q	MHz	Approx. Reson., MHz	Max. DC Ohms	Max. Cur., mA
PW-0.10	52	25	500	.060	1500
PW-0.12	52	25	480	.070	1400
PW-0.15	52	25	450	.080	1300
PW-0.18	55	25	430	.090	1200
PW-0.22	55	25	390	.11	1100
PW-0.27	55	25	340	.12	1000
PW-0.33	52	25	310	.14	950
PW-0.39	52	25	280	.16	900
PW-0.47	50	25	250	.20	800
PW-0.56	50	25	220	.25	750
PW-0.68	48	25	200	.27	700
PW-0.82	48	25	180	.36	600
PW-1.0	45	25	165	.40	525
PW-1.2	45	7.9	150	.70	425
PW-1.5	45	7.9	130	.80	400
PW-1.8	45	7.9	120	.90	350
PW-2.2	45	7.9	110	1.3	320
PW-2.7	45	7.9	100	1.8	275
PW-3.3	42	7.9	70	1.7	290
PW-3.9	45	7.9	65	1.8	275
PW-4.7	45	7.9	58	2.6	225
PW-5.6	45	7.9	54	2.9	210
PW-6.8	45	7.9	50	3.3	200
PW-8.2	45	7.9	48	4.5	170
PW-10	45	7.9	45	4.8	165
PW-12	45	2.5	40	2.0	250
PW-15	45	2.5	36	2.5	230
PW-18	45	2.5	31	3.5	195
PW-22	46	2.5	28	4.5	170
PW-27	48	2.5	25	5.0	160
PW-33	48	2.5	23	5.5	150
PW-39	48	2.5	22	7.0	140
PW-47	50	2.5	21	7.5	135
PW-56	52	2.5	19	8.0	130
PW-68	55	2.5	18	9.0	120
PW-82	55	2.5	16	14	95
PW-100	55	2.5	14	16	90
PW-120	34	.79	9.5	10	115
PW-150	34	.79	8.8	12	105
PW-180	34	.79	8.1	15	90
PW-220	36	.79	7.8	20	80
PW-270	36	.79	7.3	23	75
PW-330	36	.79	6.8	26	70
PW-390	36	.79	6.0	35	65
PW-470	38	.79	5.6	37	60
PW-560	40	.79	5.0	40	58
PW-680	40	.79	4.3	48	54
PW-820	40	.79	3.8	54	47
PW-1000	40	.79	3.5	65	43

*Suffix indicates inductance in μH (e.g., PW-**0.10** = 0.10 μH). **Note:** Additional inductance values from .025 μH up to 10,000 μH available on special order.

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
PW-0.10 to -1.0	$3.73	$2.49	$1.78	$1.37	$1.14	$1.04
PW-1.2 ro 4.7	4.06	2.71	1.93	1.49	1.24	1.13
PW-5.6 to -10	4.26	2.84	2.03	1.56	1.30	1.19
PW-12 to -27	4.75	3.17	2.26	1.74	1.45	1.32
PW-33 to -100	5.05	3.36	2.40	1.85	1.54	1.40
PW-120 to -1000	5.11	3.40	2.43	1.87	1.70	1.55

NYTRONICS, INC. Fixed Inductors

RFC-L, -M ,-S, AND -SS INDUCTORS

Molded non-shielded inductors. Provide exceptional reliability in critical circuitry applications. Meet requirements of MIL-C-15305, latest revision.

Series	Tolerance	Diss. Watts	Body Size Lgth.	Body Size Diam.	Lead AWG
L	±10% to -22 ±5% -27 up	½	.900″	.310″	#21
M	±10% to -22 ±5% -27 up	⅓	.600″	.250″	#21
S	±10% to -22 ±5% -27 up	⅓	.440″	.188″	#22
SS	±10% to -33 ±5% -39 up	.....	.375″	.155″	#22

MS Type	Nytronics Type No.	Ind. H	Min. at Freq. Q	Min. at Freq. MHz	Self-Resos. MHz	Max. DC Resis.	Max. Cur. mA
SERIES RFC-L-							
21380-1	RFC-L-1.0	1.0	130	15	170	.03	4000
21380-2	RFC-L-1.2	1.2	130	15	155	.03	4000
21380-3	RFC-L-1.5	1.5	130	10	140	.03	4000
21380-4	RFC-L-1.8	1.8	130	10	125	.03	4000
21380-5	RFC-L-2.2	2.2	130	10	115	.04	3500
21380-6	RFC-L-2.7	2.7	100	10	102	.04	3500
21380-7	RFC-L-3.3	3.3	100	7.9	90	104	3500
21380-8	RFC-L-3.9	3.9	80	7.9	85	105	3100
21380-9	RFC-L-4.7	4.7	75	7.9	80	.05	3100
21380-10	RFC-L-5.6	5.6	65	7.9	72	106	3000
21380-11	RFC-L-6.8	6.8	65	7.9	65	.06	3000
21380-12	RFC-L-8.2	8.2	65	7.9	57	.11	2400
21380-13	RFC-L-10	10	75	5	50	.15	1800
21380-15	RFC-L-15	15	75	5	40	.3	1300
21380-17	RFC-L-22	22	75	2.5	32	.5	1000
21380-18	RFC-L-27	27	70	2.5	30	.6	900
21380-19	RFC-L-33	33	70	2.5	28	.7	850
21380-20	RFC-L-39	39	70	2.5	26	1.1	720
21380-21	RFC-L-47	47	75	2.5	25	1.3	620
21380-22	RFC-L-56	56	80	2.5	22	1.8	540
21380-23	RFC-L-68	68	100	2.5	20	2.4	450
21380-24	RFC-L-82	82	100	2.5	18	2.8	425
21380-25	RFC-L-100	100	100	1.5	17	3.2	400
21380-26	RFC-L-120	120	100	1.5	15	4.8	360
21380-27	RFC-L-150	150	100	1.0	14	6.4	280
21380-29	RFC-L-220	220	95	1.0	11	12	200
21380-30	RFC-L-270	270	70	1.0	9	13	195
21380-31	RFC-L-330	330	65	.79	7.5	14	190
21380-32	RFC-L-390	390	65	.79	6.5	15.5	180
21380-33	RFC-L-470	470	60	.79	5.5	17	170
21380-34	RFC-L-560	560	75	.5	4	18.5	165
21380-35	RFC-L-680	680	75	.5	3.2	20	155
21380-36	RFC-L-820	820	75	.5	2.8	22	150
21380-37	RFC-L-1000	1000	75	.5	2.4	24	145
21380-38	RFC-L-1200	1200	75	.5	2.1	27	137
21380-39	RFC-L-1500	1500	75	.4	1.9	29	130
21380-40	RFC-L-1800	1800	65	.4	1.7	32	125
21380-41	RFC-L-2200	2200	65	.25	1.5	35	120
21380-42	RFC-L-2700	2700	65	.25	1.3	40	112
21380-43	RFC-L-3300	3300	65	.25	1.2	45	105
21380-44	RFC-L-3900	3900	65	.25	1.05	49	100
21380-45	RFC-L-4700	4700	65	.25	.95	53	95
21380-46	RFC-L-5600	5600	65	.25	.85	60	90
21380-47	RFC-L-6800	6800	65	.25	.75	67	85
21380-48	RFC-L-8200	8200	65	.25	.65	75	82
21380-49	RFC-L-10000	10000	65	.15	.58	80	80
SERIES RFC-M-							
21388-1	RFC-M-1.0	1.0	100	15	170	.04	2700
21388-2	RFC-M-1.2	1.2	100	15	155	.04	2700
21388-3	RFC-M-1.5	1.5	100	10	140	.04	2700
21388-4	RFC-M-1.8	1.8	95	10	125	.05	2500
21388-5	RFC-M-2.2	2.2	95	10	110	.05	2500
21388-6	RFC-M-2.7	2.7	68	7.9	95	.05	2500
21388-7	RFC-M-3.3	3.3	60	7.9	90	.05	2500
21388-8	RFC-M-3.9	3.9	60	7.9	87	.07	2100
21388-9	RFC-M-4.7	4.7	60	7.9	75	.09	1800
21388-10	RFC-M-5.6	5.6	65	7.9	70	.14	1550
21388-12	RFC-M-8.2	8.2	65	7.9	57	.25	1150
21388-13	RFC-M-10	10	65	5	50	.32	1000
21388-14	RFC-M-12	12	65	5	45	.45	870
21388-15	RFC-M-15	15	75	4	40	.62	730
21388-16	RFC-M-18	18	65	4	37	.72	660
21388-17	RFC-M-22	22	65	2.5	35	.8	600
21388-18	RFC-M-27	27	65	2.5	31	1.2	520
21388-19	RFC-M-33	33	80	2.5	27	1.5	450
21388-20	RFC-M-39	39	80	2.5	25	2.3	380
21388-21	RFC-M-47	47	100	2.5	24	3.0	300
21388-22	RFC-M-56	56	100	2.5	22	4.2	270
21388-23	RFC-M-68	68	100	2.5	20	5.2	250
21388-24	RFC-M-82	82	100	2.5	18	6.2	220
21388-25	RFC-M-100	100	100	1.5	17	7	200
21388-26	RFC-M-120	120	95	1.5	14	7.5	200
21388-27	RFC-M-150	150	90	1.0	11	8	190
21388-29	RFC-M-220	220	85	1.0	7	10	180
21388-30	RFC-M-270	270	80	1.0	5.5	11	172
21388-31	RFC-M-330	330	80	.8	4.5	12	165
21388-32	RFC-M-390	390	75	.8	4.0	13	157
21388-33	RFC-M-470	470	75	.8	3.5	14	150
21388-34	RFC-M-560	560	65	.8	3.1	16	145
21388-35	RFC-M-680	680	65	.8	2.7	17	140
21388-36	RFC-M-820	820	65	.8	2.5	19	132
21388-37	RFC-M-1000	1000	70	.5	2.3	21	125
21388-38	RFC-M-1200	1200	60	.25	2.7	22	120
21388-39	RFC-M-2200	2200	70	.25	2.0	30	100

MS Type	Nytronics Type No.	Ind. H	Min. at Freq. Q	Min. at Freq. MHz	Self-Resos. MHz	Max. DC Resis.	Max. Cur. mA
SERIES RFC-S-							
21389-1	RFC-S-0.1	.1	85	50	500	.02	4000
21389-2	RFC-S-0.12	.12	85	50	500	.025	3500
21389-3	RFC-S-0.15	.15	85	50	500	.03	3000
21389-4	RFC-S-0.18	.18	75	50	500	.03	3000
21389-5	RFC-S-0.22	.22	75	50	500	.03	3000
21389-7	RFC-S-0.33	.33	70	40	440	.05	2500
21389-8	RFC-S-0.39	.39	65	40	400	.08	2000
21389-9	RFC-S-0.47	.47	60	25	360	.08	2000
21389-10	RFC-S-0.56	.56	55	25	330	.1	1700
21389-11	RFC-S-0.68	.68	55	25	300	.12	1500
21389-13	RFC-S-1.0	1.0	50	20	250	.24	1100
21389-14	RFC-S-1.2	1.2	45	20	220	.35	1000
21389-15	RFC-S-1.5	1.5	45	15	200	.43	850
21389-17	RFC-S-2.2	2.2	45	15	.65	.8	610
21390-1	RFC-S-2.7	2.7	55	10	110	.12	1600
21390-2	RFC-S-3.3	3.3	55	10	100	.15	1400
21390-3	RFC-S-3.9	3.9	60	10	95	.23	1200
21390-4	RFC-S-4.7	4.7	70	7.9	90	.3	1000
21390-5	RFC-S-5.6	5.6	65	7.9	80	.45	900
21390-6	RFC-S-6.8	6.8	65	7.9	70	.55	800
21390-8	RFC-S-10	10	60	5	60	.73	650
21390-9	RFC-S-12	12	65	5	53	1.1	590
21390-10	RFC-S-15	15	80	2.5	47	1.4	500
21390-11	RFC-S-18	18	75	2.5	43	1.6	460
21390-12	RFC-S-22	22	75	2.5	40	1.8	430
21390-13	RFC-S-27	27	75	2.5	36	2.7	360
21390-14	RFC-S-33	33	85	2.5	32	3.5	300
21390-15	RFC-S-39	39	80	2.5	26	3.8	290
21390-16	RFC-S-47	47	80	2.5	22	4.0	275
21390-18	RFC-S-68	68	75	2.5	16	4.7	250
21390-19	RFC-S-82	82	75	2.5	13	5.3	235
21390-20	RFC-S-100	100	75	1.5	10	6.0	220
21390-22	RFC-S-150	150	65	.79	6.7	5.8	164
21390-23	RFC-S-180	180	65	.79	6.3	6.6	158
21390-24	RFC-S-220	220	65	.79	5.9	7.4	155
21390-25	RFC-S-270	270	65	.79	5.6	8.0	150
21390-27	RFC-S-330	330	65	.79	5.0	8.9	142
21390-29	RFC-S-390	390	65	.79	4.5	9.9	135
21390-31	RFC-S-470	470	65	.79	4.0	10.9	128
21390-33	RFC-S-560	560	65	.79	3.6	11.8	123
21390-35	RFC-S-680	680	60	.79	3.4	13.5	115
21390-37	RFC-S-820	820	60	.79	3.1	15.0	110
21390-39	RFC-S-1000	1000	60	.79	2.8	16.5	104
SERIES RFC-SS-							
18130-1	RFC-SS-0.15	.15	50	25	525	.03	2450
18130-2	RFC-SS-0.22	.22	50	25	450	.05	1900
18130-3	RFC-SS-0.33	.33	45	25	360	.09	1400
18130-4	RFC-SS-0.47	.47	45	25	310	.12	1225
18130-5	RFC-SS-0.56	.56	50	25	280	.13	1220
18130-6	RFC-SS-0.68	.68	50	25	250	.15	1100
18130-7	RFC-SS-0.82	.82	50	25	220	.22	900
18130-8	RFC-SS-1.0	1.0	50	25	200	.29	830
18130-9	RFC-SS-1.2	1.2	33	7.9	180	.42	650
18130-10	RFC-SS-1.5	1.5	33	7.9	160	.5	600
18130-11	RFC-SS-1.8	1.8	33	7.9	150	.65	525
18130-12	RFC-SS-2.2	2.2	33	7.9	135	.95	435
18130-13	RFC-SS-2.7	2.7	33	7.9	120	1.2	385
18130-14	RFC-SS-3.3	3.3	33	7.9	110	2.0	300
18130-15	RFC-SS-3.9	3.9	33	7.9	100	2.3	280
18130-16	RFC-SS-4.7	4.7	33	7.9	90	2.6	260
18130-17	RFC-SS-5.6	5.6	45	7.9	60	.32	750
18130-18	RFC-SS-6.8	6.8	50	7.9	55	.5	600
18130-19	RFC-SS-8.2	8.2	50	7.9	50	.6	545
18130-20	RFC-SS-10	10	55	7.9	45	.9	445
18130-21	RFC-SS-12	12	65	2.5	42	1.1	404
18130-22	RFC-SS-15	15	65	2.5	40	1.4	370
18130-23	RFC-SS-18	18	75	2.5	34	2.25	280
18130-24	RFC-SS-22	22	75	2.5	30	2.5	265
18130-25	RFC-SS-27	27	60	2.5	25	2.6	260
18130-26	RFC-SS-33	33	65	2.5	19	3.0	250
90538-2	RFC-SS-39	39	60	2.5	14.5	2.6	176
90538-4	RFC-SS-47	47	55	2.5	13.0	2.75	170
90538-6	RFC-SS-56	56	55	2.5	12.0	3.0	164
90538-8	RFC-SS-68	68	55	2.5	11.0	3.3	156
90538-10	RFC-SS-82	82	50	2.5	10.3	3.9	143
90538-12	RFC-SS-100	100	50	2.5	9.5	4.5	133
90538-14	RFC-SS-120	120	65	.79	8.7	5.2	124
90538-16	RFC-SS-150	150	65	.79	8.0	6.05	114
90538-18	RFC-SS-180	180	65	.79	7.0	6.75	108
90538-20	RFC-SS-220	220	65	.79	6.2	7.45	103

PRICES ±10% TOLERANCE*

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
RFC-L-1.0 to -27	$0.953	$0.636	$0.454	$0.349	$0.291	$0.265
RFC-L-33 to -1200	1.06	.705	.504	.388	.323	.294
RFC-L-1500 to -4700	1.27	.85	.607	.467	.389	.353
RFC-L-5600 to -10000	1.48	.989	.707	.544	.453	.411
RFC-M-1.0 to -27	.845	.563	.402	.31	.258	.258
RFC-M-33 to -470	.953	.636	.454	.349	.291	.265
RFC-M-560 to -2200	1.06	.705	.504	.388	.323	.294
RFC-S-0.1 to -4.7	.747	.498	.356	.274	.228	.207
RFC-S-5.6 to -27	.636	.424	.303	.233	.194	.177
RFC-S-33 to -470	.747	.498	.356	.274	.228	.207
RFC-S-560 to -1000	.979	.653	.466	.359	.276	.25
RFC-SS-0.15 to -4.7	.747	.498	.356	.274	.228	.207
RFC-SS-5.6 to -27	.636	.424	.303	.233	.194	.177
RFC-SS-33 to -240	.747	.498	.356	.274	.228	.207

*For ±5% tolerance, use above prices x 1.4.

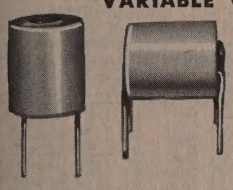
DECI-DUCTORS

The smallest RF inductor. It offers epoxy-molded reliability and uniformity. Meets specifications of MIL-C-15305C, Grade 1, Class B. **Inductance Tol:** ±10%. **Size:** 0.100″ x 0.250″. **Leads:** #24 AWG, 1.25″ lg. **Operating Temp.:** −55° C to 125° C.

Nytronics No.	Ind., μH	Min. Q at Freq. Q	MHz	Min. Reson., MHz	Max. DC Ohms	Max. Cur., mA*
DD-0.10	.10	40	25	690	0.07	2000
DD-0.12	.12	40	25	650	0.08	1900
DD-0.15	.15	38	25	600	0.09	1750
DD-0.18	.18	38	25	550	0.10	1600
DD-0.22	.22	35	25	510	0.11	1550
DD-0.27	.27	35	25	470	0.15	1350
DD-0.33	.33	32	25	410	0.21	1150
DD-0.39	.39	32	25	370	0.29	970
DD-0.47	.47	32	25	340	0.35	820
DD-0.56	.56	32	25	310	0.48	700
DD-0.68	.68	33	25	280	0.65	600
DD-0.82	.82	30	25	255	0.82	500
DD-1.00	1.00	30	25	240	1.10	475
DD-1.20	1.20	30	7.9	155	0.16	1200
DD-1.50	1.50	32	7.9	140	0.20	1100
DD-1.80	1.80	35	7.9	130	0.32	900
DD-2.20	2.20	35	7.9	120	0.37	760
DD-2.70	2.70	37	7.9	105	0.49	700
DD-3.30	3.30	45	7.9	95	0.67	575
DD-3.90	3.90	45	7.9	87	0.95	500
DD-4.70	4.70	45	7.9	80	1.10	475
DD-5.60	5.60	52	7.9	75	1.60	380
DD-6.80	6.80	52	7.9	65	1.80	350
DD-8.20	8.20	60	7.9	62	2.40	300
DD-10.0	10.0	60	7.9	52	3.40	265
DD-12.0	12.0	45	2.5	42	2.40	300
DD-15.0	15.0	47	2.5	36	2.70	275
DD-18.0	18.0	50	2.5	32	3.00	260
DD-22.0	22.0	50	2.5	28	3.30	250
DD-27.0	27.0	50	2.5	25	3.80	240
DD-33.0	33.0	50	2.5	30	3.80	260
DD-39.0	39.0	50	2.5	26	4.10	240
DD-47.0	47.0	50	2.5	24	4.40	210
DD-56.0	56.0	50	2.5	22	5.70	205
DD-68.0	68.0	52	2.5	19	6.50	180
DD-82.0	82.0	52	2.5	17	7.30	175
DD-100	100	50	2.5	15	8.20	165
DD-120	120	28	0.79	14	14	110
DD-150	150	28	0.79	13	16	105
DD-180	180	28	0.79	12	18	100
DD-220	220	26	0.79	11	25	90
DD-270	270	26	0.79	10	33	75
DD-330	330	26	0.79	9.0	37	70
DD-390	390	25	0.79	8.0	51	60
DD-470	470	27	0.79	7.0	56	58
DD-560	560	27	0.79	6.5	61	55
DD-680	680	28	0.79	6.0	70	50
DD-820	820	28	0.79	5.5	91	45
DD-1000	1000	28	0.79	5.2	102	40

*Based on 35° C rise in 90° C ambient.

VARIABLE VIV-VIH DUCTORS



Miniature type, encapsulated in epoxy resin for reliability. Meets requirements of MIL-C-15305A, Grade 1, Class B. **Inductance Tuning Range:** ±10% (0.1 μH), ±15% (0.15 to 0.22 μH), ±20% (0.33 to 4700 μH). **Size:** 0.40″ dia. x 0.50″ lg. (vertical style); .40″ dia. x .5″ wide (horizontal style). **Leads:** #22 AWG. **Operating Temp.:** −55° C to +125° C.

Nytronics No. Vert. Mtg.	Nytronics No. Horiz. Mtg.	Ind., μH	Min. Q at Freq. Q	MHz	Approx. Reson., MHz	Max. DC Ohms at 25° C
VIV-0.10	VIH-0.10	.10	85	25	500†	0.02
VIV-0.15	VIH-0.15	.15	100	25	500†	0.035
VIV-0.22	VIH-0.22	.22	100	25	500†	0.04
VIV-0.33	VIH-0.33	.33	100	25	334	0.04
VIV-0.47	VIH-0.47	.47	100	25	285	0.05
VIV-0.68	VIH-0.68	.68	100	25	237	0.07
VIV-1.00	VIH-1.00	1.00	90	25	205	0.13
VIV-1.50	VIH-1.50	1.50	70	7.9	168	0.24
VIV-2.20	VIH-2.20	2.20	73	7.9	135	0.30
VIV-3.30	VIH-3.30	3.30	80	7.9	112	0.45
VIV-4.70	VIH-4.70	4.70	75	7.9	100.0	0.80
VIV-6.80	VIH-6.80	6.80	80	7.9	80.0	1.1
VIV-10.0	VIH-10.0	10.0	82	7.9	67.0	1.9
VIV-15.0	VIH-15.0	15.0	65	2.5	54.2	3.2
VIV-22.0	VIH-22.0	22.0	55	2.5	17.5	3.4
VIV-33.0	VIH-33.0	33.0	54	2.5	15.0	3.6
VIV-47.0	VIH-47.0	47.0	51	2.5	13.2	4.5
VIV-68.0	VIH-68.0	68.0	55	2.5	12.0	5.5
VIV-100	VIH-100	100.0	50	2.5	10.5	6.7
VIV-150	VIH-150	150	50	.79	3.0	11.0
VIV-220	VIH-220	220	50	.79	2.70	13.0
VIV-330	VIH-330	330	48	.79	2.24	16.0
VIV-470	VIH-470	470	45	.79	1.90	18.0
VIV-680	VIH-680	680	42	.79	1.70	21.0
VIV-1000	VIH-1000	1000	40	.79	1.40	38.0
VIV-1500	VIH-1500	1500	40	.25	1.14	54.0
VIV-2200	VIH-2200	2200	44	.25	0.96	66.0
VIV-3300	VIH-3300	3300	46	.25	0.86	85.0
VIV-4700	VIH-4700	4700	48	.25	0.76	99.0

WEE V-L DUCTORS

Subminiature shielded adjustable high Q value inductor. **Inductance Tuning Range:** ±10%. **Working Voltage:** 300 VDC. **Size:** 0.30″ dia. x 0.40″ lg. **Oper Temp.:** −55° C to +125° C.

Nytronics No.	Ind., μH	Nom. Q at Freq. Q	MHz	Nom. Reson., MHz	Max. DC Ohms	Max. Cur., mA*
WEE V-L 0.10‡	.10	70	25	250†	.030	2500
WEE V-L 0.12‡	.12	70	25	250†	.030	2500
WEE V-L 0.15	.15	70	25	250†	.030	2500
WEE V-L 0.18	.18	70	25	250†	.030	2400
WEE V-L 0.22	.22	70	25	250†	.038	2300
WEE V-L 0.27	.27	80	25	250†	.040	2200
WEE V-L 0.33	.33	80	25	250†	.040	2200
WEE V-L 0.39	.39	80	25	250	.045	2100
WEE V-L 0.47	.47	80	25	230	.045	2100
WEE V-L 0.56	.56	80	25	220	.050	2000
WEE V-L 0.68	.68	80	25	190	.055	1900
WEE V-L 0.82	.82	85	25	180	.060	1800
WEE V-L 1.00	1.00	85	25	160	.070	1700
WEE V-L 1.2	1.2	90	7.9	170	.085	1670
WEE V-L 1.5	1.5	100	7.9	155	.100	1540
WEE V-L 1.8	1.8	115	7.9	135	.110	1470
WEE V-L 2.2	2.2	110	7.9	120	.120	1410
WEE V-L 2.7	2.7	110	7.9	104	.125	1380
WEE V-L 3.3	3.3	90	7.9	93.0	.165	1200
WEE V-L 3.9	3.9	90	7.9	87.0	.180	1135
WEE V-L 4.7	4.7	95	7.9	79.0	.245	985
WEE V-L 5.6	5.6	95	7.9	72.0	.265	950
WEE V-L 6.8	6.8	85	7.9	63.0	.330	853
WEE V-L 8.2	8.2	95	7.9	60.0	.460	720
WEE V-L 10	10	90	7.9	54.0	.640	620
WEE V-L 12	12	120	2.5	37.0	.800	545
WEE V-L 15	15	120	2.5	28.8	.865	520
WEE V-L 18	18	115	2.5	23.8	.940	504
WEE V-L 22	22	125	2.5	21.3	1.03	460
WEE V-L 27	27	115	2.5	20.6	1.18	418
WEE V-L 33	33	120	2.5	18.6	1.30	398
WEE V-L 39	39	120	2.5	17.7	1.41	385
WEE V-L 47	47	110	2.5	14.9	1.61	350
WEE V-L 56	56	115	2.5	13.9	2.08	330
WEE V-L 68	68	105	2.5	12.9	2.20	320
WEE V-L 82	82	105	2.5	11.7	2.42	300
WEE V-L 100	100	95	2.5	10.5	2.15	333
WEE V-L 120	120	95	0.790	5.60	2.38	316
WEE V-L 150	150	90	0.790	5.20	2.52	306
WEE V-L 180	180	95	0.790	4.90	2.88	288
WEE V-L 220	220	95	0.790	4.60	3.18	273
WEE V-L 270	270	100	0.790	4.20	3.50	260
WEE V-L 330	330	100	0.790	3.55	4.80	222
WEE V-L 390	390	100	0.790	3.45	5.44	209
WEE V-L 470	470	100	0.790	3.20	5.90	201
WEE V-L 560	560	95	0.790	2.90	6.30	194
WEE V-L 680	680	100	0.790	2.70	7.20	181
WEE V-L 820	820	90	0.790	2.50	8.00	172
WEE V-L 1000	1000	100	0.790	2.35	12.0	141
WEE V-L 1200	1200	95	0.250	2.20	13.5	132
WEE V-L 1500	1500	90	0.250	1.90	16.5	119
WEE V-L 1800	1800	100	0.250	1.80	18.0	114
WEE V-L 2200	2200	100	0.250	1.70	20.5	107
WEE V-L 2700	2700	95	0.250	1.50	22.5	102
WEE V-L 3300	3300	90	0.250	1.40	42.0	76
WEE V-L 3900	3900	85	0.250	1.27	47.5	71
WEE V-L 4700	4700	85	0.250	1.24	53.0	67
WEE V-L 5600	5600	85	0.250	0.93	62.5	65
WEE V-L 6800	6800	75	0.250	0.79	69.5	58
WEE V-L 8200	8200	80	0.250	0.75	75.0	56
WEE V-L 10,000	10,000	70	0.250	0.70	100.0	49
WEE V-L 12,000	12,000	70	0.079	.50	64	60
WEE V-L 15,000	15,000	70	0.079	.38	84	52
WEE V-L 18,000	18,000	70	0.079	.36	93	50
WEE V-L 22,000	22,000	70	0.079	.32	104	45
WEE V-L 27,000	27,000	70	0.079	.30	173	35
WEE V-L 33,000	33,000	70	0.079	.27	187	32
WEE V-L 39,000	39,000	70	0.079	.26	220	30
WEE V-L 47,000	47,000	70	0.079	.25	253	28
WEE V-L 56,000	56,000	70	0.079	.24	285	26
WEE V-L 68,000	68,000	60	0.079	.20	311	24
WEE V-L 82,000	82,000	60	0.079	.19	385	22
WEE V-L 100,000	100,000	60	0.079	.17	420	20

*Based on temp. rise not to exceed 35° C at 90° C ambient. †Greater than. ‡Tunable range, ±5%.

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
DD-0.10 to -1.00	$1.16	$0.77	$0.55	$0.43	$0.35	$0.32
DD-1.20 to -27.0	1.26	.84	.60	.46	.39	.35
DD-33.0 to -100	1.92	1.28	.91	.70	.59	.53
DD-120 to -1000	2.32	1.55	1.11	.85	.71	.65
VIH-0.10	12.35	8.23	5.88	4.52	3.77	3.42
VIH-0.15 to -0.22	12.68	8.45	6.04	4.64	3.87	3.52
VIH-0.33 to -10.0	12.94	8.63	6.16	4.74	3.95	3.59
VIH-15.0 to -680	13.27	8.85	6.32	4.86	4.05	3.68
VIH-1000 to -4700	13.73	9.15	6.54	5.03	4.19	3.81
VIV-0.10	8.98	5.98	4.27	3.29	2.74	2.49
VIV-0.15 to -0.22	9.34	6.22	4.45	3.42	2.85	2.59
VIV-0.33 to -10.0	9.53	6.36	4.54	3.49	2.91	2.65
VIV-15.0 to -680	9.89	6.60	4.71	3.62	3.02	2.75
VIV-1000 to -4700	10.39	6.93	4.95	3.80	3.17	2.88
WEE V-L 0.1 to 0.12	13.96	9.30	6.65	5.11	4.26	4.05
WEE V-L 0.15 to 0.82	13.66	9.11	6.51	5.00	4.17	3.79
WEE V-L 1.0 to 820	11.73	7.82	5.58	4.30	3.58	3.25
WEE V-L 1000 to 22,000	15.30	10.20	7.29	5.60	4.67	4.25
WEE V-L 27,000 to 100,000	16.74	11.16	7.97	6.13	5.11	4.65

HIGH RELIABILITY MIL-C-39010/B INDUCTORS FAILURE RATE "P" (0.1%/1000 HOURS)

Spec., Value and Range	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
SHIELDED TYPE						
MIL-C-39010/B-1A **AR10K thru AR82K** 0.1 μH thru 0.82 μH	$10.16	$ 6.77	$4.84	$3.76	$3.10	$2.82
MIL-C-39010/B-2A **A1R0K thru A120K** 1.0 μH thru 12 μH	10.38	6.92	4.95	3.80	3.17	2.88
MIL-C-39010/B-3A **A150K thru A822K** 15 μH thru 8200 μH	12.28	8.19	5.85	4.50	3.75	3.41
MIL-C-39010/B-3A **A103K thru A104K** 10,000 μH thru 100,000 μH	18.87	12.57	8.80	6.78	5.63	5.12
UNSHIELDED TYPE						
MIL-C-39010/B-4A **BR15L thru BR47L** 0.15 μH thru 0.47 μH ±20% Tolerance	$6.16	$4.11	$2.93	$2.26	$1.88	$1.71
MIL-C-39010/B-4A **BR56K thru B2R7K** 0.56 μH thru 2.7 μH ±10% Tolerance	7.24	4.73	3.45	2.65	2.21	2.01
MIL-C-39010/B-5A **A3R3K thru A270K** 3.3 μH thru 27 μH ±10% Tolerance	8.12	5.42	3.87	2.98	2.48	2.25
MIL-C-39010/B-6A **BR15L thru BR47L** 0.15 μH thru 0.47 μH ±20% Tolerance	6.16	4.11	2.93	2.26	1.88	1.71
MIL-C-39010/B-6A **BR56K thru B4R7K** 0.56 μH thru 4.7 μH ±10% Tolerance	6.75	4.50	3.21	2.47	2.06	1.88
MIL-C-39010/B-7A **A5R6L thru A330K** 5.6 μH thru 33 μH ±10% Tolerance	7.24	4.83	3.45	2.65	2.21	2.01

WEE-CHIP INDUCTORS

A magnetically shielded, miniaturized, fixed inductor made especially for mounting on substrates. The inductor body is constructed of high stability, low-loss ferrite, combined with a coil cavity of optimum cross sectional area and mean radius, producing a unit having excellent Q factor. Copper terminations are of the wrap-around type for the greatest degree of mounting flexibility. Tolerance: ±10%.

Nytronics No.	Ind. μH	Min. Q at Freq. Q	Min. Q at Freq. MHz	Self-Resos. MHz	Max. DC Resis.	Max. Cur., mA
WCI-15	15	70	2.5	21.5	1.75	345
WCI-18	18	70	2.5	19.0	1.9	335
WCI-22	22	75	2.5	17.5	2.2	325
WCI-27	27	75	2.5	16.0	2.4	310
WCI-33	33	75	2.5	15.0	2.6	300
WCI-39	39	75	2.5	14.5	2.75	295
WCI-47	47	75	2.5	13.0	2.95	285
WCI-56	56	75	2.5	12.0	3.25	270
WCI-68	68	75	2.5	11.0	3.5	255
WCI-82	82	75	2.5	10.5	4.0	235
WCI-100	100	75	2.5	9.0	4.25	225
WCI-120	120	70	.79	8.5	4.5	215
WCI-150	150	70	.79	7.0	5.5	200
WCI-180	180	75	.79	6.5	6.5	190
WCI-220	220	75	.79	6.0	8.0	170
WCI-270	270	75	.79	5.5	12.0	140
WCI-330	330	75	.79	5.0	13.0	130
WCI-390	390	75	.79	4.5	14.0	120
WCI-470	470	75	.79	4.0	15.0	115
WCI-560	560	75	.79	3.5	22.0	100
WCI-680	680	70	.79	3.0	24.0	95
WCI-820	820	70	.79	2.5	26.0	90
WCI-1000	1000	70	.79	2.0	36.0	75

PRICES

Nytronics No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
PD-0.10 to -1.0	$ 3.57	$ 2.38	$ 1.70	$ 1.31	$1.09	$0.99
PD-1.2 to -4.7	3.93	2.62	1.87	1.44	1.20	1.09
PD-5.6 to -10	4.10	2.73	1.95	1.50	1.25	1.14
PD-12 to -27	4.52	3.01	2.15	1.66	1.38	1.26
PD-33 to -100	4.85	3.23	2.31	1.78	1.48	1.34
PD-120 to -1000	5.50	3.67	2.62	2.02	1.68	1.52
ATE-11-0.01 to -0.068	26.99	18.00	12.85	9.89	8.24	7.49
ATE-11-0.082 to -0.180	29.22	19.48	13.92	10.70	8.92	8.11
ATE-0-0.220 to -1.50	34.82	23.22	16.58	12.76	10.63	9.67
ATE-4-1.80 to -3.30	37.54	25.03	17.88	13.75	11.46	10.42
ATE-4-3.90 to -6.80	39.21	26.14	18.67	14.36	11.97	10.88
ATE-4-8.20 to -12.0	44.91	29.94	21.39	16.45	13.71	12.46
WCI-15 to -82	12.35	8.23	5.88	4.52	3.77	3.42
WCI-100 to -390	13.96	9.30	6.65	5.11	4.26	3.87
WCI-470 to -1000	15.53	10.35	7.39	5.69	4.74	4.31

NEW PEE-DEE DUCTORS

Microminiature, axial-lead RF inductors meet MIL-C-15305, Grade 2, Class 5 specifications. **Inductance Tolerance:** ±10%. **Operating Temperature:** −55° C to +125° C. **Size:** .075″ dia. x .140″ lg. **Leads:** #26 AWG, 1.5″ lg.

Nytronics No.	Ind. μH	Min. Q at Freq. Q	Min. Q at Freq. MHz	Min. Reson., MHz	Max. DC Ohms	Max. Cur., mA*
PD-0.10	0.10	42	25	500	0.2	600
PD-0.12	0.12	42	25	450	0.2	600
PD-0.15	0.15	42	25	400	0.25	575
PD-0.18	0.18	45	25	380	0.25	575
PD-0.22	0.22	45	25	360	0.30	565
PD-0.27	0.27	50	25	300	0.30	565
PD-0.33	0.33	45	25	280	0.35	560
PD-0.39	0.39	50	25	260	0.37	550
PD-0.47	0.47	50	25	250	0.39	535
PD-0.56	0.56	50	25	240	0.40	525
PD-0.68	0.68	50	25	220	0.45	500
PD-0.82	0.82	50	25	180	0.50	480
PD-1.0	1.0	50	25	170	0.60	450
PD-1.2	1.2	42	7.9	150	0.70	425
PD-1.5	1.5	45	7.9	130	0.80	400
PD-1.8	1.8	45	7.9	120	0.90	350
PD-2.2	2.2	45	7.9	110	1.3	320
PD-2.7	2.7	45	7.9	105	1.8	275
PD-3.3	3.3	35	7.9	100	1.1	340
PD-3.9	3.9	35	7.9	90	1.4	310
PD-4.7	4.7	35	7.9	85	1.6	290
PD-5.6	5.6	35	7.9	70	1.8	275
PD-6.8	6.8	40	7.9	65	2.0	250
PD-8.2	8.2	40	7.9	62	2.2	245
PD-10	10	45	7.9	60	3.0	210
PD-12	12	45	2.5	35	2.0	250
PD-15	15	45	2.5	30	2.2	245
PD-18	18	45	2.5	25	2.5	230
PD-22	22	45	2.5	23	2.7	220
PD-27	27	50	2.5	21	3.8	195
PD-33	33	50	2.5	20	4.5	170
PD-39	39	50	2.5	16	6.0	150
PD-47	47	50	2.5	14	6.5	145
PD-56	56	50	2.5	12	7.8	135
PD-68	68	55	2.5	10	8.6	130
PD-82	82	50	2.5	9.0	9.8	120
PD-100	100	55	2.5	8.0	11.5	110
PD-120	120	28	.79	7.0	15.0	90
PD-150	150	28	.79	6.0	16.5	88
PD-180	180	25	.79	5.5	22	75
PD-220	220	24	.79	5.2	31	62
PD-270	270	24	.79	5.0	38	56
PD-330	330	24	.79	4.8	42	53
PD-390	390	24	.79	3.6	58	47
PD-470	470	24	.79	3.4	60	45
PD-560	560	24	.79	3.2	65	43
PD-680	680	22	.79	3.0	90	36
PD-820	820	23	.79	2.5	95	34
PD-1000	1000	21	.79	2.0	130	30

NEW ADJUSTOROID INDUCTORS

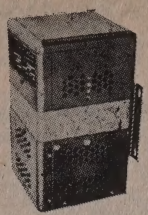
New development in the toroidal coil field; offers available toroid in one of three case sizes. Developed for PC and similar light weight applications. Meets MIL-C-15305A specifications. **Inductance Tuning Range:** ±5%. **Operating Temperature:** −55° C to +125° C. **Size:** ATE-11, ¾″ dia. x 1 3/16″ lg.; ATE-0, 1 1/16″ dia. x 1″ lg.; ATE-4, 1 5/16″ dia. x 1 3/16″ lg. **Leads:** #20 TCW.

ATE-11-0.010	.010	75	15	350	6	55
ATE-11-0.012	.012	75	15	300	8	51
ATE-11-0.015	.015	75	15	250	9	45
ATE-11-0.018	.018	75	15	250	10	41
ATE-11-0.022	.022	75	15	200	13	37
ATE-11-0.027	.027	75	15	200	14	34
ATE-11-0.033	.033	70	15	150	20	30
ATE-11-0.039	.039	70	15	150	22	28
ATE-11-0.047	.047	70	15	150	29	25
ATE-11-0.056	.056	70	15	100	32	23
ATE-11-0.068	.068	65	10	100	35	21
ATE-11-0.082	.082	65	10	100	48	19
ATE-11-0.100	.100	60	10	95	53	17
ATE-11-0.120	.120	60	10	90	58	16
ATE-11-0.150	.150	55	10	80	85	14
ATE-11-0.180	.180	55	10	70	92	13
ATE-0-0.220	.220	95	7	45	55	21
ATE-0-0.270	.270	95	7	40	76	19
ATE-0-0.330	.330	95	7	35	83	17
ATE-0-0.390	.390	90	6	35	111	16
ATE-0-0.470	.470	90	6	30	122	14
ATE-0-0.560	.560	90	6	25	181	12
ATE-0-0.680	.680	85	6	20	185	12
ATE-0-0.820	.820	85	6	20	202	11
ATE-0-1.00	1.00	85	5	20	291	10
ATE-0-1.20	1.20	80	5	20	320	9
ATE-0-1.50	1.50	80	5	15	358	8
ATE-4-1.80	1.80	100	4	13	198	14
ATE-4-2.20	2.20	90	3	12	220	13
ATE-4-2.70	2.70	90	3	11	300	11
ATE-4-3.30	3.30	90	3	9	331	10
ATE-4-3.90	3.90	80	2	8	455	9
ATE-4-4.70	4.70	80	2	7	500	8
ATE-4-5.60	5.60	80	2	7	545	8
ATE-4-6.80	6.80	60	1.5	6	785	7
ATE-4-8.20	8.20	60	1.5	5	862	6
ATE-4-10.0	10.0	40	1	5	1207	6
ATE-4-12.0	12.0	40	1	4	1323	5

*Based on temperature rise not to exceed 35° C at 90° C ambient.

LINE VOLTAGE REGULATORS

SOLATRON® ±½% LINE VOLTAGE REGULATORS



Unique Solatron static-magnetic line voltage regulator combines in one compact unit, fast response, "tight" voltage regulation, adjustable output, remote sensing, high kVA capacity, using no moving parts. Withstands high inrush load currents and momentary overloads, therefore, making it unnecessary to oversize kVA ratings. Combines the ruggedness typical of transformers with the light weight of electronic control circuitry resulting in a regulator of remarkable compactness.

SINGLE-PHASE (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
33-16-150	.5	+10/−20%	108–132	40	$543.00
33-16-210	1	+10/−20%	108–132	58	596.00
33-26-210	1	+10/−20%	216–264	58	596.00
33-16-220-6	2	+10/−20%	104–125	81	797.00
33-26-220-6	2	+10/−20%	208–250	81	797.00
33-16-230-6	3	+10/−20%	104–125	95	916.00
33-26-230-6	3	+10/−20%	208–250	95	916.00
33-16-250-6	5	+10/−20%	104–125	127	1195.00
33-26-250-6	5	+10/−20%	208–250	127	1195.00
33-46-250-6	5	+10/−20%	416–500	127	1195.00
33-16-275-6	7.5	+10/−20%	104–125	168	1481.00
33-26-275-6	7.5	+10/−20%	208–250	168	1481.00
33-46-275-6	7.5	+10/−20%	416–500	168	1481.00
33-16-310-6	10	+10/−20%	104–125	193	1595.00
33-26-310-6	10	+10/−20%	208–250	193	1595.00
33-46-310-6	10	+10/−20%	416–500	193	1595.00
33-16-315	15	+10/−20%	108–132	400	1736.00
33-06-315	15	+10/−20%	188–228	400	1736.00
33-26-215	15	+10/−20%	216–264	400	1736.00
33-16-325	25	+10/−20%	108–132	520	$2307.00
33-06-325	25	+10/−20%	188–228	520	2307.00
33-26-325	25	+10/−20%	216–264	520	2307.00
33-46-325	25	+10/−20%	432–528	520	2307.00
31-16-337	37.5	+10/−10%	108–132	525	2750.00
31-26-337	37.5	+10/−10%	216–264	525	2750.00
31-46-337	37.5	+10/−10%	432–528	525	2750.00
31-16-350-5	50	+10/−10%	114–126	1050	3328.00
31-26-350-5	50	+10/−10%	228–252	1050	3328.00
31-46-350-5	50	+10/−10%	456–504	1050	3328.00
31-16-375-5	75	+10/−10%	114–126	1625	4169.00
31-26-375-5	75	+10/−10%	228–252	1625	4169.00
31-46-375-5	75	+10/−10%	456–504	1625	4169.00
31-16-410-5	100	+10/−10%	114–126	1900	4992.00
31-26-410-5	100	+10/−10%	228–252	1900	4992.00
31-46-410-5	100	+10/−10%	456–504	1900	4992.00
31-16-415-5	150	+10/−10%	114–126	2200	5980.00
31-26-415-5	150	+10/−10%	228–252	2200	5980.00
31-46-415-5	150	+10/−10%	456–504	2200	5980.00

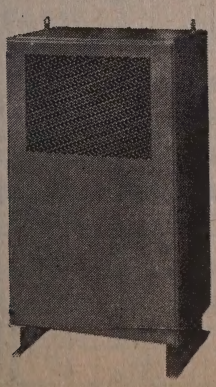
THREE-PHASE DELTA (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
39-29-217	1.7	+10/−20%	216–264	265	$1700.00
39-29-235-6	3.5	+10/−20%	216–264	325	2132.00
39-29-252-6	5.2	+10/−20%	216–264	370	2372.00
39-09-285-6	8.5	+10/−20%	188–228	452	2912.00
39-29-285-6	8.5	+10/−20%	216–264	452	2912.00
39-49-285-6	8.5	+10/−20%	432–528	452	2912.00
39-09-313-6	13	+10/−20%	188–228	558	3536.00
39-29-313-6	13	+10/−20%	216–264	558	3536.00
39-49-313-6	13	+10/−20%	432–528	558	3536.00
39-09-317-6	17	+10/−20%	188–228	1000	3943.00
39-49-317-6	17	+10/−20%	432–528	1000	3943.00
39-09-326	26	+10/−20%	188–228	1300	4657.00
39-29-326	26	+10/−20%	216–264	1300	4657.00
39-49-326	26	+10/−20%	432–528	1300	4657.00
39-09-343	43	+10/−20%	188–228	1645	6177.00
39-29-343	43	+10/−20%	216–264	1645	6177.00
39-49-343	43	+10/−20%	432–528	1645	6177.00
37-29-365	65	+10/−10%	216–264	1660	5594.00
37-49-365	65	+10/−10%	432–528	1660	5594.00

THREE-PHASE WYE (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
39-06-215	1.5	+10/−20%	108–132	210	$1523.00
39-06-230	3	+10/−20%	108–132	265	1682.00
39-06-260-6	6	+10/−20%	108–132	325	2132.00
39-06-290-6	9	+10/−20%	108–132	370	2372.00
39-06-315-6	15	+10/−20%	108–132	452	2910.00
39-46-315-6	15	+10/−20%	250–304	452	2910.00
39-06-322-6	22.5	+10/−20%	108–132	558	3536.00
39-46-322-6	22.5	+10/−20%	250–304	558	3536.00
39-06-330-6	30	+10/−20%	108–132	610	3943.00
39-06-345	45	+10/−20%	108–132	787	4657.00
39-46-345	45	+10/−20%	250–304	787	4657.00
39-06-375	75	+10/−20%	108–132	960	6179.00
39-46-375	75	+10/−20%	250–304	960	$6179.00
37-46-410-5	100	+10/−10%	264–290	2100	7853.00
37-06-411-8	112.5	+10/−10%	108–132	2660	8457.00
37-06-415-5	150	+10/−10%	114–126	3450	9352.00
37-46-415-5	150	+10/−10%	264–290	3450	9352.00
37-06-422-5	225	+10/−10%	114–126	3700	10422.00
37-46-422-5	225	+10/−10%	264–290	3700	10422.00
37-06-430-5	300	+10/−10%	114–126	4800	11623.00
37-46-430-5	300	+10/−10%	264–290	4800	11623.00
37-06-450-5	500	+10/−10%	114–126	6000	15013.00
37-46-450-5	500	+10/−10%	264–290	6000	15013.00

50 Hz UNITS AVAILABLE ON REQUEST



SOLATRON FOR COMPUTERS

Improved Solatron LVR for computers designed specifically to meet stringent requirements of E.D.P. equipment. **Voltage:** 208/230 V nom. Input: 3 phase, +10/−20% range. Output Regulation: ±1% for any combination of line, load, thermal drift, warm-up and frequency. Capable of remote sensing. **Frequency:** 57–63 Hz. **Output Voltage Adjustability:** Continuously adjustable from 208 to 230 volts. **Transient Response Time:** Starts immediately. Complete within 4572 cycles. **Power Efficiency:** 95% typical (watts). **VA Efficiency:** 85% typical. **Load Power Factor:** With little derating, .75 lagging to .95 leading. Without derating, .95 lagging to unity. **Regulation:** Line regulation, ±¼%; load regulation, ±¼%; line and load, ±½%. **Maximum Harmonics:** Balanced line and load, 35% maximum; unbalanced line and/or load, 6% maximum.

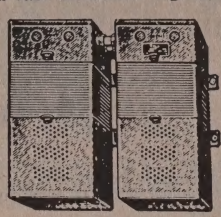
Sola No.	Output kVA	Size			Shpg. Wt., Lbs.	Net Each
		Width	Depth	Height		
39-59-310	10	27″	20″	50″	540	$ 4239.00
39-59-315	15	27″	20″	50″	700	4745.00
39-59-325	25	36″	27″	65″	1,080	5225.00
39-59-350	50	36″	27″	65″	1,510	8343.00
39-59-375	75	36″	27″	65″	1,785	12516.00
39-59-410*	100	36″	27″	65″	1,200	15891.00
39-59-415*	150	36″	27″	65″	1,385	23084.00
39-59-422*	225	36″	27″	65″	1,585	31892.00

*Regulators consist of 3 cabinets. Size and weight specifications are for each cabinet.

CVS/CVN SERIES CONSTANT VOLTAGE TRANSFORMERS

Regulate voltage output within ±½% regardless of input voltage variations as great as ±15%. Ultra-fast regulating action—response time is 1.5 Hz or less. Provide fully automatic, continuous regulation with no manual adjustments needed. In tables, figure column indicates case structure: Fig. A, single housed unit with exposed core end housings and screw terminals in outlet box; Fig. B, same as A but duplex assembly; Fig. C, drawn case with integral capacitor; Fig. D, end bell unit with exposed core and separate capacitor.

A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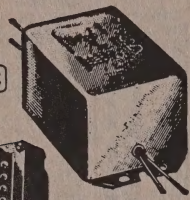
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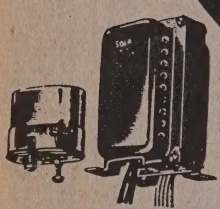
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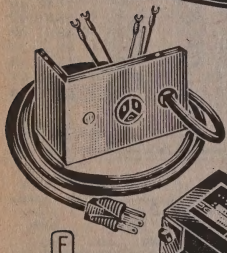
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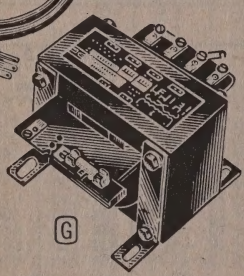

G

CVS SERIES SINUSOIDAL TYPE

Less than 3% harmonic content. Excellent for equipment having elements sensitive to power frequencies harmonically related to fundamental. No filters employed.

CVS UNITS FOR 60 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each*
23-13-030-2	A	30	95–130	120	c	6⅛ x 5 3/16 x 3¼	$ 50.50
23-13-060-2	A	60	95–130	120	c	6 15/16 x 5 3/16 x 3¼	60.10
23-22-112-2	A	120	95–130 x 190–260	120	c	8⅛ x 5 3/16 x 3¼	77.10
23-22-125	A	250	95–130 x 190–260	120	a	9⅝ x 7 1/16 x 4½	105.00
23-22-150	A	500	95–130 x 190–260	120	b	12 7/16 x 6 7/16 x 7 25/32	170.95
23-23-060-2	A	60	190–260 x 380–520	120	c	6 15/16 x 5 3/16 x 3¼	65.60
23-23-112-2	A	120	190–260 x 380–520	120	c	8⅛ x 5 3/16 x 3¼	81.70
23-23-125	A	250	190–260 x 380–520	120	a	9⅝ x 7 1/16 x 4½	111.50
23-25-175	A	750	95–130 x 175–235 x 190–260	120 x 240	b	16 13/16 x 6 7/16 x 7 25/32	218.65
23-25-210	A	1000	95–130 x 175–235 x 190–260	120 x 240	.....	17⅞ x 6⅞ x 7 25/32	266.35
23-25-215	A	1500	95–130 x 175–235 x 190–260	120 x 240	.....	19 5/16 x 9 1/32 x10 9/16	358.90
23-25-220	A	2000	95–130 x 175–235 x 190–260	120 x 240	.....	19⅞ x 9 1/32 x10 9/16	453.40
23-25-230-3	A	3000	95–130 x 175–235 x 190–260	120 x 240	.....	21⅞ x 9 1/16 x10 9/16	630.20
23-25-250	B	5000	95–130 x 175–235 x 190–260	120 x 240	.....	20 13/16 x 9 1/32 x25 13/16	984.50
23-26-150	A	500	190–260 x 380–520	120 x 240	b	12 7/16 x 6 7/16 x 7 25/32	169.35
23-26-210	A	1000	190–260 x 380–520	120 x 240	.....	17⅞ x 6⅞ x 7 25/32	267.00
23-26-220	A	2000	190–260 x 380–520	120 x 240	.....	19⅞ x 9 1/32 x10 9/16	454.65
23-26-230	A	3000	190–260 x 380–520	120 x 240	.....	21⅞ x 9 1/32 x10 9/16	630.20
23-26-250	B	5000	190–260 x 380–520	120 x 240	.....	20 13/16 x 9 1/32 x25 13/16	984.50

CVS UNITS FOR 50 Hz, SINGLE PHASE

23-13-560-2	A	60	95–130	120	c	7¼ x 5 13/16x 3¼	$ 68.80
23-22-612	A	120	95–130 x 190–260	120	a	8¾ x 7 1/16 x 4½	89.25
23-22-625	A	250	95–130 x 190–260	120	b	11 5/16 x 6 7/16 x 7 25/32	120.15
23-22-650-1	A	500	95–130 x 190–260	120	b	13 x 6 7/16 x 7 25/32	180.55
23-23-560-2	A	60	190–260 x 380–520	120	c	7¼ x 5 13/16x 3¼	74.35
23-25-710	A	1000	95–130 x 175–235 x 190–260	120 x 240	.....	18⅞ x 9 1/32 x10 9/16	311.85

CVN SERIES NORMAL HARMONIC TYPE

Average 20% total rms harmonic content. Ideal for DC outputs and where harmonics are meaningless.

CVN UNITS FOR 60 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each*
20-10-015	C	15	95–130	120	.....	5 5/16 x 3½ x 2⅝	$ 35.35
20-13-030-2	A	30	95–130	120	c	5⅞ x 5 3/16 x 3¼	43.45
20-13-060-2	A	60	95–130	120	c	6 1 1/32 x 5 3/16 x 3¼	51.25
20-13-112-2	A	120	95–130	120	c	7⅜ x 5 3/16 x 3¼	67.10
20-13-115	A	150	95–130	120	a	8¾ x 7 1/16 x 4½	81.40
20-14-015	D	15	95–130	120	.....	2 1 1/32 x 4 5/16 x 2 1/16	31.85
20-14-030	D	30	95–130	120	.....	2 1 1/32 x 4 5/16 x 3 5/16	37.10
20-14-060	D	60	95–130	120	.....	3⅛ x 4 13/16x 3 7/8	43.15
20-14-112	D	120	95–130	120	.....	3⅛ x 4 13/16x 4 13/16	67.10
20-21-112-2	A	120	190–260	240	c	7⅜ x 5 3/16 x 3¼	67.10
20-22-125	A	250	95–130 x 190–260	120	b	11 1/16 x 6 7/16 x 5 29/32	99.25
20-22-150	A	500	95–130 x 190–260	120	b	12 5/16 x 6 7/16 x 5 29/32	151.65
20-22-210	A	1000	95–130 x 190–260	120	.....	15⅛ x 6 7/16 x 5 29/32	251.55
20-23-125	A	250	190–260 x 380–520	120	b	11⅛ x 6 7/16 x 5 29/32	100.75
20-25-220	A	2000	95–130 x 175–235 x 190–260	120 x 240	.....	20 x 9 1/32 x 8⅜	406.65
20-25-230	A	3000	95–130 x 175–235 x 190–260	120 x 240	.....	22 x 9 1/32 x 8⅜	607.60
20-26-150	A	500	190–260 x 380–520	120 x 240	b	12 5/16 x 6 7/16 x 5 29/32	162.95
20-27-250	A	5000	190–260 x 380–520	120 x 240	.....	21 x12 5/8 x11⅞	957.35

CVN UNITS FOR 50 Hz, SINGLE PHASE

20-10-515	C	15	95–130	120	.....	5 5/16 x 3½ x 2⅝	$ 39.10
20-13-530-2	A	30	95–130	120	c	6 5/32 x 5 3/16 x 3¼	53.80
20-13-560-2	A	60	95–130	120	c	6 3/16 x 5 3/16 x 3¼	58.80
20-13-612	A	120	95–130	120	a	8¾ x 7 1/16 x 4½	85.65
20-13-615	A	150	95–130	120	a	9 1/16 x 7 1/16 x 4½	101.60
20-22-625	A	250	95–130 x 190–260	120	b	11 7/16 x 6 7/16 x 5 29/32	116.65
20-22-650	A	500	95–130 x 190–260	120	b	12 13/16 x 6 7/16 x 5 29/32	173.95
20-22-710	A	1000	95–130 x 190–260	120	.....	18 7/16 x 9 1/32 x 8⅜	292.35
20-26-650	A	500	190–260 x 380–520	120 x 240	b	12 13/16 x 6 7/16 x 5 29/32	186.70

*Cord/Receptacle Adapter Kits available; see table, left, for code explanation.

CORD/RECEPTACLE ADAPTER KITS

Provide convenience of input plug and output receptacle for most Series CVS and CVN single housed transformers (Fig. A). To determine the correct adapter kit for a given transformer, refer to Kit Code column in the CVS/CVN tables at right. Description column below indicates 2-wire or 3-wire input cord and output receptacle connections.

Kit Code	Sola Kit No.	Fig.	Description	Net Each
a	999-005	E	2-wire	$8.95
a	999-019	E	3-wire	8.95
b	999-009	E	2-wire	8.95
b	999-020	E	3-wire	8.95
c	999-104	F	2-wire	9.50
c	999-105	F	3-wire	9.50

★QUANTITY DISCOUNTS

Quantity	Discounts
1–9	None
10–49	– 9%
50–99	–19%

CONTROL TRANSFORMERS (FIG. G)

Single phase control transformers for multiple usage with relays, solenoids, recording devices and similar applications. Available in triple voltage, dual frequency of 50/60 Hz at 240/480–120 volts, 230/460–115 volts, and 220/440–110 volts. All models have 55° C temperature rise.

Sola No.	KVA	Overall Size, Inches	Weight, Lbs.	Net Each 1-4
35-10-025	.025	3 5/16 x 3 x 2 3/16	2	$ 7.00
35-10-050	.050	3 5/16 x 3 x 2 3/16	2½	8.40
35-10-075	.075	3 1 9/32 x 3 3/8 x 2⅞	3½	9.70
35-10-100	.100	3 2 5/32 x 3 3/8 x 2⅞	3½	11.00
35-10-150	.150	4 7/16 x 4½ x 3 13/16	6½	13.30
35-10-200	.200	4 1 1/16 x 4½ x 3 13/16	7½	15.80
35-10-250	.250	5 1/16 x 4½ x 3 13/16	9	18.90
35-10-300	.300	4 15/16 x 5¼ x 4⅝	11¼	20.60
35-10-350	.350	5 5/16 x 5¼ x 4⅝	13	22.80
35-10-500	.500	6 x 5¼ x 4⅝	16¼	27.50
35-10-750	.750	6 1 1/32 x 6⅜ x 5⅝	24	39.10
35-10-210	1.0	7 3/16 x 6⅜ x 5⅝	30½	47.70

THE STATE-OF-THE ART IN MODULAR POWER SUPPLIES: TOTALLY INTERCHANGEABLE, ZERO MAINTENANCE, LONG LIFE, FAIL-SAFE PERFORMANCE, AND LOW COST.

PREMIUM MODULAR POWER SUPPLIES (FIG. H)

High performance, IC regulated power supplies are completely protected from overvoltage, overtemperature, and short circuit. Convectionally cooled modular power supplies give 0.01% + line or load regulation. Power supplies with 0.01% RMS PARD, have integrated circuit for increased stability. Fully equipped with remote sensing and automatic current limiting.

Sola No.	Output Voltage Adjustment	Output Current Amps	Net Each*
82-05-315	4.8– 5.5 V	15	$165.00
82-12-270	11.5–12.5 V	7	165.00
82-15-258	14.5–15.5 V	5.8	165.00
82-24-240	23–25 V	4	165.00
82-05-325	4.8– 5.5 V	25	215.00
82-12-312	11.5–12.5 V	12	215.00
82-15-296	14.5–15.5 V	9.6	215.00
82-24-260	23–25 V	6	215.00
82-48-230	46–50 V	3	215.00

OEM MODULAR POWER SUPPLIES (FIG. I)

Completely interchangeable series regulated power supplies come with remote sensing and short circuit protection. Convectionally cooled power supplies give a regulation of 0.05% +1 mV on line voltage or under full load. Constant voltage power supplies have 0.01% rms PARD. Built-in automatic current limiting. Can be operated on bench or rack mounted.

Sola No.	Power Watts	Output Voltage Adjustment	Output Current Amps	Net Each*
81-05-230*	15	5–6	3–2.5	$25.50
81-12-215*	15	12–15	1.5–1.2	25.50
81-24-180*	15	24	.8	25.50
83-05-230	30	4.8–5.5	3	29.00
83-12-218	30	11.5–12.5	1.8	29.00
83-15-216	30	14.5–15.5	1.6	29.00
83-24-212	30	23–25	1.2	29.00
83-05-260	60	4.8–5.5	6	59.00
83-12-250	60	11.5–12.5	5	59.00
83-15-240	60	14.5–15.5	4	59.00
83-24-225	60	23–25	2.5	59.00
83-05-312	120	4.8–5.5	12	89.50
83-12-310	120	11.5–12.5	10	89.50
83-15-280	120	14.5–15.5	8	89.50
83-24-260	120	23–25	6	89.50
83-48-230	120	46–50	3	89.50

CVDC MODULAR POWER SUPPLIES (FIG. J)

Long life, low cost modular power supplies are completely protected from short circuits. Convectionally cooled modular power supplies come with regulation of 1% line on 4% to 10% load, and 3% RMS PARD. Ferroresonant design for high reliability.

Sola No.	DC Output V	DC Output Amps	DC Output VA	Load Regulation ½ l.-f.l.	Load Regulation ¼ l.-f.l.	Max. Ripple rms	Net Each*
28-04-315*	4.0	15	60	0.5	0.8	0.4	$100.00
28-05-315*	5.2	15	78	0.5	0.8	0.4	100.00
28-06-315*	6.3	15	95	0.5	0.8	0.4	100.00
28-10-312*	10.0	12	120	0.6	1.0	0.4	100.00
28-12-310*	12.0	10	120	0.6	1.0	0.4	100.00
28-15-280*	15.0	8	120	0.8	1.3	0.3	100.00
28-18-267*	18.0	6.7	120	0.8	1.3	0.3	100.00
28-24-250*	24.0	5	120	1.0	1.7	0.3	100.00
28-28-243*	28.0	4.3	120	1.2	2.0	0.3	100.00
28-48-225*	48.0	2.5	120	2.0	3.4	0.4	100.00
28-04-325†	4.0	25	100	0.5	0.8	0.4	149.00
28-05-325†	5.2	25	130	0.5	0.8	0.4	149.00
28-06-325†	6.3	25	155	0.5	0.8	0.4	149.00
28-10-318†	10.0	18	180	0.6	1.0	0.4	149.00
28-12-315†	12.0	15	180	0.6	1.0	0.4	149.00
28-15-312†	15.0	12	180	0.6	1.0	0.3	149.00
28-18-310†	18.0	10	180	0.6	1.0	0.3	149.00
28-24-280†	24.0	8	192	0.7	1.2	0.3	149.00
28-28-270†	28.0	7	196	0.7	1.2	0.3	149.00
28-48-240†	48.0	4	196	1.0	1.7	0.3	149.00

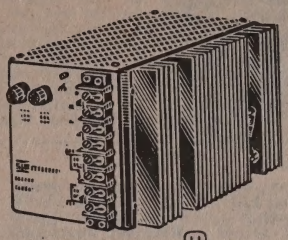
*Shipping Weight, 14 lbs. †Shipping Weight, 19 lbs.

●QUANTITY DISCOUNTS OEM & PREMIUM

Qty.	Discount	Multiplier	Qty.	Discount	Multiplier
1–9	None	None	25–49	−10%	.90
10–24	−5%	.95	50–99	−15%	.85

★QUANTITY DISCOUNTS CVDC REGULATED

Qty.	Discount	Multiplier	Qty.	Discount	Multiplier
1–9	None	None	25–49	−10%	.90
10–24	−5%	.95	50–99	−15%	.85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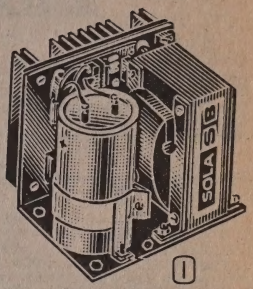

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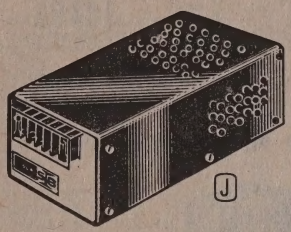
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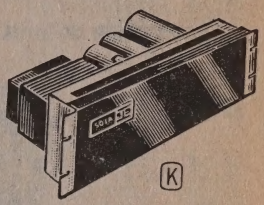
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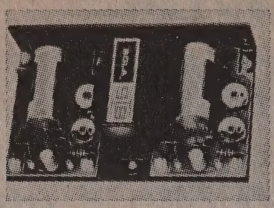
CVDC REGULATED DC POWER SUPPLIES WITH FIXED OUTPUT (FIG. K)

Static-magnetic devices with fixed regulated DC output. Rugged, simple and dependable; for computers, data processing, measurement, telemetering, and wherever isolation from line fluctuation is required. Consists of a constant voltage transformer, rectifier and filter circuit. Provides tight regulation, quick response, isolation and current limiting, high efficiency and reliability; no-maintenance operation. **Regulation:** Handles rough voltage inputs; holds output voltage of ±1% or less for input variations as great as ±15% of nominal input voltage. Rated input range is 100–130 V, 60 Hz. **Response Time:** Output voltage will return to regulation envelope within 25 msec. **Frequency:** Actual variation is linear over ±5% change in frequency from 60 Hz, approx. 1.4% voltage increase for 1% frequency increase. **Load Regulation:** Resistive loads (unity pF) within load rating will cause nominal output to drop from no load to full load. Inductive loads (lagging pF) cause nominal output to decrease with power factor. Leading pF similarly causes a voltage rise. **Efficiency:** 80–90% full load. Input power factor is approx. 0.8. **Ripple:** Total content does not exceed 1% rms. **Short Circuit Protection:** Automatic current limiting is inherent in transformer; limited to approx. 250% of rated value. **Operating Temperature:** 0° to 50° C ambient; output voltage will change approx. 1% for every 40° C change in temperature. **Multiple Operation:** Two or three units can be paralleled for higher output current rating, or connected in series for higher output voltage. **Three-Phase Operation:** Achieved by connecting inputs of three units of the same type to the line and connecting outputs in parallel. **Mounting:** Standard 19″ wide rack panel.

Sola Number	DC Output V	DC Output Amps	DC Output VA	Load Regulation 20% f.l.	Load Regulation 50% f.l.	Size, Inches Panel Ht.	Size, Inches Depth	Net Each*
28-1513-2	6	10	60	9%	7%	3½	7⅝	$160.00
28-2123-1	6	15	90	10%	7%	5¼	7¼	185.00
28-1514-2	12	5	60	7%	5%	3½	7⅝	160.00
28-2124-1	12	10	120	9%	5%	5¼	7¼	185.00
28-1845-2	12	15	180	10%	7%	5¼	7¼	185.00
28-1515-2	18	5	90	5%	4%	3½	7⅝	160.00
28-2125-1	18	10	180	7%	5%	5¼	7¼	185.00
28-1024-1	24	6	144	5%	4%	5¼	9¾	185.00
28-2126-1	24	10	240	6%	4%	5¼	8¾	185.00
28-1203-2	24	15	360	7%	5%	7	7¼	199.00
28-2127-1	24	25	600	7%	5%	8¾	9	259.00
28-626-2	28	8	224	6%	4%	5¼	8¾	185.00
28-2128-1	28	15	420	7%	5%	7	7¼	199.00
28-1048	48	4	192	3.5%	2.5%	5¼	9¾	185.00
28-1561-2	48	10	480	4%	2%	5¼	9¾	185.00
28-2129-1	48	20	960	4%	2.5%	8¾	9¾	259.00
28-1125-1	125	2	250	2.5%	1.5%	5¼	9¾	185.00
28-1150-1	150	2	300	2%	1.5%	5¼	9¾	185.00
28-1200	200	1	200	3%	2%	5¼	9¾	185.00
28-1250	250	1	250	3%	2%	5¼	9¾	185.00

POWER SUPPLIES AND AC POWER SOURCES

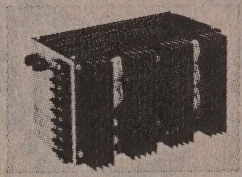
SERIES REGULATED POWER SUPPLIES DUAL AND TRIPLE OUTPUTS



Completely interchangeable power supplies with remote sensing and short circuit protection. **Input:** 120/240 VAC ±10%, 47–420 Hz. **Regulation:** Line and load combined, ±0.1%. **Ripple:** 0.01% rms. **Operating temperature:** 0° C to 55° C. **Recovery time:** Less than 50 microseconds.

Sola No.	Output Volts	Output Amps	Net Each
83-12-2180	±12	.8	$ 38.00
83-15-2170	±15	.7	38.00
83-12-2218	±12	1.8	55.00
83-15-2216	±15	1.6	55.00
83-12-2250	±12	5.0	109.00
83-15-2240	±15	4.0	109.00
83-12-3218	±12 5	1.8 6.0	98.00
83-15-3216	±15 5	1.6 6.0	98.00

PREMIER MODULAR POWER SUPPLIES



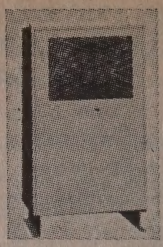
High performance, IC regulated power supplies completely protected from short circuits. Automatic current limiting and remote sensing. A low-cost version of the Premium Series. **Input:** 120/240 VAC ±10%, 47 −420 Hz. **Regulation:** Line or load, ±0.1%. **Ripple:** 0.1% rms. **Operating temperature:** 0° C to 55° C. **Recovery time:** Less than 50 microseconds.

Sola No.	Output Volts	Output Amps	Net Each
82-05-315-50	4.8–5.5	15	$119.00
82-12-270-50	11.5–12.5	7	119.00
82-15-258-50	14.5–15.5	5.8	119.00
82-24-240-50	23–25	4	119.00
82-05-325-50	4.8–5.5	25	165.00
82-12-312-50	11.5–12.5	12	165.00
82-15-296-50	14.5–15.5	9.6	165.00
82-24-260-50	23–25	6	165.00
82-48-230-50	46–50	3	165.00

SOLA® SOLIDS PC BOARD DC SUPPLIES (FIG. J)

A series regulated solid power supply specifically designed for printed circuit board mounting. Output can be shorted without damaging supply. **Input:** 115 VAC ± 10 VAC, 50–400 Hz. **Output voltage accuracy:** ±2%. **Line/Load regulation:** .02% or 2.5 mV. **Operating temp.:** −25° C to +71° C.

Sola No.	DC Output Volts	DC Output Amps	PARD mVrms	Size H″	Size W″	Size D″	Net Each
84-05-150	5	.5	1	.875	2.5	3.5	$44.00
84-05-210	5	1.0	1	1.25	2.5	3.5	65.00
84-05-220	5	2.0	1	1.62	2.5	3.5	89.00
84-12-110	12	.1	.5	1.0	1.75	2.25	25.00
84-15-110	15	.1	.5	1.0	1.75	2.25	25.00
84-12-2112	±12	.12 ea.	.5	.875	2.5	3.5	49.00
84-12-2124	±12	.24 ea.	.5	1.25	2.5	3.5	65.00
84-12-2140	±12	.4 ea.	.5	1.62	2.5	3.5	99.00
84-15-2025	±15	.025 ea.	2.0	.875	2.5	3.5	29.00
84-15-2110	±15	.1 ea.	.5	.875	2.5	3.5	48.00
84-15-2120	±15	.2 ea.	.5	1.25	2.5	3.5	65.00
84-15-2135	±15	.35 ea.	.5	1.62	2.5	3.5	99.00



UNINTERRUPTIBLE AC POWER SOURCES (FIG. L)

An uninterruptible power source combines a rectifier charger, battery bank, solid-state inverter and a bypass switch to insure clean, continuous AC power to any critical load. The AC to DC converter simultaneously charges the battery and furnishes power to the inverter. If a loss of AC input power occurs, the inverter continues to draw power from the battery, thereby supplying power to the load. Since the battery is always connected to the inverter, there is no switchover time, hence no noticeable voltage fluctuations to the load. The AC output of the uninterruptible power source is synchronized with the AC input under normal conditions; however, during an input power failure the output frequency is determined by a stable internal oscillator. The output stage of the uninterruptible power source utilizes the CVS transformer design to provide good regulation and excellent power-line noise rejection.

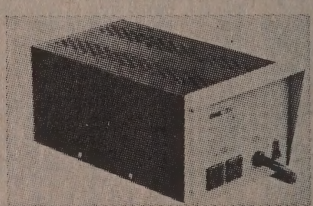
Sola No.	Voltage Input	Voltage Output	KVA	Ph	Dimensions H	Dimensions W	Dimensions D	Net Each
26-1037	90–135	120	1.2	1	24½	19	19	$ 2,240.00
26-1038	120	120	2.5	1	50	27	20	3,320.00
26-1039	120/240	120/240	5.0	1	50	48	20	6,270.00
26-1040	120/240	120/240	10.0	1	50	27-48	20-20	9,452.00
26-1041	120/208	120/208	7.5	3	50	27-48	20-20	7,270.00
26-1042	120/208	120/208	15.0	3	50	27-48	20-20	13,730.00
26-1043	120/208	120/208	30.0	3	50	48	20	25,450.00

STANDBY AC POWER SYSTEMS (FIG. L)

A unique standby AC power source that provides line voltage regulation and isolation even when the input AC power line has not failed. During normal line conditions, the transformer is providing transient and brownout protection for loads such as computers that are adversely affected by these typical power-line conditions. When the power-line voltage falls below a preset operating level, the bypass switch transfers the load and the regulator to a solid-state inverter. Power for the inverter is then supplied from a battery bank. There is a short time delay of power to the load during the transfer. If the load is so critical that the 200 msec transfer time loss cannot be tolerated, an Uninterruptible power source should be used.

Sola No.	Voltage Input	Voltage Output	KVA	Ph	Dimensions H	Dimensions W	Dimensions D	Net Each
26-1036	90–135	120	1.2	1	14	19	21	$ 1,250.00
26-1044	120	120	2.5	1	14	19	21	2,490.00
26-1045	120/240	120/240	5.0	1	50	27	20	4,703.00
26-1046	120/240	120/240	10.0	1	50	48	20	7,089.00
26-1047	120	90	7.5	3	50	48	20	5,794.00
26-1048	120	180	15.0	3	65	36	27	10,941.00

AC POWER LINE REGULATORS FOR MINICOMPUTERS (FIG. M)



A portable, quiet power line regulator suitable for installation in the typical business office utilizing minicomputers. **Operating temperature range:** −20° C to 50° C. **Common mode noise rejection:** 60 dB. **Full load efficiency:** 85%. On-Off switch and dual output receptacles. No loss of output for line loss of 3 msec.

Sola No.	Voltage Input	Voltage Output	VA	Dimensions L	Dimensions W	Dimensions D	Net Each
FOR 60 HERTZ, SINGLE PHASE							
63-13-150	120	95–130	500	18.6	8.9	8.7	$198.30
63-13-175	120	95–130	750	18.6	8.9	8.7	253.65
63-13-210	120	95–130	1000	18.6	8.9	8.7	292.50
63-13-220	120	95–130	2000	18.6	8.9	8.7	498.75
FOR 50 HERTZ, SINGLE PHASE							
63-13-650	110	90–130	500	18.8	11.4	9.6	$230.00
63-13-710	110	90–130	1000	18.8	11.4	9.6	339.80
63-13-720	110	90–130	2000	18.8	11.4	9.6	578.55

POWERSTAT® VARIABLE TRANSFORMERS WITH POWERKOTE® COILS

10B

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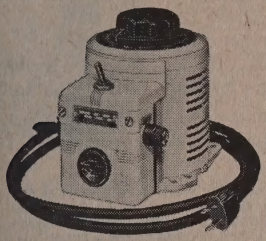
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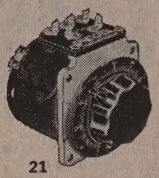
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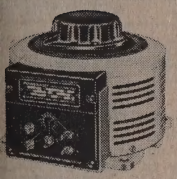
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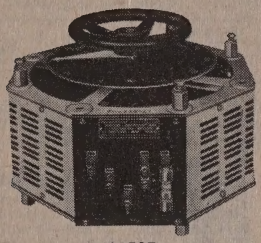
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POWERSTAT Variable Transformers with POWERKOTE Coils give an average of 20% higher current ratings, 10:1 greater overload capability, longer life, greater resistance to fungus, salt spray and other contaminating atmospheres. POWERKOTE Coil commutator bars are embedded in place, preventing steady-state operating temperature and severe overloads from distorting the commutator. POWERSTAT Variable Transformers deliver continuously adjustable voltage from AC lines; feature rugged construction, precious metal-plated commutators, excellent regulation, high efficiency and conservative ratings. They introduce no waveform distortion. Manual and motorized single and ganged assemblies are offered in ratings from .13 to 244 kVA. For complete technical data request current POWERSTAT catalog.

ADJUSTABLE SPEED DRIVES

Motor-driven units in Series 116B-216B, 117B-217B, 126-226, 136B-236B and 146-246 are available with adjustable speed drives which permit full range output voltage to be controlled at any speed, 5 to 200 secs. **To Order:** Add prefix **AM** to type number and **$200.00** to the motor driven price. For adjustable speed control **BHP65455-G1,** add **$14.70** to price.

SINGLE PHASE

Superior Number‡	Line Volts	Frequency Hz	Output Volts	Output Max. Amps	Output Max. kVA	Net Each Manual	Net Each Motor* Driven
10B	120	60■	0–132	2.25#	0.30	$ 16.00	.....
21	120	50/60	0–140	5	0.63	24.11	$ 174.11
116BU	120	50/60	0–140	10	1.4	31.75	181.75
116B§	120	50/60	0–140	10	1.4	42.92	192.92
117BT	120	60	0–120	12	1.4	44.10	194.10
126U	120	50/60	0–140	15	2.1	58.21	258.21
126	120	50/60	0–140	15	2.1	64.68	264.68
3PN126	120	50/60	0–140	15	2.1	81.73	281.73
136B	120	50/60	0–140	22	3.1	91.73	291.73
3PN136B	120	50/60	0–140	22	3.1	118.78	318.78
146	120	50/60	0–140	30	4.2	147.00	347.00
1156D	120	50/60	0–140	50	7.0	217.56	417.56
136B-3‡	120	50/60	0–140	66	9.2	327.64	527.64
1156D-2P	120	50/60	0–140	100	14.0	496.76	696.76
1156D-3P	120	50/60	0–140	150	21.0	870.87	1070.87
1156D-4P	120	50/60	0–140	200	28.0	1168.02	1368.02
1156D-6P	120	50/60	0–140	300	42.0	1698.73	1898.73
12	240	50/60	0–264	0.5	0.13	25.28	.....
10B-2	240	60■	0–264	2.25#	0.59	46.68	.....
22	240	50/60	0–280	2.5	0.70	35.28	185.28
216BU	240†	50/60	0–280	3.5	0.98	38.22	188.22
216B§	240†	50/60	0–280	3.5	0.98	51.16	201.16
21-2	240	50/60	0–280	5	1.3	69.43	219.43
217BT	240	60	0–240	5	1.2	49.98	199.98
226U	240†	50/60	0–280	7.5	2.1	58.21	258.21
226	240†	50/60	0–280	7.5	2.1	64.68	214.68
3PN226	240†	50/60	0–280	7.5	2.1	83.19	283.19
116BU-2	240	50/60	0–280	10	2.8	83.50	233.50
116BT-2	240	50/60	0–280	10	2.8	104.14	254.14
236B	240†	50/60	0–280	10	2.8	91.73	291.73
3PN236B	240†	50/60	0–280	10	2.8	118.78	218.78
117BT-2	240	60	0–240	12	2.9	113.72	263.72
246	240†	50/60	0–280	15	4.2	147.00	347.00
126U-2	240	50/60	0–280	15	4.2	132.89	332.89
126-2	240	50/60	0–280	15	4.2	152.02	352.02
136B-2▲	240†	50/60	0–280	22	6.2	215.21	415.21
1256D	240†	50/60	0–280	28	7.8	217.56	417.56
146-2♦	240	50/60	0–280	30	8.4	329.18	529.18
1156D-2S	240	50/60	0–280	50	14.0	455.11	655.11
1256D-2P	240†	50/60	0–280	56	15.7	488.04	688.04
1256D-3P	240†	50/60	0–280	84	23.5	855.86	1055.86
1156D-4PS	240	50/60	0–280	100	28.0	1145.34	1345.34
1256D-4P	240†	50/60	0–280	112	31.4	1168 02	1368.02
1156D-6PS	240	50/60	0–280	150	42.0	1672.65	1872.65
1256D-6P	240†	50/60	0–280	168	47.0	1698.73	1898.73
12-2	480	50/60	0–528	0.5	0.26	69.43	.....
22-2	480	50/60	0–560	2.5	1.4	93.37	243.37
216BT-2	480†	50/60	0–560	3.5	2.0	122.09	272.09
217BT-2	480	60	0–480	5	2.4	124.49	274.49
226-2	480†	50/60	0–560	7.5	4.2	152.02	352.02
236B-2▲	480†	50/60	0–560	10	5.6	215.21	415.21
246-2▲	480†	50/60	0–560	15	8.4	329.18	529.18
1256D-2S	480†	50/60	0–560	28	15.7	455.11	655.11
1256D-4PS	480†	50/60	0–560	56	31.4	1145.34	1345.34
1256D-6PS	480†	50/60	0–560	84	47.0	1672.65	1872.65

THREE PHASE

Superior Number‡	Line Volts	Frequency Hz	Output Volts	Output Max. Amps	Output Max. kVA	Net Each Manual	Net Each Motor* Driven
10B-2	120	60■	0–132	2.25#	0.51	$ 46.68	.....
21-2	120	50/60	0–140	5	1.1	69.43	$ 219.43
•116BU-2	120	50/60	0–140	10	2.4	83.50	233.50
116BT-2	120	50/60	0–140	10	2.4	104.14	254.14
117BT-2	120	60	0–120	12	2.5	113.72	263.72
•126U-2	120	50/60	0–140	15	3.6	132.89	332.89
126-2	120	50/60	0–140	15	3.6	152.02	352.02
•136B-2▲	120	50/60	0–140	22	5.3	215.21	415.21
146-2♦	120	50/60	0–140	30	7.3	329.18	529.18
1156D-2D	120	50/60	0–140	50	12.1	471.37	671.37
1156D-4D	120	50/60	0–140	100	24.2	1116.99	1316.99
1156D-6D	120	50/60	0–140	150	36.4	1672.65	1872.65
12-2	240	50/60	0–264	0.5	0.23	69.43	.....
•10B-3	240	60■	0–240	2.25#	0.94	75.85	.....
22-2	240	50/60	0–280	2.5	1.2	93.37	243.37
•216BU-2	240†	50/60	0–280	3.5	1.7	96.96	246.96
216BT-2	240†	50/60	0–280	3.5	1.7	122.09	272.09
21-3	240	60■	0–280	5	2.2	110.12	260.12
217BT-2	240	60	0–240	5	2.1	124.49	274.49
226-2	240†	50/60	0–280	7.5	3.6	152.02	352.02
116BT-3	240	60■	0–280	10	4.8	149.63	299.63
•236B-2▲	240†	50/60	0–280	10	4.8	215.21	415.21
117BT-3	240	60	0–240	12	5.0	158.00	308.00
126-3	240	60■	0–280	15	7.3	233.42	433.42
136B-3‡	240	60■	0–280	22	10.7	327.64	527.64
1256D-2D	240†	50/60	0–280	28	13.6	463.24	663.24
146-3‡	240	60■	0–280	30	14.5	490.77	690.77
•1156D-3Y	240	60■	0–280	50	24.2	798.50	998.50
1256D-4D	240†	50/60	0–280	56	27.2	1116.99	1316.99
1256D-6D	240†	50/60	0–280	84	40.7	1672.65	1872.65
1156D-6Y	240	60■	0–280	100	48.5	1644.30	1844.30
12-3	480	60■	0–528	0.5	0.46	106.53	.....
22-3	480	60■	0–560	2.5	2.4	146.03	296.03
216BT-3	480†	60■	0–560	3.5	3.4	166.38	316.38
217BT-3	480	60	0–480	5	4.2	178.35	328.35
226-3	480†	60■	0–560	7.5	7.3	233.42	433.42
•236B-3‡	480†	60■	0–560	10	9.7	316.34	516.34
246-3‡	480†	60■	0–560	15	14.5	490.77	690.77
•1256D-3Y	480†	60■	0–560	28	27.2	798.50	998.50
1256D-6Y	480†	60■	0–560	56	54.3	1644.30	1844.30

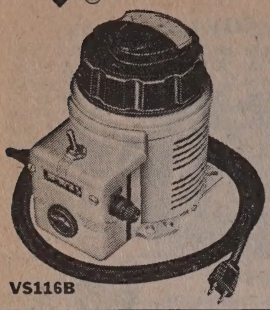
EXPLANATION OF FOOTNOTES

‡Letters in Part Numbers Indicate as Follows:
3PN—NEMA plug and receptacle.
Suffix letters and numbers (2, 2S, 4P, 6P, etc.), indicate ganged units. Numeral shows number of units in assembly.
U—Supplied without protective screening, terminal enclosure, input cord, output receptacle, fuse or switch.
*Add type number prefix from table below to Superior Powerstat No. for full-range travel motor speed desired; e.g., type **5M**21 is 5-sec No. 21 Powerstat, **15MC**126 is 15-sec No. 126 Powerstat, etc. Four-gang or larger types not available in 5-sec speed.

Superior Powerstat Series	Prefix for Full-Range Travel Motor Speed 5 Sec	15 Sec	30 Sec	60 Sec
21-22 116B-216B 117B-217B 146-246	5M	15M	30M	60M
1156D-1256D	5MB	15MB	30MB	60MB
126-226	5MC	15MC	30MC	60MC
136B-236B	5MD	15MD	30MD	60MD

†Also has terminals for operating at ½ this input voltage. ‡For parallel connection, order T5579B choke at **$63.53** extra. §Also available as 3PN type. #Metal panel mounted rating. See published derating for brackets and nonmetallic panels. ▲For parallel connection, order T5000B choke at **$33.08** extra. ■If the maximum output voltage is limited to the input voltage, the frequency range is 50–60 Hz. ♦For parallel connection, order T6053 choke at **$45.15** extra. ‡For parallel connection, order T6065 choke at **$79.28** extra.

•AVAILABLE OFF-THE-SHELF FROM STOCK.

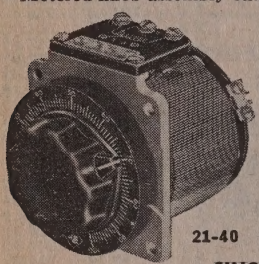

VS116B

METERED KNOB POWERSTAT® VARIABLE TRANSFORMERS

Stationary, direct-reading voltmeter on knob has accuracy of *±3% FS. Voltmeter does not turn with knob; insensitive to stray magnetic fields. Saves panel space, wiring and installation costs. Series 21-22 thru 146-246 back-of-panel mounted types may be combined with metered knob assemblies. Existing models can be retrofitted also.

Superior Type	Line Volts	Freq. Hz	Output Volts	Output Amps‡	Output kVA‡	Price Each
VS116B*	120	50/60	0–140	10	1.4	$ 94.58
VS117BT*	120	60	0–120	12	1.4	97.44
VS126*	120	50/60	0–140	15	2.1	116.11
VS136B*	120	50/60	0–140	22	3.1	142.44
VS146	120	50/60	0–140	30	4.2	202.19
VS216B*	240†	50/60	0–280	3.5	0.98	101.09
VS217BT*	240	60	0–240	5	1.2	102.31
VS226*	240†	50/60	0–280	7.5	2.1	119.36
VS236B*	240†	50/60	0–280	10	2.8	142.44
VS246	240†	50/60	0–280	15	4.2	202.19

*Also available with cord-plugs shown in standard type chart. †Has terminals for operating at half input voltage. ‡Max.
Type VS150 (0–150 V Meter Scale) or **VS300** (0–300 V Meter Scale) —Metered knob assembly only. Price Each..... **$58.28**


21-40

40-VOLT POWERSTAT VARIABLE TRANSFORMERS

Meet the high current, low voltage requirements of low voltage power supplies and a wide range of transistor circuit applications. All types are open construction. Individual units in ganged assemblies have the same electrical ratings as single units of the corresponding type number.

SINGLE PHASE

Superior Type	Line Volts	Freq. Hz	Output Volts	Output Max. Amps	Output Max. kVA	Price Each Manual	Price Each Motor* Driven
•**10B-40**	40	60	0–40	6	.24	$ 19.99	.....
10B-40-2†	40	60	0–40	6	.24	60.90	.....
10B-40-3†	40	60	0–40	6	.24	96.22	.....
•**21-40**	40	60	0–40	15	.6	27.64	$177.64
21-40-2†	40	60	0–40	15	.6	78.56	228.56
21-40-3†	40	60	0–40	15	.6	123.29	273.29
116BU-40	40	60	0–40	25	1.0	41.30	191.30
116BU-40-2†	40	60	0–40	25	1.0	103.53	253.53
116BU-40-3†	40	60	0–40	25	1.0	147.38	297.38

*Add type number prefix for full range travel motor speed desired: **5M** for 5 sec.; **15M** for 15 sec.; **30M** for 30 sec.; **60M** for 60 sec. (for example, **15M**21-40). †Ratings given apply separately to each unit in assembly.

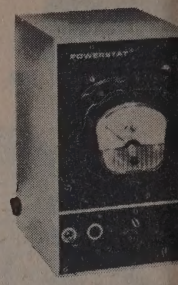
DOUBLE WOUND POWERSTAT VARIABLE TRANSFORMERS WITH ISOLATED SECONDARY

POWERSTAT type LW136B is a double wound assembly with an isolated secondary. When ordering (*) motor driven assemblies prefix type number with desired speed of either 5, 15, 30 or 60 seconds for full range travel and letters MD (for example, 5MDLW136B-3). Any of the ratings given below are possible simply by using the proper terminal connections. These are only a few of the many ratings that can be obtained. Data sheet on request.

Superior Type	Line Volts	Output Volts	Output Max. Amps	Output Max. kVA	Price Each Manual	Price Each Motor* Driven
•**LW136B**	120	0–30	25	.75	$131.71	$331.71
For	120	15–0–15	35	.52		
50/60 Hz	240	0–30	25	.75		
single	240	15–0–15	35	.52		
phase	120	105–135	35	4.7		
	107–137	120	35	4.2		
	240	225–255	35	8.9		
	226–256	240	35	8.4		
LW136B-3	240	210–270	35	16.4	449.44	649.44
For 60 Hz	214–260	240	35	14.6		
three-	480	450–510	35	31.0		
phase	452–512	480	35	29.1		

ENCLOSED L SERIES POWERSTAT VARIABLE TRANSFORMERS

N21


N116BK

Enclosed laboratory models are equipped with grounded NEM cord/plug assembly, on-off switch, pilot light, fuse and outpu receptacle. Integral handle; recessed controls. Slot, provided the rear, accepts wall hanger bracket. Meets OSHA requirement

Superior Type	Input Freq., Hz	Output Volts	Output Amps	Output kVA	Price Each
•**L10B**	60	0–132	2.25	0.30	$ 36.75
•**L21**	50/60	0–140	4.5	0.63	47.25
•**L116B**	50/60	0–140	10	1.4	57.75

*Ratings for constant current load; for constant impedance loa ratings are 13 amps, 1.6 kVA.

COMPACT Q TYPE POWERSTATS

Ideally suited for applications where space is critical factor. Compact, square frame uni available only in manually operated open co struction assemblies. Removable shafts may extended from either end of unit.

SINGLE PHASE

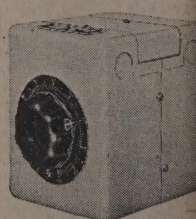
Superior Type*	Line Volts	Input Freq. Hz	Output Volts	Output Max. Amps	Output Max. kVA	Price Each
•**Q116U**	120	50/60	0–120	9	1.1	$ 31.75
			0–140	9	1.3	
•**Q117U**	120	60	0–120	10	1.2	34.10
•**Q216U**	240	50/60	0–280	3.5	0.98	38.22
	120		0–260	3.5	0.42	
•**Q217U**	240	60	0–240	5	1.2	40.57
Q116U-2	240	50/60	0–240	9	2.2	84.99
			0–280	9	2.5	
Q117U-2	240	60	0–240	10	2.4	92.17
Q216U-2	480	50/60	0–560	3.5	2.0	98.15
	240		0–560	3.5	0.85	
Q217U-2	480	60	0–480	5	2.4	104.14

THREE PHASE

Q116U-2	120	50/60	0–120	9	1.9	$ 84.99
			0–140	9	2.2	
Q117U-2	120	60	0–120	10	2.1	92.17
Q216U-2	240	50/60	0–280	3.5	1.7	98.15
	120		0–280	3.5	0.74	
Q217U-2	240	60	0–240	5	2.1	104.14
Q116U-3	240	50/60	0–240	9	3.8	118.50
		60	0–280	9	4.4	
Q117U-3	240	60	0–240	10	4.2	125.65
Q216U-3	480	60	0–560	3.5	3.4	135.20
	240	60	0–560	3.5	1.5	
Q217U-3	480	60	0–480	5	4.2	144.84

*Number suffix indicates ganged assembly; number is no. of unit

EN TYPE POWERSTATS



Wide application and mounting flexibility. Housed in lightweight, functional aluminum enclosures that permit easy installation, wiring and servicing. Single units and ganged assemblies available for 120, 240 and 480 volt, single and three phase service with loads up to 6.0 kVA. Data sheet on request. Single units below size: 5¾" w. x 6" d. x 6 13/16" h. Shipping Weight, 15 lbs.

Superior Type†	Input Volts	Input Freq.	Output Volts	Output Amps	Output kVA	Price Each
EN116B	120	50/60	0–140	8	1.1	$63.44
EN117B	120	60	0–120	10*	1.7*	65.84
EN216B	240	50/60	0–280	3	0.84	71.25
EN217B	240	60	0–240	4.4*	1.4*	73.65

*Current is maximum for constant-current load; kVA is maximu for constant-impedance load. †For single phase service.

●AVAILABLE OFF-THE-SHELF FROM STOCK

Superior

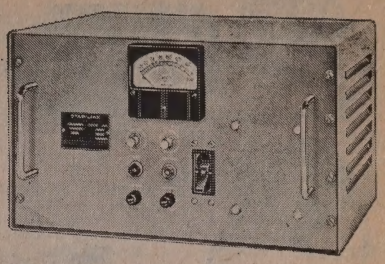
REGULATORS, CONTROL, OVERVOLTAGE DETECTOR

STABILINE® AUTOMATIC VOLTAGE REGULATORS

Maintain a constant output voltage regardless of line or load changes. Several series are available for requirements from 0.25 to 275 kVA. A complete line of Stabilines for use on frequencies of 400 Hz and higher also available. Bulletins giving complete data on all series are available on request.

ELECTRO-MECHANICAL TRANSISTORIZED SERIES

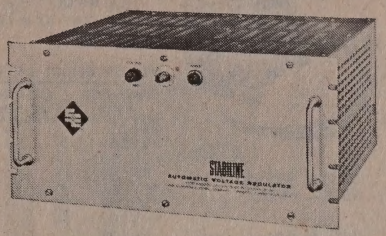
Type EMT: Utilize transistorized control circuits, motor-driven Powerstat® variable transformers and buck-boost transformers to regulate line voltage. Widely used in industrial applications or where constant output voltage is required with zero waveform distortion. EMT Series types are offered in ratings from 2.3 to 118 kVA. For heavier load requirements, models of the EMS Series (not listed) are offered in ratings from 25 to 275 kVA. **Type EMK:** Stabiline automatic voltage regulators offer an extremely fast correction rate. Rugged construction assures dependable performance with little or no maintenance. Efficiency, approx. 99%; rated accuracy, ±0.75% for all variations of line voltage or load current within the stated range of the unit.



TYPE EMT4106C

INSTANTANEOUS ELECTRONIC SOLID STATE SERIES

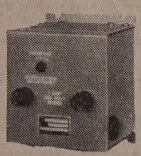
Highly accurate, fast-correcting units feature solid state circuitry which permits smaller and lighter units than comparable tube-type regulators. Other benefits include low distortion, high efficiency (up to 95%) and wide operating frequency range. Speed of correction can be considered instantaneous for most applications. Will maintain output voltage within 100 mV rms band for any combination of rated input voltage and/or load from 1.0 to 0 power factor lagging. With the exception of types IES9110, IES9115, IES9210 and IES9215, all models can be rack mounted by removing the cabinet feet.



TYPES IES9103B AND IES9203B

Superior Number	Nom'l Output Voltage	AC Hz	Input Voltage Range*	Output Voltage Range	Max. Output Amps	Rated Output kVA	Correction Rate: Sec./Volt†	Approx. Wt., Pounds Net	Approx. Wt., Pounds Shpg.	Superior Number	Net Each
•EMT4102B‡■	115	50/60	95–135	110–120	20	2.3	.075	54	63	EMT4102B‡■	$ 723.76
•EMT4106C■	115	50/60	95–135	110–120	57	6.6	.075	87	95	EMT4106C■	844.75
•EMT4112B§■	115	50/60	105–125	110–120	114	13.0	.15	90	98	EMT4112B§■	844.75
•EMT4115B	115	50/60	95–135	110–120	144	16.6	.125	258	280	EMT4115B	1070.38
EMT4104B#*	120	60	108–137	110–120	35	4.2	.10	47	52	EMT4104B#*	857.29
•EMT4207BI	230	50/60	195–255	220–240	36	8.3	.083	153	175	EMT4207BI	929.77
•EMT4228C▲	230	50/60	205–250	220–240	130	29.9	.111	253	275	EMT4228C▲	1155.40
EMT4407B*	460	50/60	400–520	440–480	20	9.2	.041	165	187	EMT4407B*	1128.15
EMT4418B*	460	50/60	400–520	440–480	45	20.7	.041	263	285	EMT4418B*	1258.95
EMT6210YBI♦*	230	50/60	195–255	220–240	33	13.1	.083	372	453	EMT6210YBI♦*	1662.25
EMT6215YBI♦*	230	50/60	195–255	220–240	48	19.1	.083	374	455	EMT6215YBI♦*	1722.20
•EMT6220YBI♦	230	50/60	195–255	220–240	63	25.1	.083	378	457	EMT6220YBI♦	1853.00
•EMT6245YBI♦	230	50/60	195–255	220–240	145	57.8	.25	835	969	EMT6245YBI♦	2501.55
EMT6270DBI♦*	230	50/60	195–255	220–240	188	74.9	.25	795	939	EMT6270DBI♦*	3150.10
EMT6412YB♦*	460	50/60	400–520	440–480	18	14.3	.041	350	430	EMT6412YB♦*	1787.60
EMT6417YB♦*	460	50/60	400–520	440–480	24	19.1	.041	370	450	EMT6417YB♦*	1918.40
•EMT6425YB♦	460	50/60	400–520	440–480	35	27.9	.041	390	470	EMT6425YB♦	1883.52
EMT6450YB♦*	460	50/60	400–520	440–480	75	59.8	.125	771	905	EMT6450YB♦*	2757.70
EMT6475YB♦	460	50/60	400–520	440–480	100	75	.125	820	954	EMT6475YB♦	2997.50
•EMT64100YB♦	460	50/60	420–500	440–480	148	118	.188	841	975	EMT64100YB♦	3090.15
EMK4105■I*	115	50/60	105–125	110–120	46	5.3	.04	69	79	EMK4105■I*	851.29
IES91005B	115	50/60	95–135	110–120	4.4	0.5	.....	53	57	IES91005B	563.53
•IES9101B	115	50/60	95–135	110–120	8.7	1.0	.....	68	72	IES9101B	630.02
•IES9103B	115	50/60	95–135	110–120	26.1	3.0	.....	131	136	IES9103B	970.10
•IES9106B	115	50/60	95–135	110–120	52.2	6.0	.....	167	181	IES9106B	1117.25
IES9110B*	115	50/60	95–135	110–120	87.0	10.0	.....	360	380	IES9110B*	1955.00
•IES9115B	115	50/60	95–135	110–120	130	15.0	.....	360	382	IES9115B	2100.00
IES9203B*	230	50/60	195–255	220–240	13	3.0	.....	120	126	IES9203B*	1139.05
•IES9206B	230	50/60	195–255	220–240	26.1	6.0	.....	139	153	IES9206B	1237.15
IES9210B*	230	50/60	195–255	220–240	43.5	10.0	.....	330	350	IES9210B*	2125.50
IES9215B	230	50/60	195–255	220–240	65	15.0	.....	350	372	IES9215B	2577.85

*At nominal output voltage; input voltage range shifts proportionally with output voltage setting. †Motor drive travel time in seconds divided by input range in volts. ‡Can also be operated with an input range of 105–125 volts, output rating of 40 amps, 4.6 kVA and correction rate of .15 sec/V. §Can also be operated with an input range of 95–135 volts, output rating of 57 amps, 6.6 kVA and correction rate of .075 sec/V. #60 Hz only. ▲Can also be operated with a nominal 208 volt output, input range of 177–230 volts and output range of 200–216 volts. ▲Can also be operated with a nominal 208 volt output, input range of 186–226 volts and output range of 200–216 volts. ■Also available as rack models (add suffix **R**); prices on request. ♦Three-phase types; all others single-phase. ▲Can also be operated on an input range of 95–135 volts with rating of 23 amps, 2.6 kVA and correction of .02 sec/V. *Units subject to setup charges available on inquiry.



OVK100 Overvoltage Detector

STABILINE OVERVOLTAGE DETECTOR

Solid state voltage level detector protects connected equipment used with Stabiline Automatic Voltage Regulators in the event of an overvoltage condition. When the voltage being monitored exceeds a preset level, the device actuates an SPDT relay that can be used to actuate protective equipment or a warning device. Relay contacts are rated 5 amps, resistive. Can be used in latching or nonlatching connection: In latching connection, the relay closes when an overvoltage condition exists and remains closed even when the overvoltage condition is removed; in nonlatching connection, it closes during overvoltage, but will automatically reset when overvoltage condition is removed. Trip level is adjustable, 110 to 150 volts. Operation at higher voltages is possible with use of an external stepdown transformer. Size: 4 7/16″ w. x 3 5/8″ d. x 5 1/16″ h. overall.

Superior Type OVK100 Overvoltage Detector—Net Each.....**$122.00**

FR501B Controller

STABILINE FULL-RANGE REGULATOR CONTROLLER

Designed for use with motor-driven Powerstat® variable transformers to maintain constant output voltage. Adjustable to any value within the full range of the Powerstat used. Regulates output from any motor-driven Powerstat rated 120 or 240 volts, 50/60 Hz, single-phase. Dependent on Powerstat used, unit may be used for 3-phase applications maintaining one line-to-neutral or one line-to-line voltage. Can also be used in 480 volts, 50/60 Hz, 3-phase, but an auxiliary step-down transformer is required for sensing line-to-line voltage. Voltage output remains within 4-volt band when used with 240 V types. Voltmeter on front panel monitors Powerstat output in 0–300 volt range. Other controls include voltage adjust, on-off switch, pilot indicating when unit is energized, motor damping control and three fuses. Size: 11″ h. x 6″ w. x 7″ d., overall. Mtg. centers 4½″ x 10¼″ maximum.

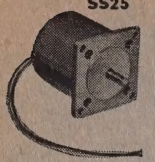
•Superior Type FR501B Regulator Controller—Net Each.....**$324.00**

● AVAILABLE OFF-THE-SHELF FROM STOCK

Superior Slo-Syn Motors

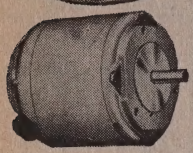
SLO-SYN® SYNCHRONOUS/STEPPING MOTORS

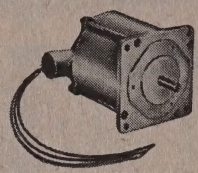
SS25



SS400

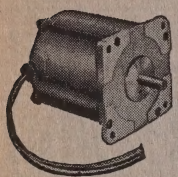
SS50, HS50



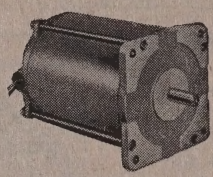


X250

SS150, SS152, SS250, SS252



X1000



SS1800

Units may be used as DC stepping motors and start at full-rated torque. Slo-Syn synchronous motors are permanent magnet types (AC) having instant start, stop and reverse characteristics and a basic shaft speed of 72 rpm with 60 Hz applied. Adaptable for use as a DC stepping motor or incremental positioning device that can be stepped 200 times per revolution of the motor shaft. Negligible overshoot; no ratchets or detents are used. Single-pole, three-position switch gives complete forward, reverse and "off" control because motor has only three leads. Starts or stops in less than 0.025 second or, approximately 1.5 Hz. No need for mechanical or electrical braking; stops in less than 5° of motor shaft rotation. Starting and operating currents nearly identical; no excessive inrush current when motor is turned on. Lubricated-for-life, sealed ball-bearings. Types with **X** in number are explosion-proof and UL Approved for Class 1, Group D service.

SPECIAL DUTY TYPES available. Request latest SLO-SYN literature covering:

Double End: Have output shafts projecting from both ends. Types available in all cataloged torque ratings. Those with 50, 150, 250 and 400 oz.-in. ratings can also include planetary gear assemblies if desired.
200 RPM: Types TS25, TS50 and TS52 are similar to standard models, but operate at a synchronous speed of 200 rpm and take 5° steps when used for DC stepping.
28.8 RPM: Type LS50 runs at 28.8 rpm at 60 Hz without stepdown gearing. Makes 500 steps/rev as a DC stepping motor. Torque rating, 60 oz.-in. Stops with 25 msec.

MOTOR UNITS

Specifications at 50/60 Hz, one phase, 72 rpm at 60 Hz.

Superior Type	Torque (Oz.-In.)	V	Max. Amps	Resistor, Ohms	Capacitor, μF	Shpg., Lbs.	Net Each
•SS25	25	120	0.1	500 ±5%, 5 W	0.75 ±6%, 330 VAC	1.5	$ 69.55
•SS50†	50	120	0.3	250 ±5%, 25 W	2.6 ±6%, 330 VAC	3.5	59.92
•SS150‡	150	120	0.4	250 ±5%, 25 W	3.75 ±6%, 330 VAC	8	71.69
SS152§	150	240	0.2	1000 ±5%, 25 W	1.0 ±6%, 660 VAC	8	77.04
•SS250	250	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	8	98.44
•X250	250	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	9	154.08
•SS252	250	240	0.3	750 ±5%, 50 W	1.75 ±6%, 660 VAC	8	102.72
SS400	400	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	13.75	155.15
•X1000*	1000	120	3.0	65 ±5%, 160 W	30.0 ±5%, 330 VAC	33	304.95
•X1500	1500	120	3.0	50 ±5%, 375 W	30.0 ±6%, 330 VAC	40	337.05
SS1800*	1800	120	4.0	40 ±5%, 280 W	60.0 ±6%, 330 VAC	50	413.02

*For 60 Hz operation only. †‡§Available with resistor-capacitor integrally mounted on end of motor, add suffix **RC** to number and †**$29.00**, ‡**$28.00**, §**$26.00** to price.

PLANETARY GEAR ASSEMBLIES

Standard types of Slo-Syn synchronous/stepping motors with special gear planetary assemblies are available. Speed reduction assembly is completely enclosed in dustproof housing mounted on shaft end of motor. Load is evenly distributed over three special nylon gears. Planetary gear shaft is ball-bearing mounted; self lubricated nylon gears. To order, basic type number must be suffixed with the desired planetary gear assembly number For example, SS50-**P1.** See tables at right for specifications of planetary gear types and price schedule.

PLANETARY GEAR TYPES

Planetary Assembly Suffix	Gear Ratio	Approx. Speed* rpm	Output Torque			
			SS50	SS150, SS152	SS250, SS252, SS400	X250
P1	4-1/3	16.6	120 oz.-in.	400 oz.-in.	650 oz.-in.	650 oz.-in.
P2	21-2/3	3.32	600 oz.-in.	2000 oz.-in.	.....	2000 oz.-in.
P3	108-1/3	0.665	2000 oz.-in.	2000 oz.-in.	.....	2000 oz.-in.

*Exact speed may be calculated from basic motor speed of 72 rpm and given ratio.

PRICE SCHEDULE FOR PLANETARY GEAR ASSEMBLIES

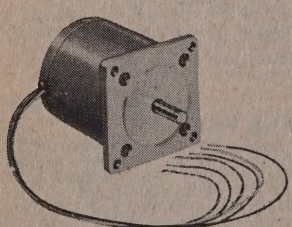
Plan. Assem. Suffix	Net Each — Planetary Gear Assemblies for Motor Types						
	SS50	SS150	SS152	X250	SS250	SS252	SS400
P1	$ 92.02	$105.93	.....	$191.53	$131.61	.....	$191.53
P2	94.16	105.93	.....	191.53	.....	.....	.....
P3	107.00	.....	.....	.....	.....	.....	.....

SLO-SYN® PRECISION STEPPING MOTORS

Designed for phase-switched DC stepping duty in applications requiring greater positioning speed and accuracy than possible with standard SLO-SYN motors. Make 200 steps per shaft revolution with each step 1.8°; accurate within ±3% noncumulative. They may be operated at speeds greater than 500 steps per second if accelerating and decelerating circuits are used. With proper circuitry, the motors may be operated at speeds of 1000 steps per second or higher without missing any steps. *Features **Viscous Damping,** a fluid system that approaches critical damping.

Superior Type	Volts DC	Amps/ Winding	Net Each
•HS25	5.4	1.5	$143.38
•HS50	3	4	129.47
•HS50D*	3	4	184.04
•HS50L	4.5	3.5	175.48

M SERIES SLO-SYN® STEPPING MOTORS



The M Series SLO-SYN motors represent the most advanced permanent magnet stepping motor design available. Offer the most complete range, both in torque ratings and in size configuration. Motors provide the highest torque per pound and torque to inertia ratios; can be driven at rates above 20,000 steps per second with a minimum of power input. Standard drives available for rates to 5,000 steps per second. Higher rates can be supplied on special order. Class B insulation; may be operated at an ambient temperature range of −40° C to +65° C. Continuous duty temperature rise is 65° C. Stepping increment is 1.8° with a choice of ±5% or precision ±3% accuracies available as standard. An eight-step input sequence gives a stepping increment of 0.9°.

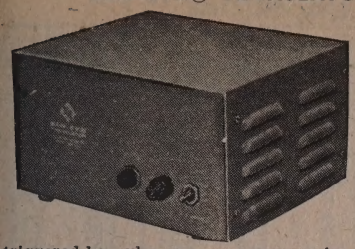
Superior Type	Accuracy	DC Volts	Amps per Winding	Holding Torque* Oz.-In.	Residual Torque† Oz.-In.	Shaft Dia. Inches	Shpg. Wt. Lbs.	Net Each
•M061-FC08	±3%	1.3	3.9	53	5	.250	1½	$ 91.3
•M061-FD08	±5%							81.9
•M061-FC02	±3%	5.1	1.0	53	5	.250	1½	91.3
•M061-FD02	±5%							81.9
•M062-FC09	±3%	1.7	4.7	100	8	.250	2½	107.1
•M062-FD09	±5%							97.6
•M062-FC04	±3%	4.3	1.8	100	8	.250	2½	107.1
•M062-FD04	±5%							97.6
•M063-FC09	±3%	2.2	4.6	150	10	.250	3¼	126.0
•M063-FD09	±5%							116.5
•M063-FC06	±3%	3.4	2.9	150	10	.250	3¼	126.0
•M063-FD06	±5%							116.5
•M091-FC09	±3%	1.8	4.8	150	5	.375	4	86.1
•M091-FD09	±5%							76.6
•M091-FC06	±3%	2.9	3.05	150	5	.375	4	86.1
•M091-FD06	±5%							76.6
•M092-FC09	±3%	2.5	4.6	300	10	.375	6¾	95.5
•M092-FD09	±5%							86.1
•M093-FC11	±3%	2.8	5.5	450	15	.375	9	120.7
•M093-FD11	±5%							111.3
•M093-FC14	±3%	2.2	7.0	450	15	.375	9	120.7
•M093-FD14	±5%							111.3
•M111-FD12	±5%	2.3	6.1	625	15	.375	9¼	136.5
•M111-FD16	±5%	1.7	8.0	625	15	.375	9¼	136.5
•M112-FJ12	±5%	3.6	6.1	1125	30	.625	16¼	245.7
•M112-FJ25	±5%	1.8	12.7	1125	30	.625	16¼	245.7

*Both windings energized at rated current. †Approximate value with neither coil energized

•AVAILABLE OFF-THE-SHELF FROM STOCK.

Superior Slo-Syn Motors, Drives

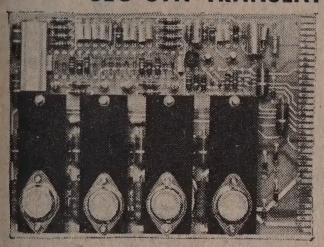
SLO-SYN® TRANSLATOR ST1800B



For pulse-to-step conversion of data to bifilar motors. Converts low-level signal pulses or square waves into the correct switching sequence needed to drive a SLO-SYN motor at the desired stepping rate to 500 steps/sec. Input is 105–125 volts AC, 1.5 amps. Signal input impedance is 500 ohms. Input may be triggered by pulse or square wave or by an external switch. Operates in ambients from 0° C to +40° C. Ideal for wide range of programmed positioning and indexing functions. Approx. shipping weight, 12 lbs. Use with 1.8° step angle motors M Series, HS-25, HS50, HS50L, SS25-1001, SS50-1008, SS150-1010, SS250-1027, SS400-1021, SS1800-1007, X250-1003 and X1500-1001; 0.72° step angle motors LS50-1005 and LS50-1006; and 5° step angle motors TS25-1008 and TS50-1001.

•Superior Type ST1800B—Net Each..... **$325.00**

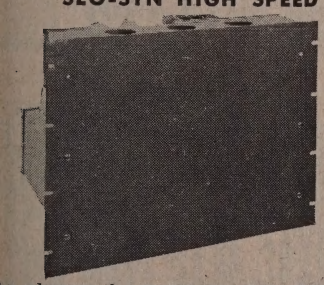
SLO-SYN TRANSLATOR MODULES



Plug-in printed circuit boards with logic capabilities for stepping SLO-SYN motors. STM1800 and STM1800C are basic translators capable of bidirectional operation of motors. Models with V suffix, i.e., STM1800V and STM1800CV, are similar but have built-in oscillators to provide triggering signals. Potentiometers are supplied with V-suffixed models for adjusting oscillator speed. STM1800 and STM1800V have speeds to 500 steps/second and are used with M Series, HS and bifilar motors. STM1800C and STM1800CV have speeds to 2000 steps/second and are used with M Series motors. Types STM1800 and STM1800V require 8 amps power supply transformer T5934-G2. Types STM1800C and STM1800CV require 10 amp power supply transformer T6382.

•Superior Type STM1800—Net Each..... **$79.00**
•Superior Type STM1800V—Net Each..... **89.00**
•Superior Type T5934-G2—8 Amp Power Supply Transformer. Use with same motors as ST1800. Net Each..... **$ 39.00**
•Superior Type STM1800C—Net Each..... **129.00**
•Superior Type STM1800CV—Net Each..... **139.00**
•Superior Type T6382—10 Amp Power Supply Transformer. Use with M Series motors M061-FC08, M061-FD08, M062-FC09, M062-FD09, M063-FC09, M063-FD09, M091-FC09, M091-FD09, M092-FC09, M092-FD09, M093-FC11, M093-FD11, M111-FD12 and M112-FJ12. Net Each..... **$39.00**

SLO-SYN HIGH SPEED TRANSLATORS



Used with certain precision models (with prefix HS) and M series (models with prefix M) motors to provide high stepping speeds. High speed translator HTR400 has 50 to 2000 step/sec speed; HTR103RT has 100 to 3000 step/sec speed, and HTR105RT has 100 to 5000 step/sec speed. Acceleration and deceleration is adjustable. Each pulse received from a built-in ocsillator or from an external source will cause the translator to advance the motor one step. Triggering pulses can be supplied by tape readers, computers, oscillators, etc. Ambient temperature, 0° C to 40° C, operating; −55° C to 85° C, storage. Rack mounted design with plug-in solid-state circuitry.

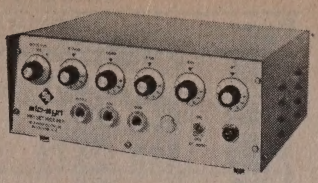
•Superior Type HTR400—Speeds up to 2000 steps/sec. Used with Motors HS25, HS50, HS50L and HS400B-1003. Net.. **$890.00**
•Superior Type HTR103RT—Speeds up to 3000 steps/sec. Use with M112-FJ25 motor. Net Each..... **$1230.00**
•Superior Type HTR105RT—Speeds up to 5000 steps/sec. Use with M Series motors M061-FC02, M061-FD02, M062-FC04, M062-FD04, M063-FC06, M063-FD06, M091-FC06, M091-FD06, M092-FC09, M092-FD09, M093-FC14, M093-FD14 and M111-FD16. Net Each..... **$1075.00**

SLO-SYN BUFFERED TRANSLATORS

Drives certain M Series (models with M prefix) motors in response to commands from computer, digital control or other device which operates at a fixed pulse rate. Acceleration and deceleration not required from pulse source. Translator stores incoming pulses and feeds them to the motor, automatically accelerating and decelerating at a rate compatible with the response characteristics of the motor. Acceleration and deceleration rates are approximately 5000 steps/sec² for BTR103RT and 15000 steps/sec² for BTR105RT. Motor is driven one step for each pulse received from control unit. BTR103RT has speed of 100 to 3000 steps/sec; BTR105RT has speed of 100 to 5000 steps/sec. Rack mounted only.

Superior Type BTR103RT—Speeds up to 300 steps/sec. Use with M112-FJ25 motor. Net Each..... **$1450.00**
Superior Type BTR105RT—Speeds up to 5000 steps/sec. Use with same motors as HTR105RT. Net Each..... **$1295.00**

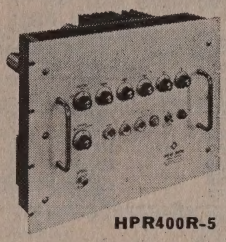
SLO-SYN PRESET INDEXER SP1800B-5



Controls indexing operations where bifilar motors are used for positioning. Automatically provides the correct switching sequence needed to drive motors the required number of steps. Has provision for actuating external equipment needed to perform related operations. Dials on control panel can be set to provide desired number of steps up to 99,999 counting range. Operates in ambients from 0° C to +40° C. Input current 1.25 amps. Also requires series dropping resistors. Approx. shipping weight, 19 lbs.

•Superior Type SP1800B-5—Speeds up to 500 steps/sec. Use with same motors as ST1800B. Net Each..... **$925.00**

SLO-SYN HIGH SPEED PRESET INDEXERS



HPR400R-5

Used with certain precision (models with HS prefix) and M Series (models with M prefix) motors in indexing and other positioning operations. HPR400R-5 has 50 to 2000 steps/sec speed; HPI 153RT has 100 to 3000 step/sec speed; and HPI 155RT has 100 to 5000 step/sec speed. Decade counter controls on front panel permit selecting positioning increments up to 99,999 counting range. On index command, unit drives the motor the prescribed number of steps and then actuates a relay which controls external equipment. Count can also be set by computer or external decade switches. Ambients: 0° C to 40° C operating; −55° C to 85° C storage. Rack mounted only.

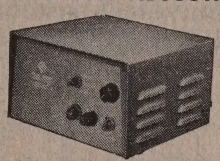
•Superior Type HPR400R-5—Speeds up to 2000 steps/sec. Use with motors HS25, HS50, HS50L and HS400B-1003. Net Each..... **$1400.00**
•Superior Type HPI 153RT—Speeds up to 3000 steps/sec. Use with M112-FJ25 motor. Net Each..... **$1825.00**
•Superior Type HPI 155RT—Speeds up to 5000 steps/sec. Use with same motors as High Speed Translator HTR105RT. Net Each..... **$1680.00**

BACKLASH TAKE-UP BOARDS

Cause motor to take additional steps when travel is in minus direction, then same number of steps in plus direction. Motor takes only the required steps when travel is in plus direction.

Superior Type BHM144134-G1—For use with HPR400R-5. Net Each..... **$95.00**
Superior Type BHM144087-G4—For use with HPI 153RT and HPI 155RT. Net Each..... **$95.00**

SLO-SYN ADJUSTABLE SPEED DRIVE ST1800BV



Essentially a translator with a built-in oscillator to supply triggering signals. The oscillator frequency can be adjusted to vary the speed from 4 steps/sec up to 500 steps/sec or the maximum permissible with the motor used. Have same other characteristics and applicable motors as SLO-SYN Translator ST1800B.

•Superior Type ST1800BV—Net Each..... **$395.00**

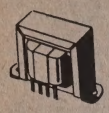
SLO-SYN BIFILAR MOTORS

Superior Type	Stepping Application Ratings		Net Each
	DC Volts	Amps per Winding	
•TS50-1001*	3	4.0	$131.61
•SS25-1002*	5.9	.88	109.14
•SS25-1001*	11.8	.44	109.14
•SS25-1011	23.6	.22	109.14
SS50-1009*	5.5	1.3	102.72
•SS50-1008*	8.0	0.85	100.58
•SS50-1001	14.0	0.53	100.58
SS50-1007	35.0	0.21	102.72
•SS150-1010*	10.0	1.25	113.42
SS150-1017	25.0	0.5	115.56
•SS250-1027*	4.6	3.1	139.10
•SS250-1002*	9.0	1.55	139.10
•SS250-1004	22.5	0.61	139.10
X250-1003*	4.6	3.1	196.88
X250-1002*	9.0	1.55	196.88
SS400-1021*	5.3	3.4	196.88
SS400-1002	8.3	2.2	196.88
SS400-1006	21.2	0.85	196.88
LS50-1005	3.0	4.0	207.58
LS50-1006	12.0	1.0	207.58
X1500-1001	12.0	3.8	381.99
X1000-1002	10.0	3.6	344.54
•SS1800-1007	11.5	3.9	451.54
SS1800-1002	14.4	3.1	455.82
SS1800-1006	23.0	2.0	455.82

*Dropping resistor required when used with translator or preset indexer.

●AVAILABLE OFF-THE-SHELF FROM STOCK

ESSEX STANCOR TRANSFORMERS AND VOLTAGE CORRECTOR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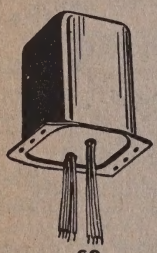
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PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

SINGLE PLATE TO VOICE COIL AND/OR LINE

Stancor No.	Impedance in Ohms Primary	Secondary	Audio Watts	Mtg. Type	Net Each, Quantities of 1-9	10-24	25-49	50-99
A-3332	2000	3.2	3	A	$2.92	$2.63	$2.37	$2.19
A-3876	2000	4.0	5	A	2.92	2.63	2.37	2.19
A-3336	2500*	3.5	5	A	3.67	3.30	2.97	2.75
A-3328	4000	3.5	3	A	2.50	2.25	2.03	1.88
A-3877	5000	4.0	5	A	3.17	2.85	2.57	2.38
A-3309	5000	3–4	3	A	3.08	2.77	2.49	2.31
A-8092	5000	3–4	8	A	3.67	3.30	2.97	2.75
A-3337	5000	6–8	10	S	4.42	3.98	3.58	3.32
A-3310	5000	500/15/8/4	20	C	9.84	8.86	7.97	7.38
A-3878	7000	4.0	5	A	2.92	2.63	2.37	2.19
A-3329	8000	3.5	3	A	2.58	2.32	2.09	1.94
A-3879	10000	4.0	5	A	3.17	2.85	2.57	2.38
A-3881	15000	4.0	5	A	3.17	2.85	2.57	2.38
A-3250	20000/10000 5000	500/333/200 125/50	5	A	7.00	6.30	5.67	5.25
A-3327	25000	4.0	5	A	3.33	3.00	2.70	2.50

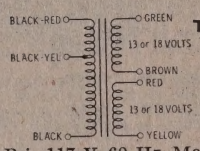
*Has 3% and 6% primary taps.

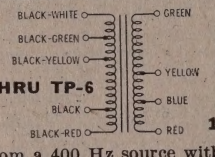
PUSH-PULL PLATES TO VOICE COIL AND/OR LINE

Stancor No.	Impedance in Ohms Primary, CT	Secondary	Audio Watts	Mtg. Type	Net Each, Quantities of 1-9	10-24	25-49	50-99
A-3872	5000	15/8/4	18	SC	$11.34	$10.21	$ 9.19	$ 8.51
A-3800	5000	500/250/15/8/4	30	C	12.67	11.40	10.26	9.50
A-3801	6600	500/250/15/8/4	35	C	15.84	14.26	12.83	11.88
A-3311	10000	500/15/8/4	25	C	13.00	11.70	10.53	9.75
A-8093	10000	3–4	10	A	3.67	3.30	2.97	2.75
A-3335	10000	6–8/3.2–4	10	S	4.67	4.20	3.78	3.50
A-3250	20000	500/333/200/125/50	5	A	7.00	6.30	5.67	5.25
A-3857	25000	4.0	5	A	3.17	2.85	2.57	2.38

*Has cathode feedback winding.

RECTIFIER TRANSFORMERS





TYPICAL SECONDARY VOLTS

6.5	13.5 CT	21.0 CT	29.0 CT
7.5	14.5 CT	22.0	31.5
8.0	16.0 CT	24.0	32.0 CT
9.0	18.0 CT	26.5 CT	35.5 CT
9.5	19.0 CT	27.0	37.0 CT
10.0	20.0	28.0	42.0 CT

Pri. 117 V, 60 Hz. May be operated from a 400 Hz source with no change in output. Wire termination.

Stancor No.	Max. Current, mADC Full-Wave CT	Bridge	½-Wave	Mtg.	Size, In., W. x D. x H.	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
TP-1	1500	900	450	C	2½ x 3 x 3⅛	2.7	$10.34	$9.31	$8.38	$7.76
TP-2	150	100	50	A	2⅞ x 1⅞ x 1⅝	.7	5.42	4.88	4.39	4.07
TP-3	400	300	150	A	3¼ x 2⅛ x 2⅜	1.5	6.67	6.00	5.40	5.00
TP-4	1500	1000	500	C	2½ x 3⅛ x 3⅛	3.2	11.67	10.50	9.45	8.75
TP-5	1100	750	375	A	4 x 2⅜ x 2⅝	2.3	8.34	7.51	6.76	6.26
TP-6	50	35	25	A	2⅜ x 1 7/16 x 1⅜	.45	4.42	3.98	3.58	3.32

UNIVERSAL SILICON OR SELENIUM RECTIFIER TRANSFORMERS

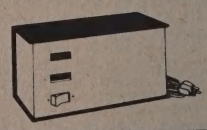
Primary 117 VAC, 50/60 Hz. Mounting type NV with solder lug termination.

Stancor No.	Approx. Applied VAC Under Load	Max. DC Output Resistive or Induct. Load Volts	Amps	Capacitive Load Volts	Amps	Filter Capacitor, μF	Net Each, Quantities of 1-9	10-24	25-49	50-99
RT-201*	11.7–29.4	11.2	2.0	13.8	2.0	1000	$10.00	$ 9.00	$ 8.10	$ 7.50
RT-201†	11.1–28.5	23.0	1.25	30.0	1.25	5000	10.00	9.00	8.10	7.50
RT-202*	12.0–29.8	11.1	4.0	14.7	4.0	2000	13.75	12.38	11.14	10.31
RT-202†	12.0–29.8	24.3	2.0	33.0	2.0	1000	13.75	12.38	11.14	10.31
RT-204*	11.7–29.2	12.0	8.0	14.5	8.0	4000	19.17	17.25	15.53	14.38
RT-204†	11.6–29.2	24.0	4.0	32.4	4.0	2000	19.17	17.25	15.53	14.38
RT-206*	12.0–29.7	11.5	12.0	14.4	12.0	6000	26.34	23.71	21.34	19.76
RT-206†	12.0–29.7	24.0	6.0	32.0	6.0	3000	26.34	23.71	21.34	19.76
RT-208*	12.1–29.2	11.4	15.0	14.8	15.0	7500	34.01	30.61	27.55	25.51
RT-208†	12.1–29.2	23.7	8.0	32.5	8.0	4000	34.01	30.61	27.55	25.51
RT-2012*	12.2–29.0	11.4	22.5	14.3	22.5	12000	55.43	49.89	44.90	41.57
RT-2012†	12.2–29.0	23.5	12.0	33.0	12.0	6000	55.43	49.89	44.90	41.57
RT-400*	23.5–60.0	25.0	1.0	34.0	1.0	1500	14.17	12.75	11.48	10.63
RT-400†	23.5–60.0	53.0	0.5	74.0	0.5	600	14.17	12.75	11.48	10.63
RT-401*	24.0–59.0	25.0	2.0	34.0	2.0	2500	15.34	13.81	12.43	11.51
RT-401†	24.0–59.0	52.5	1.0	73.5	1.0	1500	15.34	13.81	12.43	11.51
RT-402*	23.0–58.0	25.0	4.0	33.5	4.0	3000	20.67	18.60	16.74	15.50
RT-402†	23.0–58.0	51.5	2.0	72.5	2.0	1500	20.67	18.60	16.74	15.50
RT-408†	25.0–53.5	44.0	8.0	63.0	8.0	4000	91.69	82.52	74.27	68.77
RT-4012†	25.0–53.0	43.5	12.0	60.0	12.0	6000	110.02	99.02	89.12	82.52

*CT rectifier circuit. †Bridge rectifier circuit.

SERIES VC VOLTAGE CORRECTORS

Designed to eliminate low line voltage problems. Automatically boost line voltage by 12% when line drops to approximately 105 volts and cuts out automatically when line come up to approximately 110 volts (120 volt models). Offers advantages of comparatively light weight, low cost, no added harmonic distortion and attractive physical styling. Available in four models with 3-conductor NEMA standard cords and receptacles. Size: 10" w. x 6" d. x 5¼" h. overall.



Stancor No.	Nominal Input	Load Current	V.A. Rating	Boost Cut-in*	Boost Cut-out*	Wt. (lbs)	Net Each, Lots of 1-9	10-24	25-49	50-99
VC-120-5	120V	5A	600	105V	110V	8.8	$68.40	$68.40	$68.40	$68.40
VC-120-15	120V	15A	1800	105V	110V	16.5	81.00	81.00	81.00	81.00
VC-208-15	208V	15A	3120	182V	191V	18.5	97.50	97.50	97.50	97.50
VC-240-15	240V	15A	3600	210V	220V	19.8	103.50	103.50	103.50	103.50

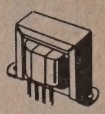
*Approximate values.

UNIVERSAL OUTPUT TRANSFORMERS

Termination: Primary, leads except A-3849, A-3880, A-3870; secondary, lugs.

Stancor No.	Impedance, Ohms Primary	Sec.	Watts	Mtg. Type	Net Each, Quantities of 1-9	10-24	25-49	50-99
A-3856*†	4000–14000	.05–122	4	A	$5.00	$4.50	$4.05	$3.75
A-3823*†	4000–14000	.05–122	8	A	5.83	5.25	4.72	4.37
A-3849*	1500–10000	.02–21	10	A	5.83	5.25	4.72	4.37
A-3852†	4000–14000	.05–122	18	S	8.00	7.20	6.48	6.00
A-3830†	3000–10000	.04–122	20	S	7.92	7.13	6.42	5.94

*Single plate. †Push-pull plate.



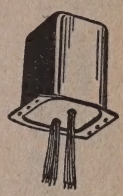
A

CATHODE-RAY TUBE POWER TRANSFORMER

For use in half-wave circuits. Primary 117 V, 60 Hz. May be operated from a 400 Hz source with no change in output. Lead termination except P-8179, lug.

Stancor No.	Plate VAC	Windings mADC	Rec. Fil. V	A	Other Winding V	A	Mtg.	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8150	1550	1.5	2.5	1.75	.....	...	SC	3 x2½x3⅛	$12.00	$10.80	$ 9.72	$ 9.00
P-8179	1600	3.0	...	....	6.3/5/2.5 6.3/5/2.5	1.0 3.0	M	2½x3 x3½	21.17	19.05	17.15	15.88
P-8151	2400	5.0	2.5	2.0	2.5	2.0	C	3⅞6x3⅞x4¼	20.84	18.76	16.88	15.63

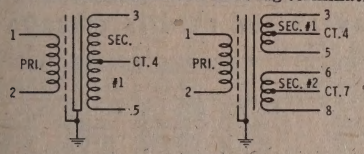
S



SC

PERIPHERAL COMPUTER ACCESSORY TRANSFORMERS

Designed for supplies delivering regulated positive and negative DC voltages for OP-AMPS and separate 5 to 6 volt regulated DC voltages for logic circuits. All transformer ratings are for continuous duty with a 105° C maximum operating temperature limit. Primary, 120 V, 50–60 Hz. Tested to 1500 V rms. All transformers have lug terminations.



PCA-1, -2 PCA-3, -4

Stancor No.	Output VDC	mA	Input Filter MFD
PCA-1	+21	150*	500
	−21	150*	500
PCA-2	+21	250*	500
	−21	250*	500
PCA-3	+21	150*	500
	−21	150*	500
	+8.5	2000†	1000
PCA-4	+21	250*	500
	−21	250*	500
	+8.0	4000†	3000

*Secondary No. 1 with full-wave bridge rectifier. †Secondary No. 2 with full-wave center-tapped rectifier.

M

Stancor No.	Style	Secon. #1 Volts	Amps	Secon. #2 Volts	Amps	Wght. Lbs.	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
PCA-1	S	35 CT	.21	.....	.....	1.0	2⅞ x 1⅝ x 2⅜	$ 4.75	$ 4.28	$ 3.85	$3.56
PCA-2	S	33 CT	.35	.....	.....	1.4	3½ x 1⅞ x 2 1⅛6	5.58	5.02	4.52	4.19
PCA-3	NV	33 CT	.21	18 CT	1.25	3.0	2½ x 2⅛ x 3⅛	10.25	9.23	8.30	7.69
PCA-4	NV	34 CT	.35	19 CT	2.5	3.9	2 1⅜6 x 2⅞ x 3 7⅛6	12.42	11.18	10.06	9.32

PRINTED CIRCUIT POLYCHROMATRANS

Printed circuit board transistor transformers. Test volts, 500 rms. Color-coded by application. Up to 50% reduction in distortion over other brands. Improved lower-end frequency response. Leads are fatigue resistant gold-plated nickel-iron alloy, .020″ dia., ⅜″ long and have multiples of 0.1″ grid spacing for PC application. Size .410″ w. x .310″ d. x .480″ h.

Stancor No.	Power Level mW	Use	Matching Impedance, Ohms Primary	Secondary	Max. mA DC*	Net Each, Quantities of 1-9	10-24	25-49	50-99
PCT-14	15	Input	200K CT	1K CT	0	$13.42	$12.08	$11.19	$10.47
PCT-17	15	Input	200K	1K	0	12.67	11.40	10.56	9.88
PCT-54	75	Output	600 CT	12	4.5	11.42	10.28	9.52	8.91
PCT-76	75	Output Isolation	10K CT	10K CT	1	12.42	11.18	10.36	9.69
PCT-77	75	Output Isolation	600 CT	600 CT	3	10.92	9.83	9.10	8.52

*Unbalanced in primary.

No. SPCT-10—Magnetic alloy shield for all PCT transformers. Net Each, Quantities of 1–9.....$2.33
Net Each, Quantities of 10–24.....$2.10; 25–49.....$1.89; 50–99..... 1.75

PCT

NV

MULTIPLE SECONDARY FILAMENT TRANSFORMERS

Primary 117 V. Insul. test, 2500 V rms, except model P-6434, 1500 V rms. Mtg. "C". Lead terminations.

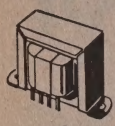
Stancor No.	Secondary Volts	Amps	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-6428*	6.3, 6.3, 6.3, 6.3†	1.75, 1.75, 1.75, 1.75	3⅛ x 2½ x 3⅛	$ 9.09	$ 8.18	$ 7.36	$ 6.82
P-6430*	6.3†, 6.3†	3.0, 3.0	2⅞ x 2½ x 3⅛	8.75	7.88	7.09	6.56
P-6429*	6.3, 6.3, 6.3, 6.3†	3.5, 3.5, 3.5, 3.5	3½ x 3⅛ x 3⅞	12.34	11.11	10.00	9.26
P-6431*	6.3†, 6.3†	6.0, 6.0	3½ x 3⅜ x 3⅞	14.59	13.13	11.82	10.94
P-6434*	12.6, 12.6†	2.5, 2.5	3¼ x 2 1⅜6 x 3½	8.34	7.51	6.76	6.26

Has electrostatic shield. †Center tapped. •Windings may be connected in series or parallel if properly phased.

PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

ESSEX STANCOR TRANSISTOR TRANSFORMERS

A1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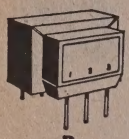
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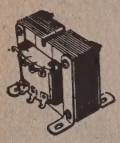
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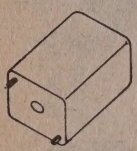
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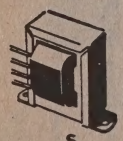
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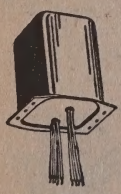

SC

NV

PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

MINIATURE TRANSISTOR AUDIO TRANSFORMERS

.150 Watt Group—Dimensions: 1 3/16" w. x 5/8" d. x 2 1/32" h. Mtg. tabs 2 5/32" centers, 3/16" w. Weight, 0.65 oz. Mtg. Type A1.

Stancor No.	Application	Impedance, Ohms Primary	Impedance, Ohms Secondary	DC Resis., Ohms Primary	DC Resis., Ohms Secondary	Net Each, Quantities of 1-9	10-24	25-49	50-99
TA-18	Input	30 CT	50,000	14.7	4060	$8.42	$7.58	$6.82	$6.32
TA-19	Interstage	100 CT	10 CT	19	1.27	4.67	4.20	3.78	3.50
TA-20	Output	350 CT	4, 12	38	1.45	6.00	5.40	4.86	4.50
TA-21	Output	500 CT	4, 8, 16	75.3	3.55	5.42	4.88	4.39	4.07
TA-22	Interstage	500 CT	50	59.7	7.9	4.83	4.35	3.91	3.62
TA-23	Output	600 CT	4, 8, 16	73.2	3.2	5.83	5.25	4.72	4.37
TA-24	Interstage	500 CT	50,000	76.8	5135	4.83	4.35	3.91	3.62
TA-25	Output	825 CT	4, 8, 16	74	2.7	6.00	5.40	4.86	4.50
TA-26	Output	1,250	4, 12	132.5	1.4	5.17	4.65	4.19	3.88
TA-27	Interstage	1,200	20,000 CT	142	1860	6.50	5.85	5.27	4.88
TA-28	Interstage	1,500	500 CT	104	46.5	5.33	4.80	4.32	4.00
TA-29	Output	2,500	4, 16	370	2.3	4.83	4.35	3.91	3.62
TA-30	Interstage	5,000 CT	7,500 CT	650	790	5.17	4.65	4.19	3.88
TA-31	Interstage	5,000 CT	10,000 CT	635	825	5.17	4.65	4.19	3.88
TA-32	Interstage	5 000 CT	80,000 CT	500	5200	5.50	4.95	4.46	4.13
TA-33	Output	10,000 CT	4, 8, 16	1174	2.6	5.17	4.65	4.19	3.88
TA-34	Interstage	10,000	200 CT	1200	25.0	4.33	3.90	3.51	3.25
TA-35	Interstage	10,000	2,000 CT	1200	257	5.00	4.50	4.05	3.75
TA-36	Interstage	10,000	3,000 CT	1200	385	5.00	4.50	4.05	3.75
TA-37	Output	400 CT	11	71.5	1.5	7.17	6.45	5.81	5.38
TA-38	Interstage	500 CT	150 CT	62	21.2	4.83	4.35	3.91	3.62
TA-54	Interstage	20,000	800 CT	1350	95	5.17	4.65	4.19	3.88

.300 Watt Group—Dimensions: 1 5/8" w. x 3/4" d. x 1 3/16" h. Mtg. centers, 1 3/8". Weight, 1.2 oz. Mtg. Type A.

TA-39	Output	100 CT	4, 8, 16	10.9	1.45	$5 42	$4.88	$4.39	$4.07
TA-40	Output	160	4, 8, 16	18.7	1.4	5.33	4.80	4.32	4.00
TA-41	Output	400 CT	4, 8, 16	34	1.5	5.17	4.65	4.19	3.88
TA-42	Output	500 CT	4, 8, 16	47	.85	5.83	5.25	4.72	4.37
TA-43	Output	700 CT	4, 8, 16	77	1.15	5.00	4.50	4.05	3.75
TA-44	Output	2,500	4, 8, 16	172	1.15	7.33	6.60	5.94	5.50
TA-45	Output	3,000	4, 8, 16	192	1.2	5.83	5.25	4.72	4.37
TA-46	Interstage	100,000	1,500 CT	3250	143	5.67	5.10	4.59	4.25
TA-47	Input	1,000 CT	200,000 CT	123	1815	5.75	5.18	4.66	4.31
TA-52	Interstage	500 CT	500 CT	40	55	5.33	4.80	4.32	4.00
TA-55	Input	500,000	200 CT	12000	18	7.33	6.60	5.94	5.50
TA-63	Driver	20,000 CT	2,000 CT	2140	325	6.67	6.00	5.40	5.00

MINATURE TRANSISTOR AUDIO TRANSFORMERS FOR PRINTED CIRCUITS

.150 Watt Group—Dimensions: 1 3/16" w. x .65" d. x 3/4" h. Mtg. Type B.

Stancor No.	Application	Impedance, Ohms Primary	Impedance, Ohms Secondary	DC Resis., Ohms Primary	DC Resis., Ohms Secondary	Net Each, Quantities of 1-9	10-24	25-49	50-99
TAPC-28	Interstage	1,500	500 CT	104	46.5	$6.83	$6.15	$5.53	$5.12
TAPC-31	Interstage	5,000 CT	10,000 CT	635	825	6.00	5.40	4.86	4.50
TAPC-32	Interstage	5,000 CT	80,000 CT	500	5200	6.00	5.40	4.86	4.50
TAPC-34	Interstage	10,000	200 CT	1200	25	5.50	4.95	4.46	4.13
TAPC-35	Interstage	10,000	2,000 CT	1200	257	5.00	4.50	4.05	3.75
TAPC-36	Interstage	10,000	3,000 CT	1200	385	6.25	5.63	5.06	4.69
TAPC-38	Interstage	500 CT	150 CT	62	21.2	5.00	4.50	4.05	3.75

.300 Watt Group—Dimensions: 1 1/2" w. x 1" d. x 7/8" h. Mtg. Type B.

TAPC-47	Input	1,000 CT	200,000 CT	123	1815	$5.83	$5.25	$4.72	$4.37
TAPC-52	Interstage	500 CT	500 CT	40	55	5.58	5.02	4.52	4.19
TAPC-63	Driver	20,000 CT	2,000 CT	2140	325	5.42	4.88	4.39	4.07

TRANSISTOR AUDIO TRANSFORMERS

Special transformers for transistor applications Mtg. Types: TA-56, TA-57 and TA-61, S; TA-13, SC; TA-60, TS; all others, Mtg. Type A.

Stancor Number	Impedance, Ohms Pri.	Impedance, Ohms Sec.	DC Res., Ohms Pri.	DC Res., Ohms Sec.	Max. Pri. mADC	Watts	Net Each, Quantities of 1-9	10-24	25-49	50-99
TA-1*	600 CT	10	42	.8	20	.05	$5.00	$4.50	$4.05	$3.75
TA-2†	100 CT	10 CT	4.3	.8	100	.25	3.33	3.00	2.70	2.50
TA-3‡	100	1000 CT	5.8	45	100	.25	3.58	3.22	2.90	2.69
TA-4†	500 CT	5000 CT	37	250	12	.03	4.67	4.20	3.78	3.50
TA-5‡	1000	200 CT	400	115	10	.05	5.83	5.25	4.72	4.37
TA-6†	2000	200 CT	720	115	5	.05	6.67	6.00	5.40	5.00
TA-7‡	100	100 CT	12	12	100	.5	4.17	3.75	3.38	3.13
TA-9§	1000	4/8/16	180	3.5	10	.2	5.58	5.02	4.52	4.19
TA-10§	2000 CT	4/8/16	250	4	.....	.2	8.34	7.51	6.76	6.26
TA-11§	48 CT	8/16	5	1.5	275	.5	6.25	5.63	5.06	4.69
TA-12§	20 CT	8	.55	.35	500	10	4.00	3.60	3.24	3.00
TA-13‡	200 CT	400 CT	4	7	10	.6	10.42	9.38	8.44	7.82
TA-56§#	48 CT	3.2/8/16	3.6	1.4	550	10	5.17	4.65	4.19	3.88
TA-57§	100 CT	3.2/8/16	6.6	1.5	500	10	5.17	4.65	4.19	3.88
TA-58‡	100	200 CT	6.5	15.5	200	.5	4.08	3.67	3.30	3.06
TA-59‡	500 CT	200 CT	36.5	15.5	50	.5	4.17	3.75	3.38	3.13
TA-60§	125 CT	8	7.5	0.9	50	1.5	7.92	7.13	6.42	5.94
TA-61‡	•	•	1.8	1.8	.....	.....	4.00	3.60	3.24	3.00
TA-62§	25	4	1.5	0.4	400	4	3.33	3.00	2.70	2.50

*Input. †Interstage. ‡Driver. §Output. #Has lugs on secondary. •Trifilar wound ratio, 1:1:1.

TRANSISTOR POWER SUPPLY TRANSFORMERS

For transistor power supplies. Primary 117 VAC, 60 Hz. May be operated from a 400 Hz source with no change in output ratings. Lead wire termination. For rectifier circuits, for P-8193, P-8194, showing DC voltages and allowable DC current, write for Stancor Bulletin No. 587.

Stancor No.	Secondary No. 1 V	Secondary No. 1 A‡	Secondary No. 2 V	Secondary No. 2 A‡	Size, Inches W. x D. x H.	Mtg. Type	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8604#	20 CT	1.0	.....	.....	3 1/4 x 2 1/8 x 2	A	$ 5.00	$ 4.50	$ 4.05	$ 3.75
P-8614#	30	3.0	.....	.....	2 13/16 x 3 5/8 x 3 1/2	C	12.00	10.80	9.72	9.00
P-8621†	24/26/28/30	15.0*	.....	.....	4 1/2 x 5 1/2 x 3 13/16	NH	33.34	30.01	27.01	25.01
P-8623§	18/20/22	2.0*	.....	.....	3 5/8 x 2 1/4 x 3 1/8	S	8.08	7.27	6.54	6.06
P-8197	50 CT	1.0	.....	.....	2 1/2 x 2 11/16 x 3 1/8	C	9.59	8.63	7.77	7.19
P-8198	54 CT	.5	6.3	.5	2 3/16 x 2 9/16 x 2 5/8	C	7.83	7.05	6.34	5.87
P-8193	17/18	6.0	.....	.....	3 1/8 x 3 1/8 x 3 13/16	NV	18.17	16.35	14.72	13.63
P-8194	36	3.0	36	3.0	3 3/4 x 3 3/4 x 4 3/16	NV	30.01	27.01	24.31	22.51
P-8196	80 CT	1.5	.....	.....	2 13/16 x 3 5/8 x 3 1/2	C	12.67	11.40	10.26	9.50

*Secondary is one tapped winding. †Secondary leads have lugs attached. ‡rms. §Solder lug termination. #May be operated from 117 V, 50/60 Hz at full rated load.

ESSEX STANCOR Power Transformers

POWER TRANSFORMERS FOR CAPACITOR INPUT SYSTEMS

Primary 117 V, 60 Hz; may be operated from a 400 Hz source with no change in output. Meets EIA requirements for electrical tolerances, dielectric strength, temperature rise and construction. Operating temperature 105° C max. All secondary AC voltages ±3%.

Stancor No.	Plate Windings AC V	Plate Windings mA DC	Rectifier Filament V	Rectifier Filament A	Other Windings V	Other Windings A	Base Area, Inches	Mtg. Type	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8379	115§	290	.....	...	2.7/6.3	.45/8.0	3 7/16 x2 13/16	M*	5.7	$20.00	$18.00	$16.20	$15.00
P-6146	120-0-120	250	5.0	3.0	.....	.....	3 1/4 x3 1/8	C	4.2	13.59	12.23	11.01	10.19
PS-8415	125#	15	.....	...	6.3	.6	2 3/8 x1 3/8	S	.7	4.58	4.12	3.71	3.44
P-8624	125#	15	.....	...	12.6	.3	2 3/8 x1 3/8	S	.7	4.33	3.90	3.51	3.25
PS-8416	125-0-125	25	.....	...	6.3	1.0	2 13/16x1 3/4	S	1.0	5.42	4.88	4.39	4.07
P-8625	125-0-125	25	.....	...	12.6	.6	2 13/16x1 3/4	S	1.0	5.58	5.02	4.52	4.19
PA-8421	125#	50	.....	...	6.3	2.0	3 1/16x2 1/8	A	1.5	6.67	6.00	5.40	5.00
P-8626	125#	50	.....	...	12.6	1.0	3 1/16x2 1/8	A	1.5	6.67	6.00	5.40	5.00
P-8181	150#	25	.....	...	6.3 CT	.5	2 3/8 x1 13/16	VE	.8	5.83	5.25	4.72	4.37
P-8627	150#	25	.....	...	12.6 CT	.3	2 3/8 x1 13/16	VE	.8	6.33	5.70	5.13	4.75
P-8359	190-160-0 160-190	70	.....	...	6.3 CT/ 6.3	3.0/.6	2 5/8 x2 1/2	C	2.8	13.00	11.70	10.53	9.75
P-8383	200-0-200	110	.....	...	6.3/6.3 CT	2.0/4.0	3 1/4 x2 1/2	C	3.0	14.00	12.60	11.34	10.50
PC-8417	220-0-220	50	.....	...	6.3/25.2	.6/.5	2 5/8 x2 1/2	C	2.2	10.50	9.45	8.51	7.88
PC-8418	230-0-230	50	.....	...	6.3	2.5	2 5/8 x2 1/2	C	2.2	8.75	7.88	7.09	6.56
PM-8418	230-0-230	50	.....	...	6.3	2.5	3 x2 1/2	M	2.2	10.00	9.00	8.10	7.50
PC-8401	235-0-235	40	5.0	2.0	6.3 CT	2.0	2 5/8 x2 1/2	C	2.2	11.34	10.21	9.19	8.51
PC-8402	240-0-240	55	5.0	2.0	6.3 CT	2.0	2 3/4 x2 1/2	C	2.4	11.00	9.90	8.91	8.25
PC-8419	240-0-240	70	.....	...	6.3	3.0	2 7/8 x2 1/2	C	2.6	9.67	8.70	7.83	7.25
P-8173	250-0-250	10	.....	...	6.3/6.3	.6/1.2	2 1/4 x2 7/8	C1	1.0	9.34	8.41	7.57	7.01
PC-8403	250-0-250	70	5.0	2.0	6.3 CT	2.5	3 1/2 x2 1/2	C	3.2	11.67	10.50	9.45	8.75
PC-8404	260-0-260	90	5.0	2.0	6.3 CT	3.0	3 1/2 x2 13/16	C	4.0	13.00	11.70	10.53	9.75
PC-8420	260-0-260	90	.....	...	6.3	4.0	3 1/4 x2 13/16	C	3.5	11.00	9.90	8.91	8.25
PC-8405	270-0-270	120	5.0	3.0	6.3 CT	3.5	3 1/2 x3 1/8	C	4.9	15.00	13.50	12.15	11.25
P-8356	270-0-270	260	5.0	3.0	6.3	8.8	3 3/8 x3 1/8	C*	6.5	23.34	21.01	18.91	17.51
P-8377	270-0-270	280	5.0	3.0	6.3	10.0	3 15/16x3 1/8	M*	6.7	25.01	22.51	20.26	18.76
P-8373	280-0-280	280	5.0	3.0	6.3/24.0	10.0/2.6	3 3/4 x3 1/8	M	8.0	23.34	21.01	18.91	17.51
P-8378	280-0-280 250-0-250	300	5.0/3.0	4.5	6.3/24.0	10.0/1.2	4 5/8 x3 1/8	C*	7.9	30.01	27.01	24.31	22.51
P-8355	285-0-285	250	5.0	3.0	6.3	9.5	3 1/2 x3 3/4	C4*	6.5	23.34	21.01	18.91	17.51
P-6358	300-0-300	65	.....	...	6.3 CT	2.7	2 1/2 x2 1/2	C	3.0	10.42	9.38	8.44	7.82
P-8175	300-0-300	70	5.0	3.0	6.3 CT	3.0	3 1/2 x2 7/8	C	4.0	22.50	20.25	18.23	16.88
P-8177	300-0-300	120	5.0	3.0	6.3 CT	3.0	3 5/8 x3 3/16	C	5.8	20.17	18.15	16.34	15.13
PC-8406	325-0-325	40	5.0	2.0	6.3 CT	2.0	2 3/4 x2 1/2	C	2.4	11.17	10.05	9.05	8.38
PC-8407	325-0-325	55	5.0	2.0	6.3 CT	2.0	3 1/8 x2 1/2	C	3.2	11.50	10.35	9.32	8.63
PC-8422	325-0-325	150	5.0	3.0	6.3 CT	5.0	3 7/8 x3 1/8	C	5.8	18.50	16.65	14.99	13.88
P-8339	325-0-325	255	5.0	3.0	12.6 CT	5.25	4 3/8 x3 1/4	C	8.5	25.42	22.88	20.59	19.07
PC-8408	340-0-340	70	5.0	2.0	6.3 CT	2.5	3 3/8 x2 13/16	C	3.8	14.09	12.68	11.41	10.57
P-6011	350-0-350	70	5.0 CT	3.0	6.3 CT	2.5	3 x2 1/2	M	3.5	15.42	13.88	12.49	11.57
PC-8409	350-0-350	90	5.0	2.0	6.3 CT	3.0	3 5/8 x2 13/16	C	4.5	15.50	13.95	12.56	11.63
P-8176	350-0-350	110	5.0	2.0	6.3 CT 6.3 CT	3.0 3.0	3 1/8 x3 1/4	C	5.5	33.34	30.01	27.01	25.01
P-8345	350-0-350	215	5.0	3.0	6.3/6.3	9.0/1.2	4 9/16 x3 3/4	M*	11.5	18.34	16.51	14.86	13.76
PC-8410	360-0-360	120	5.0	3.0	6.3 CT	3.5	3 3/4 x3 1/8	C	5.5	17.00	15.30	13.77	12.75
P-6315	370-0-370	275	5.0 CT	3.0	6.3 CT	7.0	4 1/2 x3 3/4	M	9.3	23.84	21.46	19.31	17.88
PC-8411	375-0-375	150	5.0	3.0	6.3 CT	4.5	4 x3 7/16	C	5.8	19.92	17.93	16.14	14.94
PC-8412	400-0-400	200	5.0	3.0	6.3 CT	5.0	4 x3 3/4	C	8.2	25.01	22.51	20.26	18.76
PC-8413	400-0-400	250	5.0	4.0	6.3 CT	5.0	4 1/2 x3 3/4	C	10.0	31.67	28.50	25.65	23.75
PC-8414	600-0-600	200	5.0	3.0	6.3/6.3	3.0/3.0	4 1/4 x3 3/4	C	8.3	29.17	26.25	23.63	21.88

*With copper shorting band to reduce external magnetic field. §For voltage doubler circuits. #For half-wave circuits.

ISOLATION TRANSFORMERS

Electrostatic shields grounded to core. Primary 50/60 Hz, line cord. May be operated from a 400 Hz source with no change in output.

STRAIGHT ISOLATION

Secondary female receptacle, except P-6411, P6411A, P-6412, P-6413 and P-8622 have lead wires.

Stancor No.	Cap. VA	Voltage Input	Voltage Output	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-6413	0.6	115	115	A	2 1/8 x 1 1/4 x 1 1/4	$ 3.50	$ 3.15	$ 2.84	$ 2.63
P-6411	15	115	115	A	3 1/4 x 1 7/8 x 2	5.17	4.65	4.19	3.88
P-6411A	15	115	115	HE	3 1/4 x 1 7/8 x 2	6.17	5.55	5.00	4.63
P-6412	35	115	115	A	3 3/4 x 2 x 2 3/8	6.67	6.00	5.40	5.00
P-6410	50	115	115	C	2 13/16 x 3 1/8 x 3 1/2	14.00	12.60	11.34	10.50
P-6160*	100	105/115/125	115	C	3 3/4 x 3 3/4 x 4 11/16	27.92	25.13	22.62	20.94
P-8622	150	115†	115/230#	C	3 1/8 x 4 x 3 7/8	18.34	16.51	14.86	13.76
P-6371	175	117	117	SC	5 1/4 x 4 9/16 x 5 5/16	33.17	29.85	26.87	24.88
P-6161*	250	105/115/125	115	C	3 3/4 x 5 1/2 x 4 11/16	38.34	34.51	31.06	28.76
P-6298*	500	105/115/125	115	FS	5 5/8 x 7 1/4 x 7 5/8	91.69	82.52	74.27	68.77
P-6125†	1000	105/115/125	115	FS	5 5/8 x 7 3/4 x 7 5/8	141.70	127.53	114.78	106.28
P-6123†	1500	104/115/125	115	FS	5 5/8 x 9 x 7 5/8	206.71	186.04	167.44	155.03

STEP-DOWN ISOLATION

Secondary female receptacle. P-6406 has lead wires.

P-6406	50	115/230‡§	115	A	3 3/4 x 2 5/16 x 2 3/8	$ 8.00	$ 7.20	$ 6.48	$ 6.00
P-6383*	100	210/230/250	115	C	3 3/4 x 3 3/4 x 4 11/16	30.01	27.01	24.31	22.51
P-6385*	250	210/230/250	115	C	5 1/2 x 3 3/4 x 4 11/16	39.34	35.41	31.87	29.51
P-6387*	500	210/230/250	115	FS	7 1/8 x 5 5/8 x 7 3/4	100.02	90.02	81.02	75.02

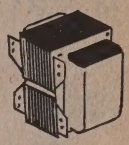
*Has primary switch. †Has primary terminals. ‡Has electrostatic shield. §Primary is two separate windings. #Secondary is two separate 115 windings.

ISOLATION TESTING

Secondary three female receptacles.

P-6415	350	117	105/115/125	C	5 13/16 x 4 5/8 x 5 1/2	$46.18	$41.56	$37.41	$34.64

M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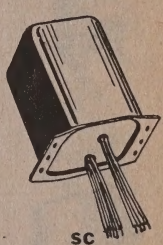
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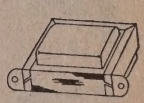
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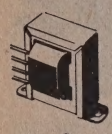
PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

ESSEX STANCOR Transformers

RECTIFIER, CONTROL AND FILAMENT TRANSFORMERS

All primaries 50/60 Hz. May be operated from a 400 Hz source with no change in output rating. All secondary voltages ±3%. Insulation test voltage is twice allowable rms working voltage plus 1000 volts.

A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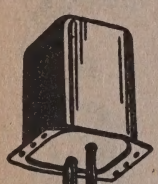
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Stancor No.	Secondary V	Secondary A	Insul. Test V rms	Pri. V	Termination Pri.	Termination Sec.	Mtg.	Size, Inches H. x W. x D.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8628	2.5 C.T.	0.3	1500	117	Leads	Leads	A	1¼ x2⅛ x1⅝	$ 3.25	$ 2.93	$ 2.63	$ 2.44
P-4026	2.5	1.5	2500	117	Leads	Leads	A	1⅝ x2⅞ x1⅝	4.00	3.60	3.24	3.00
P-6133*	2.5 C.T.	5.0	7500	117	Leads	Leads	S	2¾ x3⅛ x2¼	8.50	7.65	6.89	6.38
P-6467	5.0 C.T.	3.0	2500	117	Leads	Leads	A	2 x3¼ x2⅛	5.17	4.65	4.19	3.88
P-6135	5.0 C.T.	10.0	2500	117	Leads	Leads	NV	3⅛ x2½ x2¾	10.34	9.31	8.38	7.76
P-8385	6.3 C.T.	0.3	1500	117	Leads	Leads	A	1¼ x2⅛ x1¾	3.58	3.22	2.90	2.69
P-6465	6.3 C.T.	0.6	1500	117	Leads	Leads	A	1⅜ x2⅜ x1½	3.75	3.38	3.04	2.81
P-8705	6.3 C.T.	0.6	1500	230	Leads	Leads	A	1⅜ x2⅜ x1½	3.58	3.22	2.90	2.69
P-8389	6.3	1.0	1500	117	Leads	Leads	A	1⅝ x2⅞ x1½	3.75	3.38	3.04	2.81
P-6134	6.3 C.T.	1.2	3000	117	Leads	Leads	A	1⅝ x2⅞ x1⅞	3.75	3.38	3.04	2.81
P-8190	6.3	1.2	5000	117	Leads	Leads	A	2 x3¼ x1⅞	5.42	4.88	4.39	4.07
P-6466	6.3 C.T.	3.0	2500	117	Leads	Leads	A	2 x3¼ x2⅛	5.42	4.88	4.39	4.07
P-8648	6.3 C.T.	4.0	1500	117	Leads	Leads	A	2⅜ x3¾ x2⅛	3.67	3.30	2.97	2.75
P-8649	6.3 C.T.	5.0	1500	117	Leads	Leads	A	2⅜ x3¾ x2⅛	6.00	5.40	4 86	4.50
P-3064*	6.3 C.T.	6.0	2500	117	Lugs	Lugs	NV	3⅛ x2½ x2⅜	9.59	8.63	7.77	7.19
P-6456	6.3 C.T.	6.0	2000	117/107	Leads	Leads	A	2⅜ x3¾ x2⅜	7.33	6.60	5.94	5.50
P-8651	6.3 C.T.	8.0	1500	117	Leads	Leads	A	2⅝ x4 x2¼	7.92	7.13	6.42	5.94
P-6464	6.3 C.T.	10.0	2000	117	Leads	Leads	A	3½ x2 13/16 x3¼	11.67	10.50	9.45	8.75
P-6308*	6.3 C.T.	10.0	2500	117/107	Leads	Leads	NV	3 7/16 x2 13/16 x2⅝	12.09	10.88	9.79	9.07
P-6309	6.3 C.T.	20.0	2500	117/107	Leads	Leads	NV	4 9/16 x3¾ x3⅜	19.00	17.10	15.39	14.25
P-5015*	7.5 C.T.	4.0	2500	117	Lugs	Lugs	NV	3⅛ x2½ x2¼	10.42	9.38	8.44	7.82
P-6138*	7.5 C.T.	8.0	2500	117	Leads	Leads	NV	3 13/16 x3⅛ x2¾	13.84	12.46	11.21	10.38
P-8652	10.0 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x1⅝	3.67	3.30	2.97	2.75
P-8653	10.0 C.T.	2.0	1500	117	Leads	Leads	A	2 x3¼ x2	4.42	3.98	3.58	3.32
P-8380	10.0 C.T.	3.0	1500	117	Leads	Leads	A	2⅜ x3¾ x2¼	6.25	5.63	5.06	4.69
P-8654	10.0 C.T.	4.0	1500	117	Leads	Leads	A	2⅝ x4 x2⅛	7.08	6.37	5.73	5.31
P-5016*	10.0 C.T.	4.0	2500	117	Lugs	Lugs	NV	3 7/16 x2 13/16 x2½	10.42	9.38	8.44	7.82
P-6458	10.0 C.T.	5.0	2000	117/107	Leads	Leads	NV	3 1/16 x2½ x2½	9.17	8.25	7.43	6.88
P-8655	10.0 C.T.	6.0	1500	117	Leads	Leads	NV	3⅛ x2½ x2¾	9.17	8.25	7.43	6.88
P-8656	10.0 C.T.	8.0	1500	117	Leads	Leads	NV	3 7/16 x2 13/16 x3	11.75	10.58	9.52	8.81
P-6139*	10.0 C.T.	8.0	2500	117	Leads	Leads	NV	3 13/16 x3⅛ x3	14.17	12.75	11.48	10.63
P-8390	12.0	0.15	1500	117	Leads	Leads	A	1¼ x2⅛ x1¼	3.75	3.38	3.04	2.81
P-8391	12.0	0.35	1500	117	Leads	Leads	A	1⅜ x2⅜ x1⅜	3.75	3.38	3.04	2.81
P-8392	12.0	0.70	1500	117	Leads	Leads	A	1⅝ x2⅞ x2⅜	4.17	3.75	3.38	3.13
P-8393	12.0	1.2	1500	117	Leads	Leads	A	2 x3¼ x1⅝	5.17	4.65	4.19	3.88
P-8657	12.0	2.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	4.17	3.75	3.38	3.13
P-8658	12.0	4.0	1500	117	Leads	Leads	A	2⅝ x4 x2¼	7.17	6.45	5.81	5.38
P-8659	12.0	6.0	1500	117	Leads	Leads	NV	3 7/16 x2 13/16 x2⅝	10.34	9.31	8.38	7.76
P-8660	12.0	8.0	1500	117	Leads	Leads	NV	3 13/16 x3⅛ x2¾	12.25	11.03	9.92	9.19
P-8384	12.6 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x1¾	4.58	4.12	3.71	3.44
P-8130	12.6 C.T.	2.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	5.17	4.65	4.19	3.88
P-8358	12.6 C.T.	3.0	1500	117	Leads	Leads	A	2⅜ x3¾ x2¼	6.00	5.40	4.86	4.50
P-8641	12.6 C.T.	4.0	1500	117	Leads	Leads	A	2⅝ x4 x2⅜	6.67	6.00	5.40	5.00
P-8642	12.6 C.T.	6.0	1500	117	Leads	Leads	C	3½ x2 13/16 x3⅜	10.84	9.76	8.78	8.13
P-8643	12.6 C.T.	8.0	1500	117	Leads	Leads	C	3⅞ x3⅛ x3⅝	14.17	12.75	11.48	10.63
P-8644	12.6 C.T.	10.0	1500	117	Leads	Leads	C	4¼ x3 7/16 x3⅞	15.00	13.50	12.15	11.25
P-8394	24.0 C.T.	0.085	1500	117	Leads	Leads	A	1¼ x2⅛ x1¼	4.58	4.12	3.71	3.44
P-8720	24.0 C.T.	0.085	1500	230	Leads	Leads	A	1¼ x2⅛ x1¼	3.92	3.53	3.18	2.94
P-8395	24.0 C.T.	0.20	1500	117	Leads	Leads	A	1⅜ x2⅜ x1⅜	4.58	4.12	3.71	3.44
P-8721	24.0 C.T.	0.20	1500	230	Leads	Leads	A	1⅜ x2⅜ x1⅜	4.00	3.60	3.24	3.00
P-8396	24.0 C.T.	0.40	1500	117	Leads	Leads	A	1⅝ x2⅞ x1½	5.00	4.50	4.05	3.75
P-8722	24.0 C.T.	0.40	1500	230	Leads	Leads	A	1⅝ x2⅞ x1½	4.67	4.20	3.78	3.50
P-8397	24.0 C.T.	0.70	1500	117	Leads	Leads	A	2 x3¼ x1⅝	5.33	4.80	4.32	4.00
P-8661	24.0 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x2 1/16	4.25	3.83	3.44	3.19
P-8662	24.0 C.T.	2.0	1500	117	Leads	Leads	A	2⅝ x4 x2⅜	7.25	6.53	5.87	5.44
P-8663	24.0 C.T.	4.0	1500	117	Leads	Leads	NV	3 13/16 x3⅛ x2 13/16	12.42	11.18	10.06	9.32
P-8664	24.0 C.T.	6.0	1500	117	Leads	Leads	NV	4 3/16 x3 7/16 x3	15.42	13.88	12.49	11.57
P-8665	24.0 C.T.	8.0	1500	117	Leads	Leads	NV	4 3/16 x3 7/16 x3⅜	18.25	16.43	14.78	13.69
P-8666	24.0 C.T.	12.0	1500	117	Leads	Leads	NV	4 9/16 x3¾ x4⅝	26.34	23.71	21.34	19.76
P-6469	25.2	1.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	5.00	4.50	4.05	3.75
P-8180	25.2 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	5.00	4.50	4.05	3.75
P-8357	25.2 C.T.	2.0	1500	117	Leads	Leads	A	2⅝ x4 x2¼	7.92	7.13	6.42	5.94
P-8388	25.2 C.T.	2.8	1500	117	Leads	Leads	A	2⅝ x4 x2¼	9.34	8.41	7.57	7.01
P-8645	25.2 C.T.	5.0	1500	117	Leads	Leads	C	4¼ x3 7/16 x3⅞	14.17	12.75	11.48	10.63
P-8646	25.2 C.T.	7.5	1500	117	Leads	Leads	C	4¼ x3½ x4¼	16.25	14.63	13.16	12.19
P-8647	25.2 C.T.	10.0	1500	117	Leads	Leads	C	4 1/16 x3¾ x5	22.50	20.25	18.23	16.88
P-8608	26.5 C.T.	0.6	2500	117	Leads	Leads	A	2 x3¼ x2⅛	4.83	4.35	3.91	3.62
P-8609	26.8 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	5.00	4.50	4.05	3.75
P-8600	28.0 C.T	0.085	1500	117	Leads	Leads	A	1¼ x2⅛ x1¼	3.75	3.38	3.04	2.81
P-8601	28.0 C.T.	0.175	1500	117	Leads	Leads	A	1⅜ x2⅜ x1⅜	4.42	3.98	3.58	3.32
P-8602	28.0 C.T.	0.3	1500	117	Leads	Leads	A	1⅝ x2⅞ x2⅜	4.17	3.75	3.38	3.13
P-8603	28.0 C.T.	0.8	1500	117	Leads	Leads	A	2 x3¼ x2	5.33	4.80	4.32	4.00
P-8667	28.0 C.T.	1.0	1500	117	Leads	Leads	A	2 x3¼ x2⅛	4.67	4.20	3.78	3.50
P-8668	28.0 C.T.	2.0	1500	117	Leads	Leads	NV	3⅛ x2½ x2½	8.59	7.73	6.96	6.44
P-8669	28.0 C.T.	4.0	1500	117	Leads	Leads	NV	3 13/16 x3⅛ x3¼	14.42	12.98	11.68	10.82
P-8670	28.0 C.T.	6.0	1500	117	Leads	Leads	NV	4 3/16 x3 7/16 x3½	17.25	15.53	13.97	12.94
P-8610	36.0 C.T.	0.065	1500	117	Leads	Leads	A	1¼ x2⅛ x1¼	3.75	3.38	3.04	2.81
P-8611	36.0 C.T.	0.135	1500	117	Leads	Leads	A	1⅜ x2⅜ x1⅜	3.67	3.30	2.97	2.75
P-8612	36.0 C.T.	0.3	1500	117	Leads	Leads	A	1⅝ x2⅞ x1½	4.17	3.75	3.38	3.13
P-8613	36.0 C.T.	0.55	1500	117	Leads	Leads	A	2 x3¼ x1⅝	5.33	4.80	4.32	4.00
P-8671	36.0 C.T.	1.0	1500	117	Leads	Leads	A	2⅜ x3¾ x2¼	4.58	4.12	3.71	3.44
P-8672	36.0 C.T.	2.0	1500	117	Leads	Leads	NV	3 7/16 x2 13/16 x2¾	10.09	9.08	8.17	7.57
P-8673	36.0 C.T.	4.0	1500	117	Leads	Leads	NV	4 3/16 x3 7/16 x2⅞	15.92	14.33	12.90	11.94
P-8674	36.0 C.T.	6.0	1500	117	Leads	Leads	NV	4 9/16 x3¾ x3½	21.25	19.13	17.21	15.94
P-8605	48.0 C.T.†	1.0	2500	117‡	Leads	Leads	A	2⅝ x4 x2⅜	9.67	8.70	7.83	7.25

*Has electrostatic shield. †Nominal. ‡Primary tapped to provide secondary voltages or 45 CT, 51 CT, or 54 CT

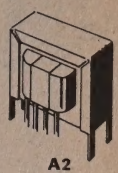
PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

ASK YOUR STANCOR DISTRIBUTOR FOR TRANSFORMER CATALOG #407

HIGH CURRENT FILTER CHOKES

Inductance measured at 1 volt, 60 Hz. Insulation test voltage is twice allowable rms working voltage plus 1000 volts. Lead termination.

Stancor No.	Inductance mH	DC Amps	DC Resis. Ohms	Insul. Test V rms	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
TC-1	3.0	1.0	.25	1000	A2	1½ x 1⅛ x 1 3/16	$ 2.33	$ 2.10	$ 1.89	$ 1.75
TC-2	11.0	1.0	.75	1000	A2	1½ x 1⅛ x 1 3/16	2.50	2.25	2.03	1.88
C-2690	300 or 75	1.0 2.0	3.0 .75	1500	NV	2 13/16 x 3 x 3 7/16	12.67	11.40	10.26	9.50
C-2685	35	2.0	.75	1500	NH	2⅝ x 2½ x 2 5/16	7.00	6.30	5.67	5.25
C-2691	80 or 20	2.5 5.0	.60 .15	1500	NV	3⅛ x 3½ x 3 13/16	18.00	16.20	14.58	13.50
C-2686	25	4.0	.425	1500	NH	3⅜ x 2⅝ x 2⅞	10.42	9.38	8.44	7.82
C-2687	10	8.0	.15	1500	NH	3¾ x 3 x 3 3/16	13.00	11.70	10.53	9.75
C-2688	10	12.5	.11	1500	NH	4⅛ x 3 x 3½	15.84	14.26	12.83	11.88
C-2689	5	22.5	.03	1500	NH	4½ x 4 9/16 x 3 13/16	27.51	24.76	22.28	20.63
C-2692	24 6	20 40	.12 .029	1500	NV	4 7/16 x 5¼ x 5¼	74.18	66.76	60.09	55.64



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MINIATURIZED HIGH CURRENT CHOKES

Inductance measured at 1 V, 60 Hz. Insulation test voltage is twice allowable rms working voltage plus 1000 V. Lead termination.

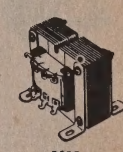
Stancor No.	Inductance mH	DC A	DC Resis. Ohms	Insul. Test V rms	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
C-2721	2000	.065	180	1500	A	2⅛ x 1⅛ x 1¼	$2.33	$2.10	$1.89	$1.75
C-2722	400	.135	31	1500	A	2⅛ x 1⅛ x 1¼	2.08	1.87	1.68	1.56
C-2723	700	.135	40	1500	A	2⅜ x 1¼ x 1 7/16	2.42	2.18	1.96	1.82
C-2724	250	.275	16	1500	A	2⅜ x 1¼ x 1 7/16	2.33	2.10	1.89	1.75
C-2725	400	.275	22	1500	A	2⅞ x 1 7/16 x 1⅝	2.67	2.40	2.16	2.00
C-2726	125	.550	6.0	1500	A	2⅞ x 1 7/16 x 1⅝	2.83	2.55	2.29	2.12
C-2727	250	.500	10	1500	A	3¼ x 1 11/16 x 2	3.42	3.08	2.77	2.57
C-2728	75	1.000	2.5	1500	A	3¼ x 1 11/16 x 2	3.33	3.00	2.70	2.50

NV

LOW CURRENT "VERSATILE" CONTROL/RECTIFIER TRANSFORMERS

Primary 117 V, 50/60 Hz. Three isolated 12-volt secondaries (one with a center tap) provide many combinations of voltage and current with series or parallel connections. Ideal for pilot lamps, miniature relays, low current-low voltage power supplies, etc. Mounting type S.

Stancor No.	Secondary No. 1 V	No. 1 A	No. 2 V	No. 2 A	No. 3 V	No. 3 A	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8361	12	.10	12	.10	12 CT	.10	2 x 1½ x 1¾	$5.42	$4.88	$4.39	$4.07
P-8362	12	.15	12	.15	12 CT	.15	2⅜ x 1¾ x 2	5.00	4.50	4.05	3.75
P-8363	12	.25	12	.25	12 CT	.25	2⅞ x 1¾ x 2⅜	5.50	4.95	4.46	4.13
P-8364	12	.50	12	.50	12 CT	.50	2⅞ x 2⅛ x 2⅜	6.25	5.63	5.06	4.69



SC

MINIATURE POWER TRANSFORMERS

Primary, 115 V, 50-60 Hz. Insulation test voltage, 500 V rms between all windings and to core. Printed circuit board mounting with plug-in type terminals.

1.5 VA RATING

Size: 1 3/16" h. x 1⅜" w. x 1⅛" d. Weight: 0.22 lb. Style PC.

Stancor No.	Output from two secondaries Individually	Parallel	Series	Net Each, Quantities of 1-9	10-24	25-49	50-99
PPC-1	4 V @ .188 A	7 V @ .376 A	8 V @ .188 A	$5.50	$4.95	$4.46	$4.13
PPC-2	7.5 V @ .100 A	7.5 V @ .200 A	15 V @ .100 A	5.58	5.02	4.52	4.19
PPC-3	15 V @ .050 A	15 V @ .100 A	30 V @ .050 A	5.67	5.10	4.59	4.25
PPC-4	27 V @ .028 A	27 V @ .056 A	54 V @ .028 A	6.25	5.63	5.06	4.69
PPC-5	38 V @ .020 A	38 V @ .040 A	76 V @ .020 A	6.67	6.00	5.40	5.00
PPC-6	58 V @ .013 A	58 V @ .026 A	116 V @ .013 A	3.58	3.22	2.90	2.69
PPC-7	20 V @ .038 A	20 V @ .076 A	40 V @ .038 A	3.50	3.15	2.84	2.63

NH

PC
APC

4.5 VA RATING

Size: 1 1/16" h. x 2⅜" w. x 1¼" d. Weight: 0.47 lb. Style APC.

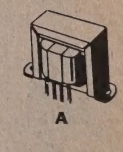
PPC-11	4 V @ .562 A	4 V @ 1.13 A	8 V @ .562 A	$5.17	$4.65	$4.19	$3.88
PPC-12	7.5 V @ .300 A	7.5 V @ .600 A	15 V @ .300 A	5.42	4.88	4.39	4.07
PPC-13	15 V @ .150 A	15 V @ .300 A	30 V @ .150 A	5.58	5.02	4.52	4.19
PPC-14	27 V @ .084 A	27 V @ .168 A	54 V @ .084 A	5.75	5.18	4.66	4.31
PPC-15	38 V @ .060 A	38 V @ .120 A	76 V @ .060 A	5.83	5.25	4.72	4.37
PPC-16	58 V @ .033 A	58 V @ .066 A	116 V @ .033 A	3.92	3.53	3.18	2.94
PPC-17	20 V @ .112 A	20 V @ .224 A	40 V @ .112 A	3.92	3.53	3.18	2.94

S

7.5 VA RATING

Size: 1 1/16" h. x 2 13/16" w. x 1 7/16" d. Weight: 0.66 lb. Style APC.

PPC-21	4 V @ .940 A	4 V @ 1.88 A	8 V @ .940 A	$5.50	$4.95	$4.46	$4.13
PPC-22	7.5 V @ .500 A	7.5 V @ 1.00 A	15 V @ .500 A	5.58	5.02	4.52	4.19
PPC-23	15 V @ .250 A	15 V @ .500 A	30 V @ .250 A	5.67	5.10	4.59	4.25
PPC-24	27 V @ .140 A	27 V @ .280 A	54 V @ .140 A	5.83	5.25	4.72	4.37
PPC-25	38 V @ .100 A	38 V @ .200 A	76 V @ .100 A	6.00	5.40	4.86	4.50
PPC-26	58 V @ .065 A	58 V @ .130 A	116 V @ .065 A	4.50	4.05	3.65	3.38
PPC-27	20 V @ .188 A	20 V @ .376 A	40 V @ .188 A	4.42	3.98	3.58	3.32



A

AUTOMATION CONTROL/RECTIFIER TRANSFORMERS

May be operated from a 400 Hz source with no change in output ratings. By connecting primaries in series (for 230 V) but using only 115 input, a series of half voltage output ratings becomes available at the full rated current from each secondary. Solder lug termination.

Stancor No.	Secondary Parallel	Series	VA Rating	Mtg. Type	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-6375	6 V at 2 amps	12 V at 1 amp	12	S	1	$ 5.42	$ 4.88	$ 4.39	$ 4.07
P-6376	6 V at 4 amps	12 V at 2 amps	24	S	1.5	6.50	5.85	5.27	4.88
P-6377	12 V at 4 amps	24 V at 2 amps	48	S	2.5	8.34	7.51	6.76	6.26
P-6378	12 V at 8 amps	24 V at 4 amps	96	NV	4.2	13.75	12.38	11.14	10.31
P-6379	12 V at 16 amps	24 V at 8 amps	192	NV	8	25.01	22.51	20.26	18.76
P-8615	24 V at 0.5 amp	48 V at 0.25 amp	12	S	1.0	6.00	5.40	4.86	4.50
P-8616	24 V at 1 amp	48 V at 0.5 amp	24	S	1.5	6.83	6.15	5.53	5.12
P-8617	24 V at 2 amps	48 V at 1 amp	48	S	2.5	8.34	7.51	6.76	6.26
P-8618	24 V at 4 amps	48 V at 2 amps	96	NV	4.2	13.50	12.15	10.94	10.13
P-8619	24 V at 8 amps	48 V at 4 amps	192	NV	8.0	20.00	18.00	16.20	15.00

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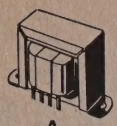
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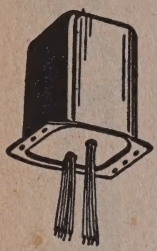

SC

L

C

NV

SMOOTHING FILTER CHOKES

Inductance tolerance, −15% +50% at 10 volts, 60 Hz. Insulation test voltage is twice allowable rms working voltage plus 1000 volts. Lead termination unless otherwise noted.

Stancor No.	Induc-tance H	DC mA	DC Resis. Ohms	Insul. Test V rms	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
C-2345	350	5	5600	2500	A	3¼ x 1¾ x 2	$ 5.33	$ 4.80	$ 4.32	$ 4.00
C-2344	1.5	10	85	2500	A	2⅛ x 1⅛ x 1¼	2.50	2.25	2.03	1.88
C-2707	2.0	15	70	1500	A	2⅛ x 1⅛ x 1¼	2.67	2.40	2.16	2.00
C-1515	20.0	15	900	1500	A	2⅞ x 1⅜ x 1⅝	3.75	3.38	3.04	2.81
C-2346	35.0	15	1800	1500	A	2⅜ x 1⅜ x 1⅜	3.00	2.70	2.43	2.25
C-2318	12.0	30	400	2000	A	2⅜ x 1⅜ x 1⅜	2.92	2.63	2.37	2.19
C-1706	4.5	50	300	1500	A	2⅛ x 1¼ x 1⅜	2.92	2.63	2.37	2.19
C-1707	7.0	50	550	1500	A	2⅜ x 1¼ x 1⅜	3.33	3.00	2.70	2.50
C-1279	8.5	50	400	1500	A	2⅞ x 1⅜ x 1⅝	3.58	3.22	2.90	2.69
C-1215	9.0	50	500	1500	A	2⅞ x 1⅜ x 1⅝	3.42	3.08	2.77	2.57
C-1003	16.0	50	580	1500	A	3¼ x 1⅝ x 2	4.17	3.75	3.38	3.13
C-1708	13.0	65	500	1500	A	3¼ x 1¾ x 2	3.25	2.93	2.63	2.44
C-1355*	8.0	75	290	1500	L	2 x 2⅜ x 2	5.00	4.50	4.05	3.75
C-1002	15.0	75	400	1500	A	3¾ x 2 x 2⅜	4.83	4.35	3.91	3.62
C-1709	8.0	85	250	1500	A	3¼ x 1⅞ x 2	4.17	3.75	3.38	3.13
C-2305	5.0	100	300	1500	SC	2 1/16 x 2¼ x 2 1/16	8.84	7.96	7.16	6.63
C-1001	10.5	110	225	3000	A	4 x 2⅛ x 2⅝	6.67	6.00	5.40	5.00
C-2303	2.5	130	100	2000	A	3¼ x 1⅝ x 2	4.17	3.75	3.38	3.13
C-2304	2.3	150	60	1500	A	3¼ x 1¾ x 2	4.08	3.67	3.30	3.06
C-2309	3.0	150	90	2000	A	3¾ x 1⅞ x 2⅜	4.92	4.43	3.99	3.69
C-1710	7.0	150	200	1500	A	4 x 2 x 2⅝	6.92	6.23	5.61	5.19
RC-12150	12.0	150	150	2500	SC	4 x 3¼ x 3⅞	12.50	11.25	10.13	9.38
C-2327	1.5	200	85	1500	A	2⅞ x 1½ x 1⅝	3.33	3.00	2.70	2.50
C-2325	2.0	200	60	1500	A	3¾ x 1⅞ x 2⅜	4.92	4.43	3.99	3.69
C-1411	4.5	200	80	3000	C	2 13/16 x 4¼ x 3½	10.34	9.31	8.38	7.76
RC-8200	8.0	200	85	2500	SC	4 7/16 x 3 11/16 x 4 5/16	21.67	19.50	17.55	16.25
C-2705	10.0	200	150	2500	C	2 13/16 x 3 9/16 x 3½	9.25	8.33	7.49	6.94
C-2343	0.75	300	32	1500	A	2⅞ x 1⅜ x 1⅝	3.17	2.85	2.57	2.38
C-2326	1.0	300	43	1500	A	3¾ x 2 x 2⅜	5.00	4.50	4.05	3.75
C-2334	2.8	300	60	1500	A	4 x 2⅛ x 2⅝	8.08	7.27	6.54	6.06
C-2308	8.0	300	80	3000	C	3¾ x 4 x 4 1/16	16.25	14.63	13.16	12.19
C-2347	1.0	350	40	1500	A	3¼ x 1¾ x 2	4.17	3.75	3.38	3.13
C-2328	0.8	375	25	1500	A	3¾ x 1⅞ x 2⅜	5.50	4.95	4.46	4.13
C-2709	2.0	400	40	2500	A	4 x 2⅛ x 2⅝	8.42	7.58	6.82	2.32
C-2708	0.32	600	10	1500	A	3¼ x 1⅝ x 2	4.17	3.75	3.38	3.13

*With lugs.

STEP-DOWN AUTOTRANSFORMERS

Primary 230 V, 50/60 Hz; line cord and plug. Secondary 115 V; standard female receptacle.

Stancor No.	Cap. VA	Mtg. Type	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-6287	40	C	2½ x 2⅝ x 3½	2.2	$12.17	$10.95	$ 9.86	$ 9.13
P-5063	100	C	3⅛ x 3⅝ x 3⅞	4.5	13.75	12.38	11.14	10.31
P-5064	150	C	3 7/16 x 3⅝ x 4¼	5.2	14.75	13.28	11.95	11.06
SD-50	50	SC	3½ x 2⅞ x 3½	2.8	15.00	13.50	12.15	11.25
SD-500	500	SC	5⅞ x 5 5/16 x 6 1/16	14.5	40.01	36.01	32.41	30.01
P-8620*	50	A	3 1/16 x 1⅞ x 2 5/16	1.5	4.83	4.35	3.91	3.62
P-8630	85	C	2⅝ x 2¾ x 3½	2.5	11.25	10.13	9.11	8.44
P-8631	125	C	2⅝ x 3 x 3½	3.0	11.50	10.35	9.32	8.63
P-8632	200	C	3⅛ x 3¾ x 3⅞	4.2	15.17	13.65	12.29	11.38
P-8633	300	C	3⅛ x 4⅛ x 3⅞	5.2	17.50	15.75	14.18	13.13
P-8634	400	C	3⅛ x 4¾ x 3⅞	7.0	21.00	18.90	17.01	15.75
P-8635	500	C	3¾ x 4¾ x 4 5/16	10.3	26.01	23.41	21.70	19.51
P-8636	1000	C	3¾ x 6⅜ x 4 5/16	17.0	37.67	33.90	30.51	28.25

*Has lead wires.

STEP-UP AUTOTRANSFORMERS

Primary 115 V, 50/60 Hz; line cord and plug. Secondary 230 V; standard female receptacle.

P-8637	85	C	2⅝ x 2¾ x 3½	2.5	$ 9.92	$ 8.93	$ 8.04	$ 7.44
P-8638	125	C	2⅝ x 3 x 3½	3.0	10.00	9.00	8.10	7.50
P-8639	300	C	3⅛ x 3⅞ x 3⅞	5.2	15.92	14.33	12.90	11.94
P-8640	500	C	3¾ x 4¾ x 4 5/16	10.3	27.92	25.13	22.62	20.94

STEP-DOWN AUTOTRANSFORMERS

Grounded safety type; 3-wire NEMA standard line cord, plug and receptacle. Semi-shielded construction.

Stancor No.	Input V	Output V	Test Vrms	Cap. VA	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
GSD-75	230	115	1500	75	C	3 3/16 x 2¼ x 3⅞	$14.34	$12.91	$11.62	$10.76
GSD-100	230	115	1500	100	C	3 3/16 x 3 x 3⅞	15.84	14.26	12.83	11.88
GSD-150	230	115	1500	150	C	3 3/16 x 3¼ x 3⅞	16.67	15.00	13.50	12.50
GSD-200	230	115	1500	200	C	3 3/16 x 3¼ x 3⅞	20.00	18.00	16.20	15.00
GSD-250	230	115	1500	250	C	3 13/16 x 3¾ x 4⅝	21.67	19.50	17.55	16.25
GSD-300	230	115	1500	300	C	3 3/16 x 3⅝ x 3⅞	22.92	20.63	18.57	17.19
GSD-350	230	115	1500	350	C	3 13/16 x 3¾ x 4⅝	23.34	21.01	18.91	17.51
GSD-400	230	115	1500	400	C	3 3/16 x 4¼ x 3⅞	24.17	21.75	19.58	18.13
GSD-500	230	115	1500	500	C	3 13/16 x 4 3/16 x 4⅝	26.67	24.00	21.60	20.00
GSD-750	230	115	1500	750	C	4⅝ x 4 9/16 x 5½	36.67	33.00	29.70	27.50
GSD-1000	230	115	1500	1000	C	4⅝ x 5⅜ x 5½	41.68	37.51	33.76	31.26
GSD-1500	230	115	1500	1500	C	4⅝ x 5⅞ x 5½	68.35	61.52	55.36	51.26

ISOLATION TRANSFORMERS

Case and core and electrostatic shield internally connected to third conductor of NEMA standard cord and receptacle for safety. May be operated from a 400 Hz source with no change in output ratings.

STRAIGHT ISOLATION

GIS-100	115	115	1500	100	C	2 13/16 x 3 3/16 x 3½	$16.17	$14.55	$13.10	$12.13
GIS-150	115	115	1500	150	C	3 3/16 x 4 3/16 x 3⅞	20.84	18.76	16.88	15.63
GIS-250	115	115	1500	250	C	3¾ x 4⅜ x 4 1/16	26.26	23.63	21.27	19.70
GIS-500	115	115	1500	500	C	3¾ x 6 x 4 1/16	40.01	36.01	32.41	30.01
GIS-1000	115	115	1500	1000	C	4 9/16 x 8⅛ x 5½	77.52	69.77	62.79	58.14

STEP-DOWN ISOLATION

GISD-100	230	115	1500	100	C	2 13/16 x 3 3/16 x 5½	$17.09	$15.38	$13.84	$12.82
GISD-150	230	115	1500	150	C	3⅛ x 4 3/16 x 3⅞	21.25	19.13	17.21	15.94
GISD-250	230	115	1500	250	C	3¾ x 4¼ x 4 1/16	26.67	24.00	21.60	20.00
GISD-500	230	115	1500	500	C	3¾ x 6 x 4 1/16	47.93	43.14	38.82	35.95
GISD-1000	230	115	1500	1000	C	4 9/16 x 8⅛ x 5½	80.02	72.02	64.82	60.02

PRICES ARE FOR INDIVIDUALLY BOXED UNITS. SEE LAST PAGE OF LISTING FOR OEM BULK-PACKED PRICING.

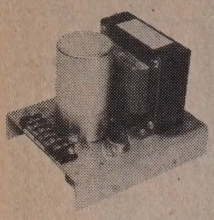
ESSEX STANCOR OEM Bulk Pricing

Consult us for prices on 500 pieces or more and for modified catalog items.

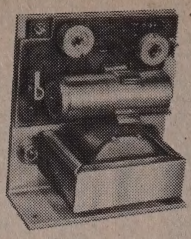
Stancor No.	Net Each, Lots of 100-249	250-499
A-3250	$ 4.41	$ 4.13
A-3309	1.94	1.82
A-3310	Prices on	Request
A-3311	8.19	7.67
A-3327	2.10	1.96
A-3328	1.58	1.48
A-3329	1.63	1.52
A-3332	1.84	1.72
A-3335	2.94	2.76
A-3336	2.31	2.17
A-3337	2.78	2.61
A-3800	7.98	7.48
A-3801	9.98	9.35
A-3823	3.67	3.44
A-3830	4.99	4.67
A-3849	3.67	3.44
A-3852	5.04	4.72
A-3856	3.15	2.95
A-3857	Prices on	Request
A-3872	7.14	6.69
A-3876	1.84	1.72
A-3877	2.00	1.87
A-3878	1.84	1.72
A-3879	2.00	1.87
A-3881	2.00	1.87
A-8092	2.31	2.17
A-8093	2.31	2.17
C-1001	4.20	3.94
C-1002	3.04	2.85
C-1003	2.63	2.46
C-1215	2.15	2.02
C-1279	2.26	2.11
C-1355	3.15	2.95
C-1411	6.51	6.10
C-1515	2.36	2.21
C-1706	1.84	1.72
C-1707	2.10	1.96
C-1708	Prices on	Request
C-1709	2.63	2.46
C-1710	4.36	4.08
C-2303	2.63	2.46
C-2304	2.57	2.41
C-2305	5.57	5.22
C-2308	Prices on	Request
C-2309	3.10	2.90
C-2318	1.84	1.72
C-2325	3.10	2.90
C-2326	3.15	2.95
C-2327	2.10	1.96
C-2328	3.47	3.25
C-2334	5.09	4.77
C-2343	2.00	1.87
C-2344	1.58	1.48
C-2345	3.36	3.14
C-2346	1.89	1.77
C-2347	2.63	2.46
C-2685	4.41	4.13
C-2686	6.56	6.15
C-2687	8.19	7.67
C-2688	9.98	9.35
C-2689	17.33	16.23
C-2690	7.98	7.48
C-2691	11.34	10.62
C-2692	46.73	43.77
C-2705	Prices on	Request
C-2707	1.68	1.58
C-2708	2.63	2.46
C-2709	5.30	4.97
C-2721	1.47	1.37
C-2722	1.31	1.23
C-2723	1.52	1.43
C-2724	1.47	1.37
C-2725	1.68	1.58
C-2726	1.78	1.67
C-2727	2.15	2.02
C-2728	2.10	1.96
GIS-100	10.19	9.54
GIS-150	13.13	12.30
GIS-250	16.54	15.49
GIS-500	25.21	23.61
GIS-1000	48.84	45.74
GISD-100	10.77	10.08
GISD-150	13.39	12.54
GISD-250	16.80	15.74
GISD-500	30.20	28.28
GISD-1000	50.41	47.21
GSD-75	9.03	8.46
GSD-100	9.98	9.35
GSD-150	10.50	9.84
GSD-200	12.60	11.80
GSD-250	13.65	12.79
GSD-300	14.44	13.52
GSD-350	14.70	13.77
GSD-400	15.23	14.26
GSD-500	16.80	15.74
GSD-750	23.10	21.63
GSD-1000	26.26	24.59
GSD-1500	43.06	40.33
P-3064	6.04	5.66
P-4026	2.52	2.36
P-5015	6.56	6.15
P-5016	6.56	6.15
P-5063, 4	Prices on	Request
P-6011	9.71	9.10
P-6123, 5	Prices on	Request
P-6133	5.36	5.02
P-6134	$ 2.36	$ 2.21
P-6135	6.51	6.10
P-6138	8.72	8.17
P-6139	8.93	8.36
P-6146	Prices on	Request
P-6160	17.59	16.47
P-6161	24.15	22.62
P-6287	7.67	7.18
P-6298	57.76	54.10
P-6308	7.62	7.13
P-6309	11.97	11.21
P-6315	Prices on	Request
P-6358	6.56	6.15
P-6371	Prices on	Request
P-6375	3.41	3.20
P-6376	4.10	3.84
P-6377	5.25	4.92
P-6378	8.66	8.11
P-6379	15.76	14.76
P-6383	18.91	17.71
P-6385	24.78	23.21
P-6387	63.01	59.01
P-6406	5.04	4.72
P-6410	8.82	8.26
P-6411	3.26	3.05
P-6411A	3.89	3.64
P-6412	4.20	3.94
P-6413	2.21	2.07
P-6415	29.09	27.25
P-6456	4.62	4.32
P-6458	5.78	5.41
P-6464	7.35	6.89
P-6465	2.36	2.21
P-6466	3.41	3.20
P-6467	3.26	3.05
P-6469	3.15	2.95
P-8130	3.26	3.05
P-8150	7.56	7.08
P-8151	13.13	12.30
P-8173	5.88	5.51
P-8175	14.18	13.28
P-8176	21.00	19.67
P-8177	12.71	11.90
P-8179	13.34	12.49
P-8180	3.15	2.95
P-8181	3.67	3.44
P-8190	3.41	3.20
P-8193	11.45	10.72
P-8194	18.91	17.71
P-8196	7.98	7.48
P-8197	6.04	5.66
P-8198	4.93	4.62
P-8339	16.01	15.00
P-8345	Prices on	Request
P-8355	14.70	13.77
P-8356	14.70	13.77
P-8357	4.99	4.67
P-8358	3.78	3.54
P-8359	8.19	7.67
P-8361	3.41	3.20
P-8362	3.15	2.95
P-8363	3.47	3.25
P-8364	3.94	3.69
P-8373	14.70	13.77
P-8377	15.76	14.76
P-8378	18.91	17.71
P-8379	12.60	11.80
P-8380	3.94	3.69
P-8383	8.82	8.26
P-8384	2.89	2.70
P-8385	2.26	2.11
P-8388	5.88	5.51
P-8389	2.36	2.21
P-8390	2.36	2.21
P-8391	2.36	2.21
P-8392	2.63	2.46
P-8393	3.26	3.05
P-8394	2.89	2.70
P-8395	2.89	2.70
P-8396	3.15	2.95
P-8397	3.36	3.14
P-8600	2.36	2.21
P-8601	2.78	2.61
P-8602	2.63	2.46
P-8603	3.36	3.14
P-8604	3.15	2.95
P-8605	6.09	5.71
P-8608	3.04	2.85
P-8609	3.15	2.95
P-8610	2.36	2.21
P-8611	2.31	2.17
P-8612	2.63	2.46
P-8613	3.36	3.14
P-8614	7.56	7.08
P-8615	3.78	3.54
P-8616	4.30	4.03
P-8617	5.25	4.92
P-8618	8.51	7.97
P-8619	12.60	11.80
P-8620	3.04	2.85
P-8621	21.00	19.67
P-8622	11.55	10.82
P-8623	5.09	4.77
P-8624	2.73	2.55
P-8625	3.52	3.29
P-8626	4.20	3.94
P-8627	$ 3.99	$ 3.73
P-8628	2.05	1.92
P-8630	7.09	6.64
P-8631	7.25	6.79
P-8632	9.56	8.95
P-8633	11.03	10.33
P-8634	13.23	12.39
P-8635	16.39	15.35
P-8636	23.73	22.23
P-8637	6.25	5.85
P-8638	6.30	5.90
P-8639	10.03	9.39
P-8640	17.59	16.47
P-8641	4.20	3.94
P-8642	6.83	6.40
P-8643	8.93	8.36
P-8644	9.45	8.85
P-8645	8.93	8.36
P-8646	10.24	9.59
P-8647	14.18	13.28
P-8648	2.31	2.17
P-8649	3.78	3.54
P-8651	4.99	4.67
P-8652	2.31	2.17
P-8653	2.78	2.61
P-8654	4.46	4.18
P-8655	5.78	5.41
P-8656	7.40	6.93
P-8657	2.63	2.46
P-8658	4.52	4.23
P-8659	6.51	6.10
P-8660	7.72	7.23
P-8661	2.68	2.51
P-8662	4.57	4.28
P-8663	7.82	7.33
P-8664	9.71	9.10
P-8665	11.50	10.77
P-8666	16.59	15.54
P-8667	2.94	2.76
P-8668	5.41	5.07
P-8669	9.08	8.51
P-8670	10.87	10.18
P-8671	2.89	2.70
P-8672	6.36	5.95
P-8673	10.03	9.39
P-8674	13.39	12.54
P-8705	2.26	2.11
P-8720	2.47	2.31
P-8721	2.52	2.36
P-8722	2.94	2.76
PA-8421	4.20	3.94
PC-8401	7.14	6.69
PC-8402	6.93	6.49
PC-8403	7.35	6.89
PC-8404	8.19	7.67
PC-8405	9.45	8.85
PC-8406	7.04	6.59
PC-8407	7.25	6.79
PC-8408	8.88	8.31
PC-8409	9.77	9.15
PC-8410	10.71	10.03
PC-8411	12.55	11.75
PC-8412	15.76	14.76
PC-8413	19.95	18.69
PC-8414	18.38	17.21
PC-8417	6.62	6.20
PC-8418	5.51	5.16
PC-8419	6.09	5.71
PC-8420	6.93	6.49
PC-8422	11.66	10.92
PCA-1	2.99	2.80
PCA-2	3.52	3.29
PCA-3	6.46	6.05
PCA-4	7.82	7.33
PCT-14	9.45	8.63
PCT-17	8.95	8.17
PCT-54	8.06	7.36
PCT-76	8.69	7.94
PCT-77	7.62	6.96
PM-8418	6.30	5.90
PPC-1	3.47	3.25
PPC-2	3.52	3.29
PPC-3	3.57	3.35
PPC-4	3.94	3.69
PPC-5	4.20	3.94
PPC-6	2.26	2.11
PPC-7	2.21	2.07
PPC-11	3.26	3.05
PPC-12	3.41	3.20
PPC-13	3.52	3.29
PPC-14	3.62	3.39
PPC-15	3.67	3.44
PPC-16	2.47	2.31
PPC-17	2.47	2.31
PPC-21	3.47	3.25
PPC-22	3.52	3.29
PPC-23	3.57	3.35
PPC-24	3.67	3.44
PPC-25	3.78	3.54
PPC-26	2.84	2.66
PPC-27	2.78	2.61
PS-8415	2.89	2.70
PS-8416	3.41	3.20
RC-8200	13.65	12.79
RC-12150	Prices on	Request
RT-201	6.30	5.90
RT-202	$ 8.66	$ 8.11
RT-204	12.08	11.31
RT-206	16.59	15.54
RT-208	21.43	20.07
RT-400	8.93	8.36
RT-401	9.66	9.05
RT-402	13.02	12.20
RT-408	57.76	54.10
RT-2012	34.92	32.70
RT-4012	69.31	64.91
SD-50	9.45	8.85
SD-500	25.21	23.61
SPCT-10	1.47	1.37
TA-1	3.15	2.95
TA-2	2.10	1.96
TA-3	2.26	2.11
TA-4	2.94	2.76
TA-5	3.67	3.44
TA-6	4.20	3.94
TA-7	2.63	2.46
TA-9	3.52	3.29
TA-10	5.25	4.92
TA-11	3.94	3.69
TA-12	2.52	2.36
TA-13	6.56	6.15
TA-18	5.30	4.97
TA-19	2.94	2.76
TA-20	3.78	3.54
TA-21	3.41	3.20
TA-22	3.04	2.85
TA-23	3.67	3.44
TA-24	3.04	2.85
TA-25	3.78	3.54
TA-26	3.26	3.05
TA-27	4.10	3.84
TA-28	3.36	3.14
TA-29	3.04	2.85
TA-30	3.26	3.05
TA-31	3.26	3.05
TA-32	3.47	3.25
TA-33	3.26	3.05
TA-34	2.73	2.55
TA-35	3.15	2.95
TA-36	3.15	2.95
TA-37	4.52	4.23
TA-38	3.04	2.85
TA-39	3.41	3.20
TA-40	3.36	3.14
TA-41	3.26	3.05
TA-42	3.67	3.44
TA-43	3.15	2.95
TA-44	4.62	4.32
TA-45	3.67	3.44
TA-46	3.57	3.35
TA-47	3.62	3.39
TA-52	3.36	3.14
TA-54	3.26	3.05
TA-55	4.62	4.32
TA-56	3.26	3.05
TA-57	3.26	3.05
TA-58	2.57	2.41
TA-59	2.63	2.46
TA-60	4.99	4.67
TA-61	2.52	2.36
TA-62	2.10	1.96
TA-63	4.20	3.94
TAPC-28	4.30	4.03
TAPC-31	Prices on	Request
TAPC-32	3.78	3.54
TAPC-34	Prices on	Request
TAPC-35	3.15	2.95
TAPC-36	3.94	3.69
TAPC-38	3.15	2.95
TAPC-47	3.67	3.44
TAPC-52	3.52	3.29
TAPC-63	3.41	3.20
TC-1	1.47	1.37
TC-2	1.58	1.48
TP-1	6.51	6.10
TP-2	3.41	3.20
TP-3	4.20	3.94
TP-4	7.35	6.89
TP-5	5.25	4.92
TP-6	2.78	2.61
VC-11	Prices on	Request
VC-120-5	Prices on	Request
VC-120-15	Prices on	Request
VC-208-15	Prices on	Request
VC-240-15	Prices on	Request

TELE-DYNAMICS D.C. Power Supplies

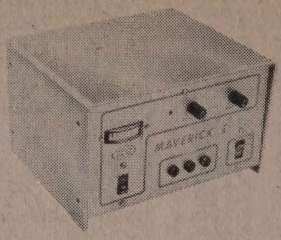
DIVISION OF AMBAC



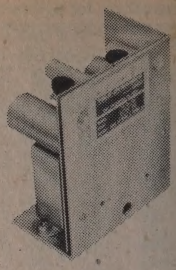
I-OEM



DPS



Maverick I



T12/15

I-OEM SERIES
60 WATT SUPPLIES

AC Input:
105–125 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: 5 to 28 volts, floating.
Current: 6 amps or 60 watts.
Regulation:
Line: ±1%
Load: ±1%
Ripple:
0.1% plus 10 mV rms max.
Overload Protection:
Adjustable foldback current limiting.
Overvoltage Protection:
Optional OVP-3.
Controls:
Output voltage adjust ±5% (±10% with derating in current).
Temperature:
0 to 50° C (to 70° C with derating per table).
Weight:
5.5 lbs.
Size:
6.00″ x 5.00″ x 5.50″

Tele-Dynamics Model I-OEM	Output Volt.	Max. Current Ambient Temp. 50° C	Max. Current Ambient Temp. 70° C	Net Each, Lots of 1-9	10-24	25-49	50-99
5-6	5	6.0 A	3.0 A	$73.00	$69.00	$66.00	$62.00
12-5	12	5.0 A	2.0 A	73.00	69.00	66.00	62.00
15-4	15	4.0 A	2.0 A	73.00	69.00	66.00	62.00
18-3	18	3.3 A	2.0 A	73.00	69.00	66.00	62.00
24-2.5	24	2.5 A	1.7 A	73.00	69.00	66.00	62.00
28-2	28	2.1 A	1.5 A	73.00	69.00	66.00	62.00

DPS SERIES
20 WATT OEM ECONOMY SUPPLIES
UL LISTED RECOGNIZED COMPONENT

AC Input:
DPS-1, -2, -3: 105–125 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DPS-8, -9, -10: 200–240 VAC, 47 to 63 Hz.
DC Output:
5–6, 12–15, and 24 volts, floating.
Regulation:
Line: ±0.25%
Load: ±0.25%
Ripple:
0.3% +10 mV rms max.
Overload Protection:
Adjustable foldback current limiting.
Overvoltage Protection:
Optional OVP-3.
Controls:
Output voltage adjust ±2% nominal (±10% with 20% derating).
Current limit adjustment.
Temperature:
0 to 40° C (Derate current 2%/°C over 40° C).
Weight:
1.9 lbs.
Size:
4.5″ x 4.0″ x 2.38″

Tele-Dynamics Model	DC Output Volts	DC Output Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
115 VAC INPUT						
DPS-1	5/6	3/2.5	$28.00	$26.60	$25.20	$23.80
DPS-2	12/15	1.5/1.2	28.00	26.60	25.20	23.80
DPS-3	24	0.8	28.00	26.60	25.20	23.80
220 VAC INPUT						
DPS-8	5/6	3/2.5	$30.50	$29.50	$27.45	$26.00
DPS-9	12/15	1.5/1.2	30.50	29.50	27.45	26.00
DPS-10	24	0.8	30.50	29.50	27.45	26.00

MAVERICK I DC LAB SUPPLY

AC Input:
105–125 VAC, 47 to 63 Hz.
DC Output:
0 to 7 VDC, floating, at 0 to 5 amps.
Regulation:
Line: ±0.1% or 5 mV rms.
Load: ±0.1% or 5 mV rms.
Ripple:
0.01% or 1 mV rms max.
Overload Protection:
Adjustable current limiting, 20 to 100%.
Internal circuit breaker, 5 amp rating.
Temperature:
0 to 45° C (To 70° C with 2%/°C derating over 45° C).
Weight:
9 lbs.
Size:
8.56″ x 7.56″ x 5.25″

Tele-Dynamics Model	DC Output Volts	DC Output Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
Maverick 1	0-7	0-5	$93.45	$88.80	$84.10	$79.45

III-OEM SERIES
PRECISION REGULATED 60 WATT SUPPLY WITH OVP

AC Input:
105–125/210–250 VAC, 47 to 63 Hz. (Derate 10% at 50 Hz.)
DC Output:
Voltage: 5 to 28 volts, floating.
Current: 5 amps or 60 watts.
Regulation:
Line: ±0.1% or 10 mV.
Load: ±0.1% or 10 mV.
Ripple:
0.01% or 1 mV rms max.
Overload Protection:
Adjustable foldback current limiting.
Overvoltage Protection:
Adjustable crowbar type, set at factory at 120%.
Controls:
Output voltage adjust, ±2%.
Current limit adjust.
Overvoltage adjust.
Temperature:
0 to 50° C. (To 70° C with derating from 50° C.)
Weight:
5.5 lbs.
Size:
6.00″ x 5.50″ x 5.00″

Tele-Dynamics Model	Output Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
III-OEM-5-5	5 V, 5 A	$94.00	$89.30	$84.60	$79.90
III-OEM-12-5	12 V, 5 A	94.00	83.90	84.60	79.90
III-OEM-15-4	15 V, 4 A	94.00	89.30	84.60	79.90
III-OEM-18-3	18 V, 3 A	94.00	89.30	84.60	79.90
III-OEM-24-2.5	24 V, 2.5 A	94.00	89.30	84.60	79.90
III-OEM-28-2	28 V, 2 A	94.00	89.30	84.60	79.90

T12/15 DUAL OUTPUT POWER SUPPLY

AC Input:
105–125 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: 11.7 to 15.3 VDC, continuously adjustable, each output.
Current: 0.75 amps, each output.
Regulation:
Line: ±0.1%
Load: ±0.1%
Ripple:
0.05% rms max.
Overload Protection:
Foldback current limiting.
Temperature:
0 to 50° C.
Weight:
2.5 lbs.
Size:
4.75″ x 4.0″ x 2.4″

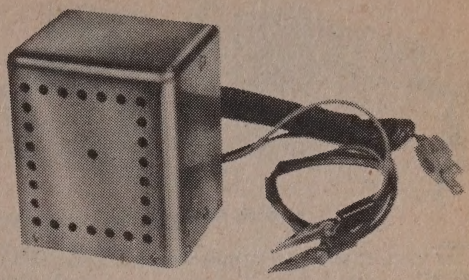
Tele-Dynamics Model	DC Output Each Output Volts	DC Output Each Output Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
T12/15	11.7-15.3	0.75	$56.00	$53.00	$50.00	$48.00

TELE-DYNAMICS D.C. Power Supplies

DIVISION OF AMBAC

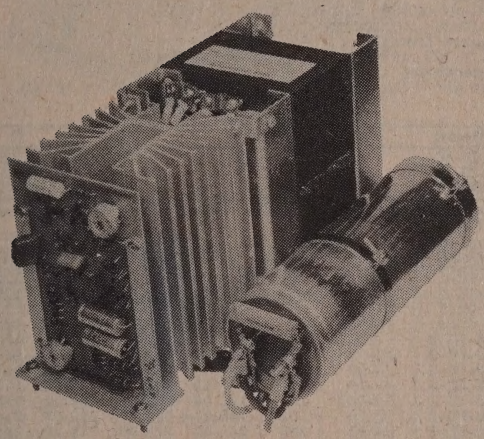
BE-12 BATTERY ELIMINATOR

AC Input:
105–125 VAC, 60 Hz.
DC Output:
Voltage: 13.0 volts, floating.
Current: 1.5 amps.
Regulation:
Line: ±2%
Load: ±6%
Ripple:
0.1% or 12 mV rms max.
Overload Protection:
Foldback current limiting.
Temperature:
0 to 40° C.
Weight:
1.9 lbs.
Size:
3.75″ x 3.50″ x 3.00″



Tele-Dynamics Model	DC Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
BE-12	13.0	1.5	$38.00	$36.00	$34.00	$32.00

BRUTE SERIES
HIGH EFFICIENCY ADJUSTABLE DC POWER SUPPLIES



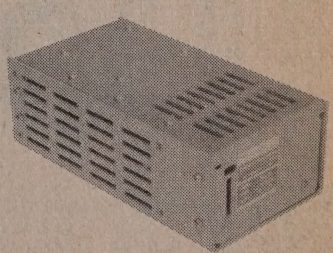
AC Input:
105–130/210–260 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: Adjustable in two ranges, 5–50 or 2–25 volts, (reconnectable).
Current: 6 to 50 amps.
Regulation:
Line: ±0.1% or 50 mV.
Load: ±0.1% or 50 mV.
Ripple:
1% or 500 mV rms max.
Overload Protection:
Adjustable current limiting.
Overvoltage Protection:
Optional OVP-1.
Controls:
Current limit adjust, 0 to 100%.
Output voltage adjust, 10 to 100%.
Ripple adjust.
Temperature:
0 to 55° C with convection cooling.
Weight:
See table.
Size:
See table.

Tele-Dynamics Model	DC Output		Dimensions			Wt. Lbs.
	Volts	Amps	W	D	H	
Brute I	5–50/2–25	6/12	7.65	11	6.75	20
Brute II	5–50/2–25	12/24	7.65	12	6.75	30
Brute III	5–50/2–25	25/50	11.2	14	10	50

Tele-Dynamics Model	Net Each, Lots of			
	1-9	10-24	25-49	50-99
Brute I	$215.00	$204.00	$194.00	$183.00
Brute II	265.00	252.00	239.00	225.00
Brute III	477.00	453.00	429.00	405.00

HR SERIES MODULAR SUPPLIES

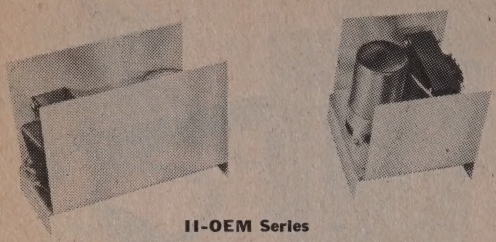
Tele-Dynamics Model	Output Volts Adj. ±5%	Max. Amps at Ambient of				Net Each, Lots of			
		40°C	50°C	60°C	71°C	1-9	10-24	25-49	50-99
CASE SIZE B—3⅜″ x 4 15/16″ x 6½″									
HR5-3.7	5	3.7	3.2	2.5	1.5	$125.00	$119.00	$113.00	$106.00
HR12-2.5	12	2.5	2.3	2.1	1.3	125.00	119.00	113.00	106.00
HR15-2.2	15	2.2	2.0	1.8	1.3	125.00	119.00	113.00	106.00
HR18-2.0	18	2.0	1.8	1.7	1.3	125.00	119.00	113.00	106.00
HR24-1.4	24	1.4	1.3	1.2	1.1	125.00	119.00	113.00	106.00
HR28-1.3	28	1.3	1.2	1.1	1.0	125.00	119.00	113.00	106.00
CASE SIZE C—3⅜″ x 4 15/16″ x 9⅜″									
HR5-5.1	5	5.1	4.3	3.4	2.4	$147.00	$140.00	$132.00	$125.00
HR12-4.0	12	4.0	3.5	2.9	1.9	147.00	140.00	132.00	125.00
HR15-2.5	15	3.5	3.2	2.8	1.9	147.00	140.00	132.00	125.00
HR18-3.2	18	3.2	3.0	2.7	1.9	147.00	140.00	132.00	125.00
HR24-2.5	24	2.5	2.4	2.2	1.5	147.00	140.00	132.00	125.00
HR28-2.3	28	2.3	2.4	2.2	1.5	147.00	140.00	132.00	125.00
CASE SIZE CC—4 15/16″ x 4 15/16″ x 9⅜″									
HR5-10.5	5	10.5	9.0	8.0	5.5	$169.00	$161.00	$152.00	$144.00
HR12-7.3	12	7.3	6.8	5.9	4.7	169.00	161.00	152.00	144.00
HR15-6.0	15	6.0	5.6	5.1	4.3	169.00	161.00	152.00	144.00
HR18-5.5	18	5.5	5.1	4.6	4.0	169.00	161.00	152.00	144.00
HR24-4.0	24	4.0	3.7	3.4	3.0	169.00	161.00	152.00	144.00
HR28-3.5	28	3.5	3.4	3.1	2.8	169.00	161.00	152.00	144.00
CASE SIZE D—4 15/16″ x 7½″ x 9⅜″									
HR5-12.6	5	12.6	10.8	9.2	6.1	$199.00	$189.00	$179.00	$169.00
HR12-10.0	12	10.0	9.2	8.3	5.7	199.00	189.00	179.00	169.00
HR15-9.0	15	9.0	8.4	7.9	5.3	199.00	189.00	179.00	169.00
HR18-7.9	18	7.9	7.4	6.9	5.2	199.00	189.00	179.00	169.00
HR24-6.7	24	6.7	6.3	5.8	4.8	199.00	189.00	179.00	169.00
HR28-6.0	28	6.0	5.6	5.2	4.7	199.00	189.00	179.00	169.00
CASE SIZE E—4 15/16″ x 7½″ x 11⅜″									
HR5-20.0	5	20.0	18.0	16.4	10.0	$256.00	$243.00	$230.00	$218.00
HR12-15.0	12	15.0	13.8	12.3	9.5	256.00	243.00	230.00	218.00
HR15-14.0	15	14.0	12.7	11.5	9.5	256.00	243.00	230.00	218.00
HR18-13.0	18	13.0	11.8	10.6	9.2	256.00	243.00	230.00	218.00
HR24-11.0	24	11.0	10.0	9.0	7.6	256.00	243.00	230.00	218.00
HR28-10.0	28	10.0	9.0	8.0	7.1	256.00	243.00	230.00	218.00



HR Series

AC Input:
105–125/210–250 VAC, 57 to 63 Hz. (Derate output 10% at 50 Hz.)
Regulation:
Line: ±0.05%
Load: ±0.05%
Ripple:
1 mV rms.
Overload Protection:
Current cutback.
Short-circuit protection.
Overvoltage Protection:
Optional OVP.
Temperature:
0 to 71° C. (With derating in table.)
Features:
Remote sensing.
Remote programming.

II-OEM SERIES
30, 60, 120 WATT MODELS

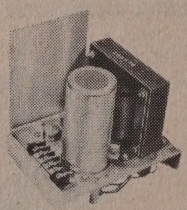


II-OEM Series

AC Input:
105–125 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: Adjustable from 3.6 to 60 volts in four ranges, floating.
Power: 30, 60, and 120 watt models.
Regulation:
Line: ±1%
Load: ±1%
Ripple:
0.1% + 10 mV rms max.
Controls:
Output voltage adjust.
Temperature:
0 to 45° C (To 65° C with 2%/°C derating above 45° C.)
Weight:
30-OEM, 5 lbs; 60-OEM, 7 lbs; 120-OEM, 12 lbs.
Size:
30-OEM, 5″ x 5″ x 5″; 60-OEM, 5.38″ x 5.0″ x 7.0″; 120-OEM, 5″ x 7″ x 10″

Tele-Dynamics Model	Output Volts Range	Output Power Max.	Net Each, Lots of 1-9	10-24	25-49	50-99
30 WATTS OR 2.5 AMPS MAX.						
30-OEM-1	3.6-9.0		$61.00	$58.00	$55.00	$52.00
30-OEM-2	9.0-17.0		61.00	58.00	55.00	52.00
30-OEM-3	17.0-30.0		61.00	58.00	55.00	52.00
30-OEM-4	30.0-60.0		61.00	58.00	55.00	52.00
60 WATTS OR 5 AMPS MAX.						
60-OEM-1	3.6-9.0		$69.00	$66.00	$62.00	$59.00
60-OEM-2	9.0-17.0		69.00	66.00	62.00	59.00
60-OEM-3	17.0-30.0		69.00	66.00	62.00	59.00
60-OEM-4	30.0-60.0		80.00	76.00	72.00	68.00
120 WATTS OR 10 AMPS MAX.						
120-OEM-1	3.6-9.0		$113.00	$107.00	$102.00	$96.00
120-OEM-2	9.0-17.0		113.00	107.00	102.00	96.00
120-OEM-3	17.0-30.0		113.00	107.00	102.00	96.00
120-OEM-4	30.0-60.0		113.00	107.00	102.00	96.00

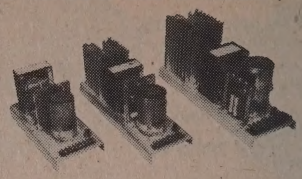
C656 DC SUPPLY
COMPACT, HIGH POWER



AC Input:
105–125/210–250 VAC, 47 to 63 Hz. (Derate output current 10% at 50 Hz.)
DC Output:
Voltage: 5 volts, floating.
Current: 8 Amps.
Regulation:
Line: ±1%
Load: ±1%
Ripple:
0.1% + 10 mV rms max.
Overload Protection:
Foldback current limiting.
Overvoltage Protection:
Optional OVP-3.
Controls:
Output voltage adjust, ±5% (±10% with current derated).
Temperature:
0 to 50° C.
Weight:
5.5 lbs.
Size:
6.12″ x 6.00″ x 5.00″

Tele-Dynamics Model	Output Volts	Output Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
C656	5.0	8.0	$81.00	$77.00	$73.00	$69.00

IC SERIES
FOR MOSFETS AND OP-AMPS



AC Input:
100–130 VAC, 47 to 63 Hz (Derate 10% at 50 Hz).
DC Output:
Voltage: 3.6 to 60 volts, floating.
Current: To 25 Amps.
Regulation:
Line: ±0.1% or 10 mV.
Load: ±0.1% or 10 mV.
Ripple:
5 mV rms max.
Overload Protection:
Adjustable foldback current limiting.
Overvoltage Protection:
Optional OVP crowbar.
Line Fuse:
Internally fused at 2.5, 5, or 10 amps slow blow.
Controls:
Output voltage adjust, ±5%.
Current limit adjust.
Response Time:
50 to 100 microseconds (varies with model).
Temperature:
0 to 45° C (to 70° C with 2%/°C derating above 45° C).

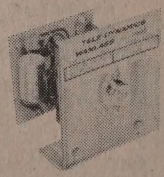
PHYSICAL SPECIFICATIONS

Model	Weight	W	D	H
60-IC	9	5.75″	11.50″	5.22″
120-IC	14	6.75″	15.50″	5.22″
200-IC	19	8.00″	17.00″	6.22″

Tele-Dynamics Model	Output Volts	Output Watts	Net Each, Lots of 1-9	10-24	25-49	50-99
60-IC-1	3.6-6.3	7.5A	$144.00	$137.00	$130.00	$122.00
60-IC-2	12-18	60	144.00	137.00	130.00	122.00
60-IC-3	24-36	60	144.00	137.00	130.00	122.00
60-IC-4	48-60	60	144.00	137.00	130.00	122.00
120-IC-1	3.6-6.3	15A	179.00	170.00	161.00	152.00
120-IC-2	12-18	120	195.00	185.00	176.00	166.00
120-IC-3	24-36	120	195.00	185.00	176.00	166.00
120-IC-4	48-60	120	195.00	185.00	176.00	166.00
200-IC-1	3.6-6.3	25A	183.00	174.00	165.00	156.00
200-IC-2	12-18	200	240.00	228.00	216.00	204.00
200-IC-3	24-36	200	240.00	228.00	216.00	204.00
200-IC-4	48-60	200	240.00	228.00	216.00	204.00

Tele-Dynamics Model 1A/2A—Crowbar overvoltage protection option for XXX-IC-1 units only. Net Each, Lots of 1–9. **$26.00** 10–24..... **$25.00**; 25–49..... **$23.00**; 50–99..... **22.00**

DPS4 DC SUPPLY
REGULATED 200V FOR NIXIE TUBES



AC Input:
105–125 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: 200 volts nominal, ±20 volts factory tolerance.
Current:
100 mA.
Regulation:
Line: ±2%
Load: ±12%
Ripple:
2% rms max.
Power Factor:
(+0.7 to −0.7) ±1%
Response Time:
10 to 50 microseconds.
Controls:
Output voltage adjust, ±2%
Temperature:
0 to 50° C (derate 2%/°C above 50° C).
Weight:
1.6 lbs.
Size:
4.50″ x 4.00″ x 3.37″

Tele-Dynamics Model	Output Volts	Output mA	Net Each, Lots of 1-9	10-24	25-49	50-99
DPS4	200	100	$42.00	$40.00	$38.00	$36.00

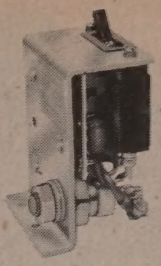
TELE-DYNAMICS

DIVISION OF AMBAC

D.C. POWER SUPPLIES AND OVERVOLTAGE PROTECTORS

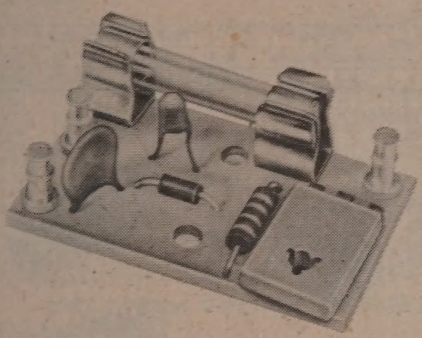
OVP-1 OVERVOLTAGE PROTECTION DEVICE

DC Current Range:
0.5 to 50 amps DC (200 amps peak with 8 millisecond surge.)
Shutdown Time:
Protects power supply and line in 10 milliseconds (typical).
Response Time:
Protects load in 2 microseconds when wired for DC break, local-sense operation.
DV Voltage Range:
3.6 to 50 V.
Trip Voltage Range:
Adjustable 6.5 to 60 VDC.
Circuit Breaker Ratings:
DC Line: 50 amps at 50 volts.
AC Line: 50 amps at 250 volts.



Tele-Dynamics Model OVP-1, Overvoltage protection device.
Net Each, Lots of 1–9 ..... **$60.00**; 10–24 ..... **$57.00**
Lots of ..... 25–49 ..... **54.00**; 50–99 ..... **51.00**

OVP-3 OVERVOLTAGE PROTECTION DEVICE



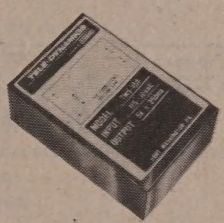
Trip Voltage Range:
Listed in table, ±5%
Response Time:
Protects load in 2 microseconds.
Shutdown Time:
Protects power supply and line in 10 milliseconds.

Tele-Dynamics Model	Trip Voltage Range	Power Supply Model	Application Rating
OVP-3-53	5.5–6.8	DPS-1, -8(5 V)	5 V, 3 A
OVP-3-56	5.5–6.8	I-OEM-5-6	5 V, 6 A
OVP-3-62	6.6–8.0	DPS-1, -8(6 V)	6 V, 2.5 A
OVP-3-122	12.8–15.2	DPS-2, -9	12 V, 1.5 A
OVP-3-125	12.8–15.2	I-OEM-12-5	12 V, 5 A
OVP-3-152	15.7–18.3	DPS-2, -9	15 V, 1.2 A
OVP-3-154	15.7–18.3	I-OEM-15-4	15 V, 4 A
OVP-3-183	19.5–22.5	I-OEM-18-3	18 V, 3 A
OVP-3-241	26.0–30.0	DPS-3, -10	24 V, 1 A
OVP-3-242	26.0–30.0	I-OEM-24-2.5	24 V, 2.5 A
OVP-3-282	29.0–33.0	I-OEM-28-2	28 V, 2.1 A

Tele-Dynamics Series OVP, Any Model—Net Each,
Lots of 1–9 ..... **$9.45**; 10–24 ..... **$9.00**
Lots of 25–49 ..... **8.50**; 50–99 ..... **8.05**

TW/CT SERIES MINIATURE ENCAPSULATED SUPPLIES

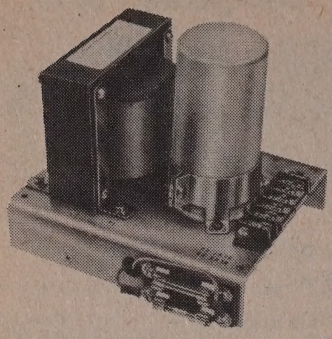
AC Input:
105–125 VAC, 50 to 400 Hz. (Add **$5.00** to unit price for 230 VAC input.)
DC Output:
Voltage: 3.6 to 28 volts, both single and dual outputs. Adjustable ±2%
Current: 25 to 2000 milliamperes.
Regulation:
See table.
Ripple:
See table.
Overvoltage Protection:
Crowbar protection on some models.
Temperature:
−25° C to +70° C without derating.
Size:
See table.



Tele-Dynamics Model	Description	DC Output Volts	DC Output mA	Regulation Line %	Regulation Load %	Ripple mV, rms	Size, Inches	Net Each, Lots of 1-24	Net Each, Lots of 25-49	Net Each, Lots of 50-99
TW5-250	Single	5.0	250	0.02	0.04	1.0	2.00 x 3.00 x 1.00	$35.00	$31.50	$29.75
TW5-500*	Output	5.0	500	0.02	0.04	1.0	2.50 x 3.50 x 0.88	44.00	39.60	37.40
TW5-1000*	Logic	5.0	1000	0.02	0.04	1.0	2.50 x 3.50 x 1.25	65.00	58.50	55.25
TW5-2000	Supplies	5.0	2000	0.02	0.05	1.0	2.50 x 3.50 x 1.62	89.00	80.10	75.65
TW3.5-250		3.6	250	0.05	0.05	0.5	2.00 x 3.00 x 1.00	38.00	34.20	32.30
TW6-200		6.0	200	0.05	0.05	0.5	2.00 x 3.00 x 1.00	38.00	34.20	32.30
TW10-120	Single	10.0	120	0.02	0.02	0.5	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TE12-120	Output	12.0	120	0.02	0.02	0.5	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TW15-100	General	15.0	100	0.02	0.02	0.5	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TW18-65	Purpose	18.0	65	0.02	0.02	1.0	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TW20-60	Supplies	20.0	60	0.02	0.02	1.0	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TW24-50		24.0	50	0.02	0.02	1.0	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TW28-40		28.0	40	0.02	0.02	1.0	1.75 x 2.25 x 1.00	25.00	22.50	21.25
TWD12-120		±12.0	120	0.02	0.02	0.5	2.50 x 3.50 x 0.88	49.00	44.10	41.65
TWD12-240		±12.0	240	0.02	0.02	0.5	2.50 x 3.50 x 1.25	73.00	65.70	62.05
TWD12-400		±12.0	400	0.02	0.02	0.5	2.50 x 3.50 x 1.62	92.00	82.80	78.20
TWD15-25	Dual	±15.0	25	0.2	0.2	2.0	2.50 x 3.50 x 0.88	34.00	31.60	28.90
TWD15-65	Output	±15.0	65	0.02	0.02	0.5	2.50 x 3.50 x 0.88	37.00	33.30	31.45
TWD15-100	OP Amp	±15.0	100	0.02	0.02	0.5	2.50 x 3.50 x 0.88	48.00	43.20	40.80
TWD15-200	Supplies	±15.0	200	0.02	0.02	0.5	2.50 x 3.50 x 1.25	73.00	65.70	62.05
TWD15-350		±15.0	350	0.02	0.02	0.5	2.50 x 3.50 x 1.62	92.00	82.80	78.20
TWD24-50		±24.0	50	0.02	0.02	0.5	2.50 x 3.50 x 0.88	49.00	44.10	41.75
TWD26-45		±26.0	45	0.02	0.05	1.0	2.50 x 3.50 x 1.25	49.00	44.10	41.75
TWT15S-1	A/D & D/A Converter Supplies	±15	100	0.02	0.03	1.0	2.50 x 3.50 x 1.25	89.00	80.10	75.65
		5.0	250	0.05	0.05	1.0				
TWT15S-2		±15	100	0.02	0.03	1.0	2.50 x 3.50 x 1.88	109.00	98.10	92.65
		5.0	500	0.02	0.06	1.0				
CT5-500*	Logic Supplies	5.0	500	0.05	0.1	2.0	2.70 x 4.00 x 1.44	52.00	46.80	44.20
CT5-1000*		5.0	1000	0.05	0.15	2.0	2.70 x 4.00 x 1.44	74.00	66.60	62.90
CT5-2000		5.0	2000	0.05	0.15	2.0	2.70 x 4.00 x 1.44	99.00	89.10	84.15
CTD12-120		±12	120	0.05	0.05	1.0	2.70 x 4.00 x 1.44	59.00	53.10	50.15
CTD12-240		±12	240	0.05	0.05	1.0	2.70 x 4.00 x 1.44	78.00	70.20	66.30
CTD12-400	Dual	±12	400	0.05	0.05	1.0	2.70 x 4.00 x 1.44	99.00	89.10	84.15
CTD15-100	Output	±15	100	0.05	0.05	1.0	2.70 x 4.00 x 1.44	55.00	49.50	46.75
CTD15-200	OP Amp	±15	200	0.05	0.05	1.0	2.70 x 4.00 x 1.44	78.00	70.20	66.30
CTD15-350	Supplies	±15	350	0.05	0.05	1.0	2.70 x 4.00 x 1.44	99.00	89.10	84.15
CTD15-500		±15	500	0.05	0.05	1.0	2.70 x 4.00 x 1.44	120.00	108.00	102.00

*With overvoltage crowbar protection, factory adjusted to trip at 6.2 volts, nominal.

C214 POWER SUPPLY FOR RELAYS AND INDUCTIVE LOADS

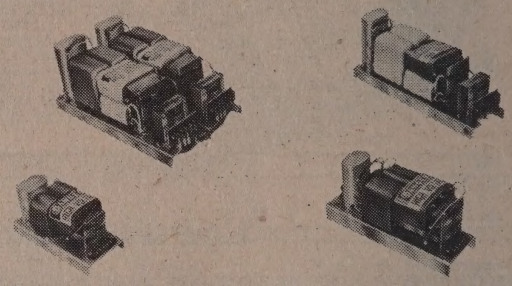


AC Input:
105–125/210–250 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output
Voltage: 26 ±2 volts, floating.
Current: 2.5 amps. (Designed for pulsed loading of up to 4 amps when operated with 1 amp continuous load pulsed at 20 msec intervals.)
Regulation:
Line: ±2%
Load: ±2%
Ripple:
0.1% plus 10 mV rms max.
Overload Protection:
Line: 2 amp fuse.
Load: 3 amp, slow blow fuse.
Temperature:
0 to 40° C (to 70° C with 2%/°C derating above 40° C).
Weight:
5.5 lbs.
Size:
6.00″ x 5.50″ x 5.00″

Tele-Dynamics Model	Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
C214	26	2.5	$61.00	$58.00	$55.00	$52.00

PEC SERIES LINE CONDITIONERS
50dB TRANSIENT ATTENUATION

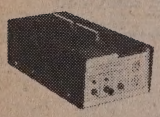
AC Input:
105–125 VAC, 60 Hz.
AC Output:
Voltage: 117 VAC, 60 Hz.
Power: 60 to 1000 VA.
Regulation:
Line: ±1%
Load: ±2%
Response Time:
Instantaneous.
Protection:
Inherent overload and short circuit protection.
Temperature:
0 to 55° C.
Controls:
Start pushbutton on some models.
Weight:
See table.
Size:
See table.



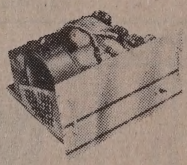
Tele-Dynamics Model	Weight Lbs.	Dimensions		
		H.	W.	D.
PEC60	9	4.25	9.00	4.00
PEC150	21	6.00	12.00	4.00
PEC500	50	7.50	17.00	5.00
PEC1000	90	7.50	17.00	10.25

Tele-Dynamics Model	Power VA	Fuse Amps	Net Each, Lots of			
			1-9	10-24	25-49	50-99
PEC60	60	2	$115.00	$109.00	$103.00	$ 98.00
PEC150	150	5	183.00	174.00	165.00	156.00
PEC500	500	10	272.00	258.00	245.00	231.00
PEC1000	1000	20	520.00	494.00	468.00	442.00

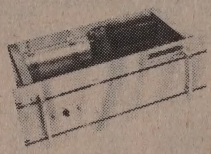
P1400 SERIES LINE CONDITIONERS
ATTENUATE NOISE; FILTER 50dB TO 1 MHz



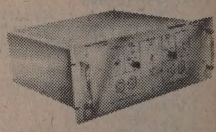
Model P1405Q



Model P1405RPA



Model P1425



Model PD1410

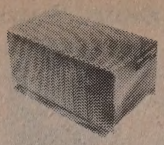
AC Input:
105–125/210–250/420–500 VAC, 60 Hz, according to model.
AC Output:
116/118/236/472 VAC, 60 Hz, according to model.
Regulation:
Line: ±1% for 10% line change.
Load: ±1.5% for 10% to full load changes.
Response Time:
Instantaneous.
Power Efficiency:
65%
Protection:
Inherent overload, overvoltage, undervoltage and short circuit.
Noise Attenuation:
50 dB filtering to 1 MHz.
Phase Shift:
90°
Temperature:
0 to 55° C.

Tele-Dynamics Model	Input				Wt.	Dimensions			Output		Net Each
	Volts	Amps Start	Amps Run	Rec. Brkr		W. x H. x D.			Volts	VA	
P1405Q	105–126	22	12	20	50	8.6	6.6	17.1	116 ±3	500	$325.00
P1405RPA	105–125	22	12	20	50	19.0	7.0	8.5	116 ±3	500	350.00
P1410	105–125	22/34	12/24	35	97	19.0	7.0	16.8	116 ±3	500/1000	550.00
P1425-1	105–125	80	60	70	150	19.0	10.5	18.5	118 ±2	2500	750.00
P1425-2	105–125	80	60	70	150	19.0	10.5	18.5	236 ±4	2500	750.00
P1425-3	105–125	80	60	70	150	19.0	10.5	18.5	472 ±8	2500	750.00
P1425-4	210–250	40	30	50	150	19.0	10.5	18.5	118 ±2	2500	750.00
P1425-5	210–250	40	30	50	150	19.0	10.5	18.5	236 ±4	2500	750.00
P1425-6	210–250	40	30	50	150	19.0	10.5	18.5	472 ±8	2500	750.00
P1425-7	420–500	20	15	30	150	19.0	10.5	18.5	118 ±2	2500	750.00
P1425-8	420–500	20	15	30	150	19.0	10.5	18.5	236 ±4	2500	750.00
P1425-9	420–500	20	15	30	150	19.0	10.5	18.5	472 ±8	2500	750.00
P1450-1	105–125	160	120	150	320	19.0	21.0	18.5	118 ±2	5000	1500.00
P1450-2	105–125	160	120	150	320	19.0	21.0	18.5	236 ±4	5000	1500.00
P1450-3	105–125	160	120	150	320	19.0	21.0	18.5	472 ±8	5000	1500.00
P1450-4	210–250	80	60	75	320	19.0	21.0	18.5	118 ±2	5000	1500.00
P1450-5	210–250	80	60	75	320	19.0	21.0	18.5	236 ±4	5000	1500.00
P1450-6	210–250	80	60	75	320	19.0	21.0	18.5	472 ±8	5000	1500.00
P1450-7	420–500	40	30	35	320	19.0	21.0	18.5	118 ±2	5000	1500.00
P1450-8	420–500	40	30	35	320	19.0	21.0	18.5	236 ±4	5000	1500.00
P1450-9	420–500	40	30	35	320	19.0	21.0	18.5	472 ±8	5000	1500.00

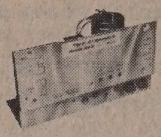
VARAX® LR SERIES AC LINE REGULATOR
INSENSITIVE TO LINE FREQUENCY CHANGES

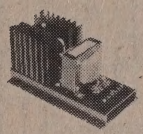
AC Input:
85–115/95–125/190–250 VAC, 50 or 60 Hz, according to model.
AC Output:
100/115/220/230 VAC, 50 or 60 Hz, according to model.
Output Power:
500 to 5000 VA according to model.
Regulation:
Line: ±1%
Load: ±1%
Response Time:
50 msec.
Power Efficiency:
Over 90%.
Distortion:
Less than 5%.
Controls:
Output voltage adjust ±3%.
Temperature:
0 to 55° C.

Tele-Dynamics Model	Voltage Input	Voltage Output	Hz	Wt. Lbs.	Net Each, Lots of 1-9	10-24	25-49	50-99
LR-501	95-125	115	60	31	$194.00	$184.00	$175.00	$165.00
LR-502	85-115	100	50	31	194.00	184.00	175.00	165.00
LR-503	180-250	230	60	31	194.00	184.00	175.00	165.00
LR-504	180-250	220	50	31	194.00	184.00	175.00	165.00
LR-1501	95-125	115	60	49	321.00	305.00	289.00	273.00
LR-1502	85-115	100	50	49	321.00	305.00	289.00	273.00
LR-1503	180-250	230	60	49	321.00	305.00	289.00	273.00
LR-1504	180-250	220	50	49	321.00	305.00	289.00	273.00
LR-5001	95-125	115	60	170	955.00	.....	.....	.....
LR-5002	85-115	100	50	170	955.00	.....	.....	.....
LR-5003	180-250	230	60	170	955.00	.....	.....	.....
LR-5004	180-250	220	50	170	955.00	.....	.....	.....


LR Series

Model CVR-120


Model III-OEM-5-10


C3000 Series

Model C474

CVR-120 AC VOLTAGE REGULATOR

AC Input:
110–130 VAC, 47 to 420 Hz.
AC Output:
Voltage: 135 volts peak ±10% (270 volts peak to peak).
Power: 120 VA.
Regulation:
Line: ±1% for 10% line variations.
Load: ±1%
Response Time:
10–50 microseconds.
Efficiency:
75% at nominal line voltage and full load.
Controls:
Output voltage adjust ±10%.
Phase Shift:
None
Temperature:
0 to 40° C (to 70° C with 2%/°C derating above 40° C).
Weight:
10 oz.
Size:
4.50″ x 4.00″ x 1.62″

Tele-Dynamics Model CVR-120 Regulator—Net Each, Lots of 1–9..... **$27.85**; 10–24..... **$26.45**
Lots of 25–49..... **25.05**; 50–99..... **23.65**

C3000 SERIES AC LINE REGULATOR
MODELS FROM 30 TO 1000 VA

CA Input:
100–125 VAC, 47 to 420 Hz.
AC Output:
Voltage: 117 volts adjustable ±3%.
Power: 30 to 100 VA
Regulation:
Line: ±0.5% (10% line change).
Load: ±0.5% (10% to full load).
Response Time:
10–50 microseconds.
Efficiency:
75% nominal, full load.
Protection:
Internally fused.
Controls:
Output voltage adjust ±3%.
Temperature:
−20° to +50° C.

Tele-Dynamics Model	Weight Lbs.	Dimensions (In.) W. x D. x H.
C3003	1.5	4.00 x 3.00 x 2.87
C3006	2.5	4.15 x 3.00 x 4.00
C3012	3.2	4.15 x 3.00 x 4.50
C3025	6.5	6.12 x 9.50 x 5.00
C3050	10.25	6.12 x 10.88 x 7.25
C3100	17.5	6.12 x 16.00 x 7.25

Tele-Dynamics Model	Power VA	Fuse Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
C3003	30	0.4	$53.00	$50.00	$48.00	$45.00
C3006	60	0.8	53.00	50.00	48.00	45.00
C3012	120	1.5	67.00	64.00	60.00	57.00
C3025	250	3.0	103.00	98.00	93.00	88.00
C3050	500	6.0	157.00	149.00	141.00	133.00
C3100	1000	12.0	242.00	230.00	218.00	206.00

VARAX C474 AC LINE REGULATOR

AC Input:
105–130 VAC, 47 to 63 Hz.
AC Output:
Voltage: 120 VAC, adjustable ±3%.
Power: 2000 VA.
Regulation:
Line: ±1%
Load: ±1.5% (25% to full load).
Response Time:
50 milliseconds.
Efficiency:
Up to 90% at full load.
Controls:
Output voltage adjust ±3%.
Phase Shift:
Varies with load.
Temperature:
0 to 55° C.
Weight:
38 lbs.
Size:
9.31″ x 9.12″ x 5.0″

Tele-Dynamics Model	Net Each, Lots of 1-9	10-24	25-49	50-99
C474	$105.00	$ 99.00	$ 94.00	$ 89.00
C474UL	121.00	115.00	110.00	103.00

Tele-Dynamics Model BI-1500 Ballast Inductor. For use with resistive loads—Net Each..... **$26.25**

III-OEM-5-10 PRECISION REGULATED POWER SUPPLY

AC Input:
115/230 VAC, 47 to 63 Hz. (Derate output 10% at 50 Hz.)
DC Output:
Voltage: 5 volts, floating
Current: 10 amps.
Regulation:
Line: ±0.1% or 10 mV.
Load: ±0.1% or 10 mV.
Ripple:
0.01% or 1 mV rms max.
Overload Protection:
Adjustable foldback current limiting.
Overvoltage Protection:
Adjustable crowbar, factory set at 120%.
Controls:
Output voltage adjust.
Current limit adjust.
Overvoltage adjust.
Temperature:
0 to 50° C (to 70° C with 2%/°C derating above 50° C).
Weight:
14.5 lbs.
Size:
12.00″ x 6.50″ x 5.00″

Tele-Dynamics Model	Output Volts	Output Amps	Net Each, Lots of 1-9	10-24	25-49	50-99
III-OEM-5-10	5.0	10	$144.40	$137.15	$129.95	$122.75

Miniature Transformers

AUDIO, POWER AND TRANSISTOR TRANSFORMERS

Type EE

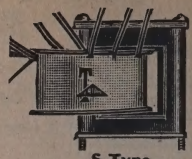
SP

JAF

JO

X

JZ


S Type

TOROIDAL TRANSISTOR POWER SUPPLY TRANSFORMERS

Epoxy molded, DC to DC. Exceed MIL-T-27B Grade 5, Class R specs. Case type EE except open types case S.

Triad No.	Input, Volts	Output V*	Output mA	Size, Inches Dia.	Size, Inches Height	Wt., Lbs.	Net Each*
TY-68S†	12	250	65	§	1¾	.2	$ 7.53
TY-69S†	12	300	100	#	1⅞	.5	11.12
TY-70S†	12	325	150	•	2	.6	9.22
TY-71S†	12	375	200	•	2	.65	9.97
TY-74S†	12	600	200	‡	2	1.07	14.38
TY-78	12.6	250	100	1¾	11/16	.35	17.55
TY-79	12.6	300	200	1¾	1	.35	19.48
TY-80	12.6	325	150	1¾	1	.35	17.53
TY-81	12.6	375	200	2	1	.50	16.92
TY-82	12.6	450	150	2	1	.50	17.52
TY-83	12.6	500	250	2¾	1⅜	.85	28.15
TY-84	12.6	600	200	2¾	1⅜	1.00	27.15
TY-85	12.6	600	350	2⅞	1⅞	2.00	29.00
TY-86	12.6	425	350	2¾	1⅜	1.00	28.83
TY-88	28	250	80	1 5/16	9/16	.25	15.92
TY-89	28	300	100	1¾	11/16	.35	16.88
TY-90	28	325	200	1¾	1	.35	18.97
TY-91	28	375	200	2	1	.50	18.97
TY-92	28	450	200	2	1	.50	19.25
TY-93	28	500	250	2¾	1⅜	.85	28.90
TY-94	28	600	200	2¾	1⅜	1.00	25.28
TY-99	6	300	100	1¾	1	.35	16.95
TY-100	6	325	150	2	1	.50	27.95
TY-101	6	375	200	2¾	1⅜	1.00	22.62
TY-102	6	450	150	2¾	1⅜	1.00	23.08

*F.W. bridge. †Open frame type. ‡4 1/16" w. x 3" d. §1¾" w. x 1 1/32" d. #2⅜" w. x 1⅞" d. •2⅜" w. x 2 1/16" d.

DC TO AC TRANSISTOR TRANSFORMERS

Open and vertical shielded types. Secondary, 110–115–125 volts.

Triad No.	DC Pri.	Secondary W	Secondary Hz	Case	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each*
TY-468	28	60	400	L	1⅞ x 2¼ x 2	½	$14.48
TY-462	12	60	400	L	1⅞ x 2¼ x 2	½	20.37
TY-75A	12	115	60	A	3⅞ x 3 1/32 x 3½	5	21.62
TY-76A	12	60	60	A	3 5/32 x 2 11/32 x 2⅝	3	14.25

"RED SPEC" TRANSISTOR TRANSFORMERS

Size: 0.31" x 0.41" x 0.465" h. Weight, 1/10 oz.

Triad No.	Application	Impedance, Ohms Primary*	Impedance, Ohms Secondary	Net Each*
SP-4	Input	200000 CT	1000 CT	$11.68
SP-5	Input	50000 CT	1000 CT	11.08
SP-7	Input	200000	1000	10.60
SP-11	Interstage	25000/200000	1000/800	9.22
SP-13	Interstage	25000/20000 CT	1000/800 CT	10.10
SP-15	Interstage	10000 CT	1500 CT	10.00
SP-20	Driver	10000 CT	1200 CT	9.72
SP-21	Driver	10000 CT	2000 CT	9.77
SP-22	Driver	10000	2000 CT/500§	10.13
SP-29	Driver	10000 CT	500 CT	9.45
SP-32	Output	500	50	7.67
SP-33	Output	1000	50	7.92
SP-34	Output	600	3.2	7.30
SP-35	Output	1200	3.2	7.42
SP-42	Output	150 CT	12	8.13
SP-47	Output	1500 CT	12	8.58
SP-48	Output	7500 CT	12	8.68
SP-49	Output	300 CT	600	8.35
SP-50	Output	500 CT	600	8.50
SP-51	Output	900 CT	600	8.55
SP-52	Output	1500 CT	600	8.90
SP-64	Output	1600 CT	3.2	8.12
SP-65	Output	8000 CT	3.2	8.37
SP-66	Output#	10000 CT	10000 CT	9.48
SP-67	Output#	600 CT	600 CT	8.43
SP-68	Output#	10000	10000 CT/2500§	9.93
SP-69	Output#	600	600 CT/150§	9.48
SP-70	Output#	600	600	7.77
SP-106	Choke	6 H at 2 mA	.....	7.90
SP-107	Choke	1.25 H at 2 mA	.....	6.72
SP-108	Choke	3.5 H at 2 mA	.....	6.97
SP-117	Choke	.9 H at 2 mA	.....	7.03
SP-118	Choke	.3 H at 4 mA	.....	6.73
SP-128	Choke	.1 H at 5 mA	.....	6.63
SP-310	Magnetic Shielding Case			1.23

*mA ratings are DC. §Split secondary. #Isolation.

TRANSCEIVER TRANSFORMER, VOICE FREQUENCY

Triad No.	Application	Pri. Ohms	Sec. Ohms	Size, Inches H. x W. x D.	Net Each*
A-21X	Mike or plate to grid	100 10000	100000	1 1/16 x 2 1/16 x 1¼	$4.45

OUTPUT AND DRIVER TRANSISTOR TRANSFORMERS

Triad No.	Impedance, Ohms Primary*	Impedance, Ohms Secondary	Output, Watts	Net Each*
TY-20Z	100 CT (500 mA bal)	16/8/4	10	$ 5.60
TY-29X	24 CT (500 mA bal)	8/4	8	6.03
TY-31X	200 CT (50 mA bal)	8/4	2	4.23
TY-48X	100 CT (40 mA)	16/8/4	.5	5.13
TY-30X	100 CT (100 mA bal)	8/4	2	4.45
TY-53X	200 CT (10 mA)	400 CT	.6	4.85
TY-61X	100 (100 mA)	100 CT	.5	4.18
TY-63X	48 CT (275 mA bal)	16/8	5	6.08
TY-64X	32 CT (575 mA bal)	16/8/4	10	6.50
TY-65Z	32 CT (575 mA bal)	6K/4K/3K	10	5.60
TY-66A	6 CT (5 A DC)	6K/4K/3K	40	11.03
TY-67A	6 CT (5 A DC)	16/8/4	40	13.60

MIDGET AUDIOS—HERMETICALLY SEALED

All units have 45 dB shielding. Std. threaded stud mounting plus optional bracket (1¼" mtg.). Conform to MIL specs.

Triad No.	Impedance, Ohms Primary*	Impedance, Ohms Secondary	Frequency Response, Hz‡	Net Each*
JO-1§■	600/250/50	50000	60–15000	$17.17
JO-3§	600/250/50	60000 CT	60–15000	17.03
JO-5§■	30/12/4	50000	50–12000	17.03
JO-11	15000	60000	50–15000†	17.03
JO-13	15000*	95000 CT	300–7000†	17.03
JO-21	15000	600/250/50	50–15000†	17.03
JO-22	15000*	600/250/50	300–7000†	17.08
JO-23	20000 CT	600/250/50	50–15000†	17.03
JO-31■	600/250/50	600/250/50	50–15000†	17.03
JO-101	50 H at 2 mA coupling reactor			17.03

MINIATURE "TRIJETS" AUDIOS

Open frame construction, 1 7/32" w. x ¾" d. x ⅝" h. except T-32X, T-34X, T-41X and T-42X, 1 3/32" w. x 1 1/16" d. x ⅝" h.

T-1X■#	600/250/50	50000	60–15000	$6.42
T-2X■	600/250/50	250000	100–15000	6.17
T-3X	600/250/50	60000 CT	60–15000	6.32
T-5X■	30/12/4	50000	50–15000	5.78
T-11X	15000	50000	60–15000†	4.93
T-12X	15000	60000 CT	60–15000†	6.15
T-13X	15000*	95000 CT	350–7000†	5.75
T-14X■	200	500000	300–3000†	4.65
T-20X#	15000	600/250/50	60–15000†	5.22
T-21X	30000	50	100–15000†	4.83
T-22X	15000*	600/250/50	350–7000†	4.77
T-23X#	20000 CT	600/250/50	60–15000†	5.60
T-24X	10000 CTɪ	2000 CT	50–20000†	4.52
T-25X	12000 CTɪ	600 CT/150‡	50–16000†	4.70
T-26X	50000 CT▲	600 CT/150‡	100–15000♦	4.68
T-31X■#	600/250/50	600/250/50	50–15000†	5.08
T-32X	1500 CTɪ	600 CT/150‡	50–20000♦	3.90
T-33X#	5000 CT	5000 CT	60–15000†	6.27
T-34X#	500 CTɪ	500 CT/125‡	50–20000♦	3.90
T-35X#	600 CT (1mA)	2000CT/500‡	50–20000†	5.12
T-41X	1000 (10 mA)	200 CT	20–15000	5.18
T-42X	9800ɪ	15	200–50000	4.98
T-101X	50 H at .75 mA audio choke			4.43
T-102X	6 or 4 H, 3 or 6 mA coupling reactor			2.87

MINIATURE JAF AUDIOS—HERMETICALLY SEALED

"Trialloy" case meets MIL specs; 45 dB shielding. 5 1/64" sq. x 1 5/32" h.

JAF-1■	600/250/50	50000	60–15000	$18.95
JAF-2■	600/250/50	250000	100–15000	19.15
JAF-5■	30/12/4	50000	50–15000	20.28
JAF-11	15000	50000	60–15000†	20.28
JAF-12	15000	60000 CT	60–15000†	20.28
JAF-13	15000*	95000 CT	350–7000†	20.28
JAF-14■	200	½ megohm	300–3,000	20.28
JAF-15	15000	1 megohm	350–5,000†	20.28
JAF-21	15000	600/250/50	60–15000†	20.28
JAF-22	15000*	600/250/50	350–7000†	20.28
JAF-23	20000 CT	600/250/50	60–15000†	20.28
JAF-24	10000 CTɪ	2000 CT	50–20000†	20.28
JAF-25	12000 CTɪ	600 CT/150‡	50–15000†	20.28
JAF-31■	600/250/50	600/250/50	60–15000†	20.28
JAF-32	1500 CTɪ	600 CT/150‡	50–20000♦	20.28
JAF-33■	5000 CT	5000 CT	60–15000†	20.57
JAF-34	500 CTɪ	500 CT/125‡	50–20000♦	20.28
JAF-101	50 H at .75 mA coupling reactor			20.28
JAF-102	6 or 4 H at 3 or 6 mA coupling reactor			20.28

*Designed for 3 mA in primary except: ɪ2 mA; ▲.5 mA (low freq. results from DC in primary of all other units). ‡Power output 1 mW except: †10 mW; ♦20 mW. §1 1/32" x 1 5/16" dia.; other JO types are 1 25/32" x 1 5/16" dia. ‡Split winding. ■Static shield. •mA ratings are DC. #Also available encapsulated with plug-in terminals.

★ QUANTITY DISCOUNTS

1–9, Net; 10–24, 10%; 25–49, 19%; 50–99, 25%; 100–249, 28¾ %; 250 up, 32½ %.

Audio Transformers

X

Z

A

MINIATURE AUDIO TRANSISTOR TRANSFORMERS

Triad No.	Impedance, Ohms Primary‡	Secondary	Output, Watts	Net Each*
TY-18X	500 CT	200 CT	.5	$4.25
TY-19XT	10000 CT	16/8/4	.15	5.42
TY-21XT	1200 CT	20000 CT	.15	5.45
TY-22XT	5000 CT	7500 CT	.15	5.50
TY-24X	50000 (.5 mA)	300 CT	.2	8.55
TY-25X	100000 (.5 mA)	200 CT	.2	7.88
TY-26X	100000 (.5 mA)	3000 CT	.2	12.07
TY-27XT	500 CT (2 mA)	500 CT	.01	5.68
TY-28XT	500 CT (2 mA)	200 CT	.01	4.93
TY-32X	200 CT (2 mA)	2000 CT	.2	4.37
TY-33X	400 CT (5 mA)	16/8/4	.2	4.37
TY-34X	400 CT (5 mA)	2000 CT	.2	4.37
TY-35X*	500 CT (2 mA)	150 CT	.1	3.50
TY-36X	2000 (2 mA)	1500 CT	.2	4.60
TY-37X*	2000 CT (4 mA)	8000 CT	.2	5.55
TY-38X*	3000 CT (4 mA)	1000 CT	.2	8.32
TY-39X	4000 CT (4 mA)	16/8/4	.2	6.83
TY-40X	5000 (1 mA)	200 CT	.1	7.43
TY-41X	16000 (1 mA)	4000	.1	5.55
TY-42X	20000 (.5 mA)	8/4	.1	5.37
TY-43X	20000 (.5 mA)	800 CT	.1	8.88
TY-44X	1000 (10 mA)	16/8/4	.2	7.62
TY-45X*	500 CT (5 mA)	16/8/4	.2	5.57
TY-46X	100 (100 mA)	1000 CT	.25	3.43
TY-47X	2000 CT (10 mA)	16/8/4	.2	5.62
TY-49X	500 CT (12 mA)	5000 CT	.3	4.88
TY-50X	125000	2000 CT	.04	8.43
TY-51X*	2000 CT (10 mA)	200 CT	.05	5.88
TY-52X	20000 CT (1 mA)	2000 CT	.1	9.32
TY-54X	15000 (1.5 mA)	200 CT	.1	6.60
TY-55X	2000 CT (2 mA)	500 CT	.2	5.62
TY-56X	10000 (1 mA)	2000 CT	.05	6.63
TY-57X	250 CT (10 mA)	16/8/4	.2	4.77
TY-58X	125 CT (15 mA)	8/4	.2	4.37
TY-59X	5000 CT (1 mA)	50000 CT	.2	8.60
TY-60X	200000	1000	.1	7.35
TY-62X	10000 (2 mA)	4	.1	4.62
TY-150X	500 CT	500 CT	.3	4.85
TY-151X	5000 CT	10,000 CT	.15	5.80
TY-152X	20 CT	8	10.0	4.02

*Also available in XT mounting for printed circuit cards.

PLUG-IN PC AUDIO TRANSFORMERS

Output 100 mW. Size, ⅝" x 13/16" x 19/32".

Triad No.	Impedance, Ohms Primary	Secondary	Pri. DC Unbal.	Net Each*
TY-141P	10000 CT	10000 CT	4	$5.50
TY-142P	10000 CT	2000 CT	4	4.93
TY-143P	10000 CT	1500 CT	4	4.83
TY-144P	15000 CT	15000 CT	4	5.45
TY-145P	600 CT	600 CT	15	4.18
TY-146P	600CT/150†	600CT/150†	.....	8.23

†Split winding.

SUBMINIATURE AUDIO TRANSFORMERS

Open frame construction. Type XT, 1/16" x 11/16" x 1/16". All others, 7/16" x ½" x 1/16". Power output, 1 mW.

Triad No.	Impedance, Ohms Primary‡	Secondary	Frequency Resp., Hz	Net Each*
TZ-1	600/250/50	60000	70–20000	$7.13
TZ-2XT	200 CT	200000	100–20000	7.47
TZ-5	30/12/4	50000	70–20000	9.40
TZ-7	30/12/4	1000	40–20000	5.12
TZ-13	15000 (1 mA)	135000 CT	70–15000	7.45
TZ-15	20000 (.5 mA)	1200/600/100	70–15000	5.38
TZ-17XT	10000 CT	2000 CT	70–15000	5.90
TZ-24XT	25000 CT (.5 mA)	500 CT	100–15000	6.78
TZ-25	10000 (1 mA)	200	70–20000	6.13
TZ-26	1000 (5 mA)	50	100–10000	5.52
TZ-28	600	50	40–60000	4.42
TZ-32XT	1500 CT (2.5 mA)	600 CT/150*	70–20000†	5.65
TZ-103XT	1 or 4 H	Coupling Reactor		4.12

*Split wdg. †Power output, 10 mW. ‡mA ratings are DC.

TRANSISTOR DRIVER TRANSFORMERS—SPLIT SECONDARY

Size, 1 15/16" h. x 3 5/16" w. x 1¾" d.

Triad No.	Output, Watts	DC Resistance Pri.	Ea. Sec.	Turns Ratio	Net Each*
TY-158X	3–5	3	3.6	1.5:1:1	$6.08
TY-159X	3–5	11	3.6	3:1:1	6.02
TY-160X	3–5	45	3.6	6:1:1	6.58

DRIVER TRANSFORMERS

Triad No.	Impedance Primary	Secondary	Freq., Hz	Size, Inches H. x W. x D.	Net Each*
A-81X	15000†	8500 CT	300–3K	1 1/16 x 2 1/16 x 1 1/4	$4.50
A-83X	7000‡	15800 CT	70–7K	1 5/8 x 2 13/16 x 1 1/2	4.52
A-85X	7000‡	4000 CT	50–10K	1 15/16 x 3 1/16 x 1 3/4	5.63
A-89A	4K/8K§	4.4K/8.8K*	50–10K	3 1/16 x 2 21/32 x 2 5/8	12.63
TY-61X	100#	100 CT	50–10K	1 5/8 x 2 13/16 x 1 1/2	4.18

*Split winding. †15 mADC. ‡40 mADC. §100 mADC per side. #100 mADC.

HIGH FIDELITY OUTPUT TRANSFORMERS

Tube to Line or Voice Coil

Triad No.	Impedance, Ohms Primary	Secondary	Output, Watts	Case Size, Inches H. x W. x D.	Wt., Lbs.	Net Each*
S-31A	8000 CT	16/8/4	15	3 1/16 x 2 21/32 x 3 3/8	3.8	$13.35
S-32A	8000 CT	500/250/125	15	3 1/16 x 2 21/32 x 3 3/8	3.8	9.52
S-142A	8000 CT†	16/8/4	15	3 1/16 x 2 21/32 x 3 3/8	3.75	14.73
S-35A	5000 CT	16/8/4	20	3 1/16 x 2 21/32 x 3 5/8	4.3	15.65
S-36A	5000 CT	500/250/125	20	3 1/16 x 2 21/32 x 3 5/8	4.25	10.07
S-80E	8000 CT	500/200/70/ 16/8/5/ 3/1.5	20	3¾ x3 x3	3.75	29.85
S-146A	6600 CT†	16/8/4	25	3 1/16 x 2 21/32 x 4 1/4	5.75	22.72
S-42A	4500 CT	16/8/4	50	4 1/4 x 3 19/32 x 4 5/8	8.25	24.97
SR-45Z*	4000/2000/ 1000/500	16/8/4	10	2 13/32 x 3 1/8 x 2 1/8	1.75	8.73
S-46A*	2000/1000/ 500/250	16/8/4	20	3 1/16 x 2 21/32 x 3 3/8	4	12.13

†Williamson type circuit may be used. Taps on primary for proper screen operation. *70 V line autoformer.

TELEPHONE COUPLING TRANSFORMERS

Transformers specifically designed and manufactured to telephone company requirements for voice/data use over leased private lines or through the dial-up switched telephone network. Used for impedance matching, isolation, line balance, bridging, hybrid and holding-coil applications. All units in plug-in printed circuit construction. **Frequency Response:** 300–3500 Hz, ±0.5 dB. **Longitudinal Balance:** 45 dB min. **Return Loss:** 26 dB min. **Distortion:** 0.5% max. **Impedance Matching:** ±10%. **Power Level:** −45 dBm to +7 dBm.

Triad No.	Application	Impedance, Ohms Primary	Secondary	Net Each
TY-300P	Hybrid†	600	600/600‡	$5.32
TY-301P	Coupling	600	900	5.65
TY-302P	Hybrid†	600	600/600	6.47
TY-303P	Bridging	4000	600	5.98
TY-304P	Coupling	600CT	600CT	5.00
TY-350P	Holding Coil	2.0 Hy @ 60 mA 1.3 Hy @ 100 mA 180 ohms res.		5.42

†Two required for hybrid operation.
‡Split winding; one wide band, one narrow band.

UNIVERSAL OUTPUT TRANSFORMERS

Single or Push-Pull Tubes to Voice Coil

Triad No.	Pri. Imped., Kohms	Pri. mADC P-P	Single	Output, Watts	Wt., Lbs.	Net Each*
S-51X*	4–14	70	35	5	.45	$5.37
S-52X*	4–24	50	25	4	.45	5.90
S-53X*	4–14	80	40	8	.6	5.57
S-54X†	1.5–5	.....	70	8	.6	5.80
S-55Z‡	4–14	100	.....	10	1	7.62
S-55X‡	4–14	100	.....	10	1	7.52
S-56Z†	1.5–6	.....	85	12	1.6	6.23
S-57Z‡	4–14	110	.....	15	1.6	7.62
S-61Z‡	4–12	125	.....	20	1.8	8.47
S-62X*	2–10	60	30	2	.21	5.52
S-63X*	1.5–7	100	50	6	.45	4.77

*Single or p-p plates. †Single plate. ‡P-p plates.

INTERSTAGE TRANSFORMERS, PLATE TO GRID

Triad No.	Frequency, Resp., Hz	Impedance, Ohms Pri.	Sec.	Turns Ratio	Size, Inches H. x W. x D.	Net Ea.*
A-31X	100–10000	10000	90000 CT	1:3	1 3/8 x 2 3/4 x 1 3/8	$5.63
A-33X	70–10000	10000	90000 CT	1:3	1 15/16 x 3 5/16 x 1 3/4	5.45
A-42Z	70–10000	15000 CT	135000 CT	1:3	2 5/16 x 2 7/8 x 1 3/4	8.65
		15000 CT	33750	1:1.5		
		3750	135000 CT	1:6		
A-39A	50–10000	20000 CT	45000 CT	1:1.5	2 15/32 x 2 11/32 x 2 3/8	11.28

LOW LEVEL OUTPUT TRANSFORMERS

Triad No.	Freq. Resp., Hz	Impedance, Ohms Pri.	Sec.	Size, Inches H. x W. x D.	Net Each*
A-51X	200–8000	7000	50	1 3/16 x 2 1/16 x 1 1/4	$3.22
A-53X	70–7000	18000 CT	600/250/50	1 5/8 x 2 13/16 x 1 1/2	5.63
S-58X	100–10000	600†/150*	600†/150*	1 5/16 x 2 1/16 x 1 1/4	4.75
S-81X	100–10000	600	600	1 5/16 x 2 1/16 x 1 1/4	6.65
S-84X	200–15000	500/333/ 200/125/50	500/333/ 200/125/50	2 x 3 1/4 x 1 5/8	7.73

*Split windings. †Center tapped.

MATCHING TRANSFORMERS—25 OR 70.7 VOLT LINE

Triad No.	Matching Imped., Ohms Primary	Sec.	Audio Watts	Size, Inches H. x W. x D.	Net Each*
S-129Z	20.8 CT (25–70 V)	166 CT	30	3 1/16 x 3 5/16 x 2 1/4	$7.23
	166 CT (70–25 V)	20.8 CT			
S-130Z	62.5 CT (25–70 V)	500 CT	10	2 5/16 x 2 7/16 x 1 3/4	4.32
	500 CT (70–25 V)	62.5 CT			

OUTPUT TRANSFORMERS

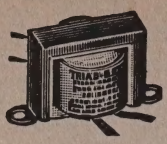
25 Volt Line to Voice Coil

Triad No.	Impedance, Ohms Primary	Secondary	Output, W	Size, Inches H. x W. x D.	Net Each*
S-131X	1250/625/ 312*	8/4	2	1 3/8 x 2 3/8 x 1 3/8	$4.10
S-132X	1000/500/ 250/125*	16/8/4	5	1 5/8 x 2 13/16 x 1 5/8	4.93
S-133Z	500/250/ 125/62.5*	16/8/4	10	2 11/32 x 3 1/16 x 2	6.95

*Isolation. *See another page for quantity discounts.

Audio Transformers

A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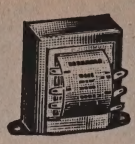

Z

LOW LEVEL AUDIO

Single-hole mounting, permits rotation for minimum hum pickup. Alloy shielding for a 40–60 dB reduction in hum pickup (60–80 dB on A-11J and A-12J); flexible leads. Units have a wide frequency range. Input units electrostatically and magnetically shielded. Circuit diagrams permanently affixed to case.

Triad No.	Application	Primary Imped., Ohms	Net Each*
A-9J†	Line or mike to grid	600/250/50	$14.52
A-10J†	Bal. line or mike to grid	600 CT/150*	14.57
A-11J†	Line or mike to grid	600/250/50	15.25
A-12J†	Bal. line or mike to grid	600 CT/150*	15.40
A-13J†	Line to line or transistor	600/300/200 CT/ 110/50*	13.87
A-40J	Plate to 1 or 2 grids	15000	14.67
A-52J	Line or transistor to line or transistor	500 CT/125*	8.40
A-55J	Plate to line	15000	14.23
A-56J	Line or transistor to VC	500 CT/125*	9.07
A-57J	Line or transistor to line	600/250/50	13.58
A-58J	P-P plates or transistors to line or transistors	10000 CT/2500*	10.58
A-61J	Line to 2 simultaneously loaded lines or transistors	600/150*	15.38
A-64J	Line or transistor to transistor	100 CT/25*	7.85
A-65J	Sgl or p-p plates to bal. line	15000 CT	14.53
A-66J	Plate to line	15000	13.73
A-67J†	Bal. line to bal. line	600 CT/150*	14.50
A-68J	Sgl or p-p plates to bal. line	15000 CT	15.35
A-69J	P-P plates or bridging to line	25000 CT/6250*	11.30
A-70J	Line or transistor to line or transistor	500 CT/125*	8.10
A-77J	Audio choke, 250 H, 5 mA DC; 62.5 H, 10 mADC	.....	12.38
A-78J	1 or 2 transistor to bal. line	2000 CT	14.47
A-79J	Transistor to p-p transistors or line	1000	14.22
A-80J	Bal. line or mike to grid	900CT/225*	17.62

Note: Frequency response of all units is 30–15,000 Hz except A-61J, 60–15,000 Hz; A-69J, 50–20,000 Hz; A-66J, A-68J, 40–15,000 Hz and A-79J, 20–15,000 Hz. *Split winding. †Static shield.

INPUT TRANSFORMERS, LINE OR MIKE TO GRID

Triad No.	Application	Pri. Ohms	Turns Ratio	Size, Inches H. x W. x D.	Net Each*
A-1X	Line or mike to grid	100	1:31.4	1 3/16 x2 1/16 x1 1/4	$4.42
A-3X	Line or mike to grid	400*	1:22.1	1 3/16 x2 1/16 x1 1/4	4.50
A-4X	Line to single grid	†	1:12	1 3/16 x2 1/16 x1 1/4	5.73
A-5X	Mike or line to sgl. or p-p grid	100	1:83.3	1 5/8 x2 15/16x1 1/2	6.03
A-6X	Intercom-spkr. VC to grid	8/4	1:79.6	1 3/16 x2 1/16 x1 1/4	4.45

*Center tapped. †500 CT/333/200 CT/125/67.5 CT/50.

PLUG-IN INPUT TRANSFORMER

Highly magnetic shielded for coupling low-Z mikes or magnetic heads to amplifier input. Has 8-prong plug.

Triad No.	Imped., Ohms Pri.†	Imped., Ohms Sec.	Freq. Resp., Hz	Shielding	Size, In. H. x Dia.	Net Each*
HS-273P	200/50 CT	80,000	30-20,000	70 dB	1 3/4 x 1 3/8	$27.08

†Split winding.

REPLACEMENT PUSH-PULL OUTPUT TRANSFORMERS

Push-pull tubes to voice coil, 3–4 ohms.

Triad No.	Primary Impedance	Total mADC	Output, Watts	Size, Inches H. x W. x D.	Net Each*
S-39X	12000 CT	60	3–4	1 3/8 x 2 3/8 x1 3/8	$3.15
S-64X	6000 CT	80	4–6	1 3/8 x2 3/8 x1 1/2	3.32
S-15X	10000 CT	70	7–10	1 5/8 x2 13/16x1 1/2	3.62
S-19Z	10000 CT	100	10–14	2 5/16 x2 1/8 x2	5.03
S-68Z	3400 CT/3000 CT/3800 CT	180	15–18	2 11/16x3 1/8 x2	4.50
S-69Z	5000 CT	120	15–18	2 11/16x3 1/8 x2	6.37

LINE OUTPUT TRANSFORMERS

Tube to Voice Coil and Line

Triad No.	Impedance, Ohms Primary	Impedance, Ohms Secondary	Audio Watts	Size, Inches H. x W. x D.	Net Each*
S-28X	7500	500/16/8/4	5	1 15/16x3 5/16 x1 3/4	$5.90
S-29X	5000	500/16/8/4	5	1 15/16x3 5/16 x1 3/4	6.18
S-22A	5000 CT	500/16/8/4	15	2 15/16x2 11/16x2 3/8	9.57
S-24A	8000 CT	500/16/8/4	15	2 15/16x2 11/16x2 3/8	9.02
S-60A	6600 CT	500/250/16/8/4	35	3 1/8 x3 9/16 x3 3/8	15.40

Line to Voice Coil

Triad No.	Impedance, Ohms Primary	Impedance, Ohms Secondary	Audio Watts	Size, Inches H. x W. x D.	Net Each*
S-23X*	50	3.2-4	1	1 3/16 x2 1/16 x1 1/4	$ 3.00
S-26X*	500/50	3.2-4	4	1 3/16 x2 1/16 x1 1/4	3.18
S-65X	500	8/4	5	1 3/8 x2 3/8 x1 3/8	3.80
S-66X*	500	16/8/4	3	1 3/8 x2 3/8 x1 3/8	4.00
S-76Z	250/125/62.5/31	16/8/4	10	2 15/16x3 1/16 x2 1/16	7.18
S-83Z	500	15/8/6/4	25	2 3/8 x2 7/16 x1 5/8	6.33
S-77U§	500 CT/125	32/16/8/4/2	30	3 7/16 x2 13/16x4 9/16	15.32

70.7 Volt Line to Voice Coil

S-70Z*	16K/8K/4K/2K/1K	8/4	5	1 11/16x2 x1 3/16	$ 5.42
S-71Z*	4K/2K/1K/500	16/8/4	10	1 15/16x2 3/8 x1 1/2	7.07
S-25Z*	4K/2K/1K/500	8/4	10	2 5/16 x2 7/8 x1 3/4	6.12
SR45Z*	4K/2K/1K/500	16/8/4	10	2 15/16x3 1/16 x2 1/16	8.73
SR74K†	4K/2K/1K/500	16/8/4	10	3 7/16 x2 15/16x3 1/16	6.97
S-72Z*	2K/1K/500/250	16/8/4	20	2 5/16 x2 7/8 x1 3/4	7.07
S-46A*	2K/1K/500/250	16/8/4	20	3 7/16 x2 11/16x3 3/16	12.13
S-78Z‡	4K/2K/1K/500	16/8/4	10	1 15/16x2 3/8 x1 1/2	6.70
S-79Z‡	2K/1K/500/250	16/8/4	20	2 5/16 x2 7/8 x1 3/4	7.12
S-47Z‡	10K/5K/2.5K/1250/625	16/8/4	8	1 15/16x2 3/8 x1 5/8	5.60
S-73X‡	16K/8K/4K/2K/1K	16/8/4	5	1 3/8 x2 3/8 x1 3/8	5.75
S-85X	5K/2.5K/1.667K/1250/1K	16/8	5/4/3/2/1	1 3/8 x2 3/8 1 3/8	5.70
S-86Z	10K/5K/2.5K/1250/625/312	16/8/4	16/8/4/2/1.5	2 3/4 x3 1/8 x2 1/4	7.90

*Autoformer. †Weatherproof autoformer. ‡Isolation transformer. §Split winding.

REPLACEMENT OUTPUT TRANSFORMERS

Single Tube to Standard Voice Coil (3–4 ohms)

Triad No.	Pri. Imped., Ohms	mA DC	Audio Watts	Size, Inches H. x W. x D.	Net Each*
S-40X	14000	5.5	.25	13/16x1 5/8 x1	$4.13
S-37X	25000	4	.25	13/16x1 5/8 x1	5.27
S-20X	2000	50	2–3	1 3/16 x2 1/16 x1 1/4	2.70
S-20Z	2000	50	2–3	1 7/16 x1 13/16x1 1/4	2.72
S-12X	2500	50	2–3	1 3/16 x2 1/16 x1 1/4	2.62
S-12Z	2500	50	2–3	1 7/16 x1 13/16x1 1/4	2.70
S-16X	3000/5% tap	50	2–3	1 3/16 x2 1/16 x1 1/4	2.77
S-14Z	4000	50	2–3	1 7/16 x1 13/16x1 1/4	2.77
S-6X	5000	35	2–3	1 3/16 x2 1/16 x1 1/4	2.87
S-6Z	5000	35	2–3	1 7/16 x1 13/16x1 1/4	2.95
S-48Z	6500	35	2–3	1 7/16 x1 13/16x1 1/4	2.37
S-8X	8000	30	2–3	1 3/16 x2 1/16 x1 1/4	2.87
S-8Z	8000	30	2–3	1 7/16 x1 13/16x1 1/4	2.67
S-11X	10000	30	2–3	1 3/16 x2 1/16 x1 1/4	2.98
S-11Z	10000	30	2–3	1 7/16 x1 13/16x1 1/4	2.98
S-13X	25000	10	2–3	1 3/16 x2 1/16 x1 1/4	3.10
S-13Z	25000	10	2–3	1 7/16 x1 13/16x1 1/4	3.15
S-2X	2000	55	3–5	1 3/8 x2 3/8 x1 3/8	2.95
S-1X	2500	60	3–5	1 3/8 x2 3/8 x1 3/8	2.95
S-30X	3000	60	3–5	1 3/8 x2 3/8 x1 3/8	2.95
S-41X	4000	50	3–5	1 3/8 x2 3/8 x1 3/8	2.95
S-3X	5000	40	3–5	1 3/8 x2 3/8 x1 3/8	3.22
S-7X	7500	30	3–5	1 3/8 x2 3/8 x1 3/8	3.03
S-17X	10000	30	3–5	1 3/8 x2 3/8 x1 3/8	3.05
S-50X	2500	60	4–6	1 5/8 x2 1/16x1 1/2	3.55
S-67X	3200	60	4–6	1 5/8 x2 1/16x1 1/2	3.27
S-18X	8000	45	4–6	1 5/8 x2 1/16x1 1/2	3.43
S-18Z	8000	45	4–6	1 15/16x2 3/8 x1 1/2	3.13
S-10X	10000	45	4–6	1 5/8 x2 1/16x1 1/2	3.10
S-4X	3000	70	5–8	1 15/16x3 5/16 x1 3/4	3.80
S-5X	5000	50	5–8	1 15/16x3 5/16 x1 3/4	3.93
S-5Z	5000	50	5–8	2 5/16 x2 7/8 x1 3/4	4.00
S-9X	7500	50	5–8	1 15/16x3 5/16 x1 3/4	3.95
S-9Z	7500	50	5–8	2 3/16 x2 7/8 x1 3/4	3.98

★ QUANTITY DISCOUNTS

1–9, Net; 10–24, 10%; 25–49, 19%; 50–99, 25%; 100–249, 28¾%; 250 up, 32½%.

Standard Series Transformers

COMBINED PLATE AND FILAMENT

Primary 115 Volts—60 Hz

"Climatite" treated coils and cores for protection against moisture and for elimination of lamination chatter. Small in size, yet loss is at a minimum. Temperature rise design is 55° C. Copper foil static shields grounded to case and core.

Triad No.	Secondary AC Volts	Secondary mA DC	Rect. Fil. V	Rect. Fil. A	Other Filament Volts	Other Filament A	Wt., Lbs.	Net Each*
R-104A	500 CT	40	...	...	6.3 CT	2	1.55	$ 8.47
R-104B	500 CT	40	...	...	6.3 CT	2	1.55	8.62
R-105A	600 CT	65	...	...	6.3 CT	2.7	2	9.18
R-105B	600 CT	65	...	...	6.3 CT	2.7	2	10.17
R-106A	480 CT	50	5	2	6.3 CT	2	2.1	10.70
R-106B	480 CT	50	5	2	6.3 CT	2	2.1	10.83
R-108A	500 CT	75	5	2	6.3 CT	2.5	2.4	11.22
R-108B	500 CT	75	5	2	6.3 CT	2.5	2.4	11.27
R-109A	600 CT	75	5	2	6.3 CT	3	2.9	11.13
R-110A	525 CT	90	5	2	6.3 CT	5	3.25	13.07
R-110B	525 CT	90	5	2	6.3 CT	5	3.25	12.97
R-111A	700 CT	90	5	3	6.3 CT	3.5	3.25	13.65
R-111B	700 CT	90	5	3	6.3 CT	3.5	3.25	13.58
R-112A	550 CT	110	5	2	6.3 CT	5	3.7	12.08
R-112B	550 CT	110	5	2	6.3 CT	5	3.7	13.58
R-114A	700 CT	125	5	3	6.3 CT	4.5	4.7	15.12
R-115A	680 CT	70	5	2	6.3 CT	2.5	3.5	10.68
R-115B	680 CT	70	5	2	6.3 CT	2.5	3.5	10.77
R-116A	750 CT	175	5	3	6.3 CT	8	7.45	17.35
R-118B	750 CT	175	5	3	6.3 CT	8	7.45	19.53
R-120A	700 CT	200	5	3	6.3 CT	8	8.25	21.87
R-121A	800 CT	200	5	3	6.3 CT	6	8.25	22.87

PLATE POWER TRANSFORMERS

Static Shield; Primary 115 Volts—60 Hz

Triad No.	Secondary Volts AC§	Secondary Volts DC	Secondary mADC CCS	Secondary mADC ICAS	Rect. Fil.	Wt. Lbs.	Net Each*
P-1A	440/220 CT	180/90	160	192	5V-3A	4	$12.93
P-3A	600/300 CT	250/125	300	360	5V-4A	6.25	16.33
P-5A	1100 CT	400	250	300	5V-4A	8	22.05
P-7A	1235 CT	500	250	300	5V-4A	9	22.70
P-11A	1455 CT	600	250	300	.....	8.5	21.48
P-213AL	1780 CT*†	750	250	300	.....	9.5	28.55
P-14A	1780 CT‡	750/600	250	300	.....	13.5	32.17
P-215AL	2340 CT*†	1000	250	300	.....	13.5	37.87
P-217AL	2880 CT*†	1250	250	300	.....	14.8	42.53
PR-21AL	3300 CT*†	1500	500	600	.....	29	70.58

*Primary, 115/230 VAC. †Plate leads outside of case for rectifiers. ‡Also 1425 VAC CT. §Secondary CT must be grounded.

FILAMENT TRANSFORMERS, SINGLE SECONDARY

Primary 115 Volts—50–60 Hz

Triad No.	Secondary Volts	Secondary Amps	Test Volts	Case Size, In. H. x W. x D.	Wt. Lbs.	Net Each*
F-1X§	2.5 CT	3	1500	1 5/8 x 2 13/16 x 1 5/8	.68	$ 4.08
F-72Z§	2.5 CT	5	7500	2 13/32 x 3 1/8 x 2 1/8	1.7	7.08
F-6X§	2.5 CT	6	2500	1 15/16 x 3 5/16 x 1 3/4	1	5.65
F-3X§	2.5 CT	10	3000	2 1/32 x 3 3/4 x 2 1/8	1.7	6.87
F-5U	2.5 CT	10	7500	3 1/16 x 2 1/2 x 2 7/16	2.2	8.40
F-71U§	2.5 CT	10	10000	3 7/16 x 2 13/16 x 2 9/16	2.6	10.13
F-7X	5 CT	3	1500	1 15/16 x 3 5/16 x 2	1.3	5.07
F-8X	5 CT	6	1500	2 1/32 x 3 3/4 x 2 1/8	1.7	7.03
F-12X	5 CT	8	2500	2 19/32 x 4 x 2 1/4	2.5	7.80
F-9U	5.2 CT	13	1500	3 7/16 x 2 13/16 x 2 15/16	4	12.98
F-15U§	5 CT	15	3000	3 1/2 x 2 7/8 x 2 11/16	3.25	14.80
F-10U§	5 CT	14	10000	3 15/16 x 3 3/16 x 3 1/16	4.75	14.03
F-11U	5.2 CT	24	1500	3 15/16 x 3 3/16 x 3 7/16	6.75	15.22
F-13X	6.3	.6	1500	1 5/8 x 2 3/8 x 1 3/8	.37	3.75
R-84K†	6.3	.6	3500	2 3/4 x 2 1/4 x 2 11/16	1.5	13.03
F-14X	6.3 CT	1.2	2500	1 5/8 x 2 13/16 x 1 5/8	.7	4.12
F-52X†	6.3	1.2	5000	1 15/16 x 3 5/16 x 1 3/4	1	5.35
F-51X†§	6.3/5	2	5000	1 15/16 x 3 5/16 x 2	1.25	6.20
F-53X	6.3	4	5000	2 19/32 x 4 x 2 1/4	2.1	6.57
F-43X§	6.3	4	1500	1 15/16 x 3 5/16 x 2	1.25	5.45
F-16X	6.3 CT	3	2500	1 15/16 x 3 5/16 x 2	1.3	5.32
F-18X	6.3 CT	6	1500	2 19/32 x 4 x 2 1/4	2.3	7.78
F-18A	6.3 CT	6	1500	3 3/32 x 2 21/32 x 2 5/8	2.5	9.18
F-19X*	6.3/6 CT	6	2000	2 19/32 x 4 x 2 1/4	2.3	7.88
F-21A	6.3 CT	10	1500	3 1/2 x 2 21/32 x 3 1/8	3.8	12.68
F-20U*	6.3/6 CT	11	3000	3 1/2 x 2 7/8 x 2 15/16	4	13.53
F-17U§	6.3 CT	15	10000	4 1/4 x 3 1/2 x 3 5/16	7.5	17.92
F-22A	6.3 CT	20	2000	3 7/8 x 3 9/32 x 3 7/8	7	16.82
F-24U*	7.5/6.3CT	8	3000	3 1/2 x 2 7/8 x 2 13/16	3.65	11.02
F-28U*	7.5/6.3CT	25	3000	4 5/8 x 3 13/16 x 3 7/16	7.5	24.18
F-31X	10 CT	3	2000	2 3/8 x 3 3/4 x 3 3/8	1.6	5.57
F-33U	10 CT	5	2000	2 1/2 x 2 1/2 x 3 1/16	3.0	10.13
F-23U	10 CT	7	1500	3 1/2 x 2 7/8 x 2 15/16	3.9	11.37
F-35U	10 CT	10	2000	3 7/8 x 3 1/4 x 3 9/16	5.0	16.72
F-29U*	12/11/10 CT	11	3000	4 3/8 x 3 1/2 x 3 1/16	6.5	17.68
F-25X	12.6 CT	1.5	1500	1 15/16 x 3 5/16 x 2	1.3	4.97
F-44X§	12.6 CT	2	1500	1 15/16 x 3 5/16 x 2	1.25	4.85
F-26X§	12.6 CT	2.5	1500	2 9/32 x 3 11/16 x 2	1.55	5.50
F-40X§	26.8 CT	1	1500	1 15/16 x 3 5/16 x 2	1.3	4.95
F-55X	28.8 CT	1.7	1500	2 19/32 x 4 x 2 1/4	2.3	6.28
F-57X	25.2 CT	1	1500	1 15/16 x 3 5/16 x 2	1.5	5.52
F-41X§	25.2 CT	2	1500	2 19/32 x 4 x 2 1/4	2.2	6.52
F-56X	25.2 CT	2.8	1500	2 21/32 x 4 x 2 1/4	2.5	9.12
F-50X†‡§	6.3/5	2	5000	1 15/16 x 3 5/16 x 2	1.2	6.60
F-45X§	24 CT	1	1500	1 15/16 x 3 3/16 x 2	1.3	4.98
F-54X	35 CT	1.5	1500	2 19/32 x 4 x 2 1/4	2.2	6.65
F-58A	50 CT	5	1500	4 5/8 x 3 15/16 x 4 1/2	1.0	22.47
F.59X	60 CT	.4	1500	1 15/16 x 3 1/16 x 2	1.3	4.78

*Tapped primary to produce lower voltages. †Static shield. ‡Filament line transformer; primary 6.3 V/5 V. §60 Hz operation.

FILAMENT TRANSFORMERS, MULTIPLE SECONDARY

Primary 115 Volts—50–60 Hz

Triad No.	Secondary Volts	Secondary Amps	Test Volts rms	Case Size, In. H. x W. x D.	Wt. Lbs.	Net Each*
F-27U	10 CT	10	1500	4 3/8 x 3 1/2 x 3 1/16	6.2	$19.68
	2.5 CT	10	7500			
F-32A	6.3 CT†	3	1500	3 1/32 x 2 11/16 x 2 5/8	2.5	9.42
	6.3 CT†	3				
F-34A	6.3 CT†	1.75	1500	3 1/32 x 2 11/16 x 3	3.3	11.30
	6.3†	1.75				
	6.3†	1.75				
	6.3†	1.75				
F-36A	6.3 CT†	3.5	1500	3 7/8 x 3 1/32 x 3 1/4	5	16.55
	6.3†	3.5				
	6.3†	3.5				
	6.3†	3.5				
F-38A	6.3 CT†	5	1500	3 7/8 x 3 1/32 x 3 1/2	6	16.40
	6.3†	5				
	6.3	1				
	5 CT	2				
	5	4				
F-42A	12.6 CT†	2.5	1500	3 1/2 x 2 11/16 x 3 1/8	3.7	10.42
	12.6†	2.5				
F-83A*	12.6 CT†	5	1500	3 7/8 x 3 1/32 x 3 1/2	6	16.97
	12.6†	5	2500			

*Primary tapped for 105/115/125 volts; 60 Hz operation. †Windings may be connected in series or in parallel.

LOW VOLTAGE/LOW CURRENT

Primary 115 Volts—50–60 Hz

Triad No.	Secondary Volts	Secondary Amps	Case Size, In. H. x W. x D.	Net Each*
F-112X	14 CT	0.25	1 3/8 x 2 3/8 x 1 3/8	$3.93
F-113X	12	0.15	1 3/8 x 2 3/8 x 1 3/8	3.75
F-114X	12	0.7	1 5/8 x 2 1/16 x 1 5/8	5.32
F-115X	24 CT	0.085	1 3/16 x 2 1/16 x 1 1/4	4.75
F-116X	24 CT	0.2	1 3/8 x 2 3/8 x 1 1/2	5.05
F-3116X#	24 CT	0.2	1 3/8 x 2 3/8 x 1 1/2	5.90
F-117X	24 CT	0.4	1 5/8 x 2 1/16 x 1 5/8	5.50
F-118X	24 CT	0.7	1 15/16 x 3 1/4 x 2	4.67
F-119X	26.8 CT	0.15	1 3/8 x 2 3/8 x 1 1/2	4.83
F-120X	26.8 CT	0.5	1 15/16 x 3 1/4 x 2	4.52
F-121X	28 CT	0.085	1 3/16 x 2 1/16 x 1 3/8	4.63
F-122X	28 CT	0.175	1 3/8 x 2 3/8 x 1 1/2	5.00
F-123X	28 CT	0.300	1 5/8 x 2 1/16 x 1 5/8	5.12
F-124X	28 CT	0.800	1 15/16 x 3 1/4 x 2	4.88

#Has 115/230 volt primary.

COMBINED PLATE AND FILAMENT TRANSFORMERS

Static Shield; Primary 115 Volts—50–60 Hz

Triad No.	Secondary AC Volts	Secondary mA DC	Rect. Fil. V	Rect. Fil. A	Other Filament Volts	Other Filament A	Wt. Lbs.	Net Each*
R-22A*	380/320 CT	70	...	...	6.3 6.3 CT	.6 3	2¾	$11.22
R-22B*	380/320 CT	70	...	...	6.3 6.3 CT	.6 3	2¾	12.03
R-4A	500 CT	40	...	...	6.3 CT	2	1¾	9.02
R-4B	500 CT	40	...	...	6.3 CT	2	1¾	8.23
R-5A*	600 CT	65	...	...	6.3 CT	2.7	2¾	10.53
R-5B*	600 CT	65	...	...	6.3 CT	2.7	2¾	11.40
R-6A	480 CT	50	5	2	6.3 CT	2	2¾	10.42
R-7A*	600 CT	50	5	2	6.3 CT	2	2¾	10.93
R-7B*	600 CT	50	5	2	6.3 CT	2	2¾	11.40
R-8A	500 CT	75	5	2	6.3 CT	2.5	3	12.58
R-8B	500 CT	75	5	2	6.3 CT	2.5	3	12.53
R-9A	600 CT	75	5	2	6.3 CT	3	3½	14.45
R-10A	525 CT	90	5	2	6.3 CT	5	4½	13.82
R-11A	700 CT	90	5	3	6.3 CT	3.5	4¼	14.45
R-11B	700 CT	90	5	3	6.3 CT	3.5	4¼	15.45
R-12A	550 CT	110	5	2	6.3 CT	5	4½	14.72
R-14A	700 CT	125	5	3	6.3 CT	4.5	6	17.15
R-14B	700 CT	125	5	3	6.3 CT	4.5	6	18.57
R-16A	700 CT	160	5	3	6.3 CT	5	7	20.20
R-17A	750 CT 80 Tap	160	5	3	6.3 CT 2.5 CT	5 5	7¼	23.25
R-18A	750 CT	175	5	3	6.3 CT	8	8½	20.25
R-18B	750 CT	175	5	3	6.3 CT	8	8½	20.00
R-19A	750 CT 80 Tap	200	5	3	6.3 CT 2.5 CT	6 10	9½	20.63
R-20A	700 CT	200	5	3	6.3 CT	8	9¼	22.48
R-20B	700 CT	200	5	3	6.3 CT	8	9¼	18.63
R-72A*	800 CT	140	5	3	6.3 CT	4	5¾	18.22
R-21B	800 CT	200	5	3	6.3 CT	6	9¼	24.47
R-24A*	800 CT	300	5	6	6.3 CT	6	14	31.13
R-24B*	800 CT	300	5	6	6.3 CT	6	14	31.13
R-25A	800 CT	500	5	6	6.3 CT 6.3	7 3	19	44.58
R-58A	875 CT	185	5	3	6.3 6.3	3 4	9½	23.07
R-71A*	900 CT	250	5	4	6.3 CT 6.3	2 4	12	26.52
R-94H*	180/177	500	6.3	5.5	6.3	5.5	17	32.78

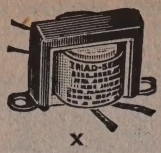
*60 Hz.

★SEE ANOTHER PAGE FOR QUANTITY DISCOUNTS

Note: Last letter(s) of Triad No. indicates case style. See table on another page for case sizes not listed hereon.

Special Transformers

A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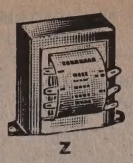
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HS & HSM

MODULATION TRANSFORMERS, TUBE TO RF LOAD

Triad No.	Primary Imped.†	Secondary Imped.†	Secondary mA	Audio Watts	Size, Inches H. x W. x D.	Net Each*
TY-65Z	32 CT (575 mA) Xsistor use	3K/4K/6K	100	10	2 5/16 x2 7/8x2	$ 5.60
M-4Z	5000 Autoformer	6750/4	100 Total	10	1 15/16x2 3/8x1 5/8	4.50
M-1X	10000 CT (5 mA)‡	5000/8000/10000	50	5	1 3/16 x2 1/16x1 1/4	4.35
M-3X	10000 CT (10 mA)‡	3000/5000/8000	100	20	2 9/32x3 11/16x2	7.25
M-6X	10000 CT (10 mA)‡	3K/5K/8K/4	100	20	2 9/32x3 11/16x2	5.72
TY-66A	6 CT (5 A) Xsistor use	3K/4K/6K	200	40	3 7/8 x3 9/32x3 5/8	11.03
M-7AL*	4250 CT	3000/5000/8000	200	60	4 1/4x3 19/32x3 7/8	13.05
M-15A	4000–20000 Universal	4000 to 20000	150	30	3 1/2x2 31/32x3 1/4	9.77

*Plate leads outside of case. †Ohms. ‡Unbalanced.

AUTO RADIO TRANSISTOR TRANSFORMERS

Triad No.	Imped., Ω Pri.	Imped., Ω Sec.	Pri. mADC	Pwr. W	Size, Inches H. x W. x D.	Mtg. Ctr., In.	Net Each*
TY-1XT*	1K	40	10	2	1 11/16x2x1 3/8	1 3/32x1 7/16	$4.43
TY-2Z†	30 CT	4	50#	10	2 5/16x2 7/8x1 3/4	2 3/8 holes	4.52
TY-3XT†‡	9 tap at 4		920	10	1 15/16x3 1/4x1 3/4	1 7/8x1 3/16	3.93

*Interstage. †Output. ‡Autoformer. #Per side.

FILTER CHOKES

Test Voltage, 1000 V rms. Size, 1 3/16" h. x 2 1/16" w. x 1 1/4" d. Mtg. Ctrs., 1 3/4" holes on 1 1/4" x 7/16".
Triad No. TY-16XT—3 mH at 1 A. Net Each **$2.40***
Triad No. TY-17XT—11 mH at 1 A. Net Each **2.40***

SIGNALLING TRANSFORMERS

Triad No.	Primary Volts	Secondary Volts, AC	Amps	Size, Inches H. x W. x D.	Net Each*
F-102X	115 60 Hz	4/8/12/16/20/24	2	2 9/32x3 11/16x2 1/2	$ 5.95
F-104U	115 60 Hz	4/8/12/16/20/24	4	3 1/2x2 7/8 x2 1/16	11.95

CONTROL TRANSFORMERS

Multiple usage with relays, solenoids, electronic tubes, recording devices and similar applications. All use 115/230 VAC, 50/60 Hz and have lug type connections.

Triad No.	Secondary Parallel	Secondary Series	VA Rating	Size, Inches H.	Size, Inches Base	Net Each*
F-105Z	6 V at 2A	12 V at 1A	12	2 3/8	2 7/8x1 3/4	$ 5.80
F-106Z	6 V at 4A	12 V at 2A	24	2 3/4	3 1/8x2	6.70
F-107Z	12 V at 4A	24 V at 2A	48	3 1/8	3 5/8x2 3/8	7.80
F-108U	12 V at 8A	24 V at 4A	96	3 1/2	2 7/8x3	13.63
F-109U	12 V at 16A	24 V at 8A	192	4 1/8	3 3/4x3 1/2	25.57

UNIVERSAL ISOLATING AUTOFORMERS

For 50/60 Hz voltage control use.

Triad No.	Output Watts (VA) Isolation	Output Watts (VA) Auto-former	rms Test Voltage	Size, Inches H. x W. x D.	Net Each*
N-64AC	500	1000	1500	5 1/16x4 1/2x4 7/8	$ 43.78
N-62AC	1000	2000	1500	6 1/2x5 1/2x6	86.17
N-60SC	2000	4000	2500	4 3/4x8 1/2x13 1/2	174.43

LOW VOLTAGE RECTIFIER TRANSFORMERS

All use 115 volt tapped primary. Used to supply transistor DC voltage, 15 half wave or 30 in bridge circuit.

Triad No.	Secondary Volts	Secondary Amps	Test Voltage	Size, Inches H. x W. x D.	Net Each*
F-94X	10-20 CT-40 CT	.035	1500	1 3/8 x2 3/8 x1 3/8	$4.97
F-90X	10-20 CT-40 CT	.1	1500	1 5/8 x2 13/16x1 5/8	5.03
F-91X	10-20 CT-40 CT	.3	1500	2 9/32 x3 11/16x2	6.08
F-93X	10-20 CT-40 CT	.75	1500	2 19/32x4 x2 1/4	7.75
F-92A	10-20 CT-40 CT	1	1500	3 3/16 x2 31/32x3	10.32

CHOPPER INPUT GEOFORMERS

Adjusted at 60 Hz; high Z and untuned windings for frequency of 30–500 Hz, Static shield.

Triad No.	Impedance, Ohms Primary	Impedance, Ohms Secondary	Turns Ratio‡	Max. Pri. Volts	Case Key*	Net Each*
G-20	10,000 CT-2,500	640,000 CT	1:8	25	GP-4T	$40.50
G-21	200,000 CT	12,500 CT	4:1	84	GP-2L	36.43
G-21TS	200,000 CT	12,500 CT	4:1	84	GP-4T	41.77
G-22	50,000 CT	800,000 CT	1:4	90	GP-5W	41.17
G-22H	50,000 CT	800,000 CT	1:4	90	GP-3R	27.92
G-23	40,000 CT	1,000 CT	6.32:1	75	GP-2L	33.72
G-24	40,000 CT	40,000 CT	1:1	19.5	GP-5S	46.73
G-25	40,000 CT-10,000 CT	10,000 CT	2:1	70	GP-2L	34.97
G-25TS	40,000 CT-10,000 CT	10,000 CT	2:1	70	GP-4T	41.27

‡Full primary to full secondary. •See case size table elsewhere.

HERMETICALLY SEALED MIL-T-27B TRANSFORMERS

FILAMENT TRANSFORMERS, 380–1500 Hz

Triad No.	Primary Volts	Secondary Volts	Secondary Amperes	rms Test Voltage	Case Key*	Net Each*
HS-436	115	6.3 CT	1	1500	AH	$16.17
HS-425	105-115-125	6.3 CT	2	1500	AJ-2	22.50
HS-427	105-115-125	6.3 CT	5	500 2500	EA	29.22
HS-445	105-115-125	12.6 CT	3	2500	EA	30.17
HS-438	105-115-125	24 CT	1.5	1500	EA	28.40
HS-433	105-115-125	6.3 CT* 6.3*	5 5	1500 2500	FA	32.17
HS-435	105-115-125	6.3 CT* 6.3* 6.3/5†	3.5 3.5 3	2000	FA	27.58
HS-441	105-115-125	5 CT* 5* 2.5 CT	10 10 10	2000 7500	HA	48.12
HS-443	105-115-125	12.6 CT* 12.6*	.8 .8	1500	AJ-2	22.98
HS-442‡	57.5-99.7-115-120	12.6 CT* 12.6*	2 2	1500	EA	30.78
HS-444‡	57.5-99.7-115-120	26 CT* 26 CT*	2 2	2000	FA	33.15
F-439U	115	26	3.85	2000	Spl.	15.22
HS-440	105-115-125	32	1.5	1500	EA	29.95

*Windings may be connected in series or parallel. †Tapped for 5 V rectifier use. ‡For Scott conn. •See case size table elsewhere.

ISOLATION TRANSFORMERS
Primary 115 V—380–1500 Hz

All types are electrostatically shielded.

Triad No.	VA Output	Secondary Amps	Output, Volts	Case Key*	Net Each*
HS-470	40	.35	115	EA	$25.15
HS-471	80	.7	115	FA	28.63
HS-472	160	1.39	115	GA	24.72
HS-474	300	2.6	115	JA	43.80
HS-475	505	4.4	115	KA	49.70

•See case size table elsewhere.

BOX SHIELDED ISOLATION TRANSFORMERS
Primary 115 V—50–60 Hz

Epoxy potted with leads.

Triad No.	Secondary Voltage	Secondary Current	VA	rms Test Volts	Case Key*	Net Each*
HC-115	115	1 A	115	1000	KA	$53.20

ISOLATION TRANSFORMERS
Primary 115/230 V—50–60 Hz

Triad No.	VA Output	Secondary Amps	Output, Volts	Case Key*	Net Each*
HSM-271	125	1	105/115/125	KA	$39.12

HERMETICALLY SEALED FILTER REACTORS

Meet inductance tolerances of +50%, −20%.

Triad No.	Cur., mADC	Induct., Henries	Resist., Ohms	rms Test Volts	Case Key*	Net Each*
HSM-301	20	30	1000	1500	EB	$29.08
HSM-302	20	14	560	1500	AJ	13.43
HS-331	40	4	375	1500	AH-2	12.92
HS-303	50	12	385	1500	EB	15.65
HS-333	70	3	225	1500	AJ-2	11.52
HSM-305	70	15	300	2500	GB	23.35
HS-335	120	3	150	1500	EB	19.58
HSM-307	120	15	185	2500	JB	31.25
HS-339	200	3	105	2000	FB	22.73
HSM-315	200	10	100	2500	JA	32.53
HS-341	300	2	48	2000	GB	24.47
HSM-319	300	10	85	2500	LA	36.58

•See case size table elsewhere.

★ QUANTITY DISCOUNTS

1–9, Net; 10–24, 10%; 25–49, 19%; 50–99, 25%; 100–249, 28¾%; 250 up, 32½%.

Special Transformers, Filters

A B X M

INSTRUMENT POWER SUPPLY TRANSFORMERS PRIMARY 115 VOLTS,* FOR PREAMPS, VTVM, ETC.

Triad No.‡	Plate Supply AC Volts	Plate Supply mA DC	Filament Windings Volts and Amps	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each*
R-68A	800 CT	30	5v.-2a., 6.3†-1.2a., 6.3†-1.2 a.	3⅛ x2²¹/₃₂x3⅛	3	$13.40
R-23B	250 CT	22	6.3 v.-.8 a. 15.5/12.6 v.-.6 a.	1⅞ x2⅝ x2⅛	1¾	9.17
R-2C	135	15	6.3 v.-.9 a.	1¾ x1⅞ x1⁹/₁₆	1	8.32
R-3A	500 CT	20	6.3 CT-2 a.	2²⁵/₃₂x2¹¹/₃₂x2½	1¾	9.63
R-29A	230 CT	40	6.3 CT-1.5 a.	2²⁵/₃₂x2¹¹/₃₂x2⅜	1¾	8.12
R-30X	135	50	6.3 v.-1.5 a.	2⁹/₃₂ x3¾ x2⅛	1½	7.50
R-54X	115	15	6.3 v.-.6 a.	1⅝ x2¹³/₁₆x1⅝	1	4.88
R-56A	130	20	0/15/22.5/30-.6 a.	2¹⁵/₃₂x2¹¹/₃₂x2¾	2	8.78
R-73B	135	200	6.3 CT-5.5 a.	1⅞ x3⅜ x2¹³/₁₆	2¾	12.55

*50-60 Hz (R-73B, 60 Hz). †Series or parallel. ‡Static shield.

FOR CATHODE RAY TUBES (115 V 50-60 Hz)

Triad No.	Plate Supply AC Volts	Plate Supply mA DC	Filament Windings Volts and Amps	Case Size, Inches H. x W. x D.	Net Each*
R-41C	440-0-440-1250	125/5	5 v.-3 a., 2.5 v.†-1.75 a., 2.5 v.†-1.75a., 6.3 v.-.6 a.	3¼x4¾x x3½	$24.48
R-45C	400-0-400-800	30/5	5 v.†-2 a., 5 v.†-2 a., 6.3 v.-.6 a., 6.3 CT-3 a., 6.3 v.-1 a.	2⅝x3¾ x3⅛	22.12
R-43C	1600	3	6.3/5/2.5/0 v.-1 a. 6.3/5/2.5/0 v.-3 a.	2⅜x3⅛ x2²/₁₆	16.77
R-83A*	800 CT	70	6.3 CT-3.5 a.	3¹⁵/₁₆ x 2³¹/₃₂ x	23.52
R-84K	650	3	6.3-.6 a., 1.25‡-.3 a.	3¾ 2¾x2¼ x2¾	13.03

*60 Hz operation. †Windings may be connected in series or parallel. ‡2-ohm resistor (2 W) in series with filament when 1V2 is used. §rms.

FOR REGULATED POWER SUPPLIES

All have static shield; 115 volts, 50-60 Hz.

Triad No.	Plate Supply AC Volts	Plate Supply mA DC	Filament Windings Volts and Amps	Case Size, Inches H. x W. x D.	Net Each*
R-70A	880†	75	6.3 v.-.6 a., 6.3 v.-.9 a., 6.3 v.-.3 a., 6.3 v.-3 a.	3¹⁵/₁₆x3⁹/₃₂x3⅜	$20.17
R-26A	880-720†	200	6.3†-8 a., 6.3 v.-3 a., 6.3 v.-1 a., 5 v.-3 a.	4⅝x3¹⁵/₁₆x4⅝	34.57
R-28A	1250†	300	6.3†-8 a., 6.3 v.‡-3 a., 6.3 v.‡-3 a., 5 v.-6 a.	5⁵/₁₆x4½ x5⅝	40.08
R-46A	1250†	350	5 v.-4 a., 6.3 v.-4 a.,	5⁵/₁₆x4½ x5⅝	35.78
R-27A	130* 1500†	50 400	6.3v.‡-1a.,6.3v.‡-1a. 5 v.-6 a., 6.3 v.-3 a., 6.3 v.-.8 a.	5⁵/₁₆x4½ x7⅛	47.53

*For bias using sel. rect.; supplies 550 v. DC using 2-5R4GY rect. tubes, choke input, filament windings regulate screen voltages. †Center tapped. ‡Windings may be connected in series or parallel.

ISOLATION TRANSFORMERS—50-60 Hz

Triad No.	VA Output	Input Volts	Output Volts	Case Size, In. H. x W. x D.	Net Each*
N-48X	15	115	115	1¹⁵/₁₆ x 3⅜ x 2	$ 5.03
N-51X†	35	115	115	2³/₃₂ x 3¹¹/₁₆ x 2⅛	6.22
N-68X	50	115/230‡	115	2³/₃₂ x 3¹¹/₁₆ x 2⅛	8.03
N-53M	85	115	115	3¹³/₃₂ x 2³¹/₃₂ x 3⅝	14.65
N-54M	150	115	115	3⅞ x 3⅜ x 4¼	18.57
N-73A	150	115	115/230‡	3⅞ x 3⅜ x 4	15.55
N-74A	150	115	57.5/115‡	3⅞ x 3⅜ x 4	15.40
N-67A	150	115/230‡	115	3⅞ x 3⅜ x 4⅛	15.40
N-55M♯	250	115	115	4⅝ x 3¹⁵/₁₆ x 5	32.22
N-66A	250	115/230‡	115	4⅝ x 3¹⁵/₁₆ x 4⅝	24.93
N-57M♯	500	115	115	5⁵/₁₆ x 4½ x 6¼	71.28
N-59M♯	1000	115	115	5⁵/₁₆ x 4½ x 8	77.00
N-52M*	350	95–130§	115	4⅝ x 3¹⁵/₁₆ x 7¾	91.35
N-469A†	50	220/440‡	115	3³/₁₆ x 2²¹/₃₂ x 2½	9.07
N-470A†	150	220/440‡	115	3⅞ x 3⅜ x 3⅝	13.92
N-471A†	300	220/440‡	115	4⅝ x 3¹⁵/₁₆ x 4⅜	23.95

*With cord, switch and meter for primary voltage control. †60 Hz. ‡Split winding. §5-volt steps. ♯Also available with 3-wire cord, plug, socket and 230 volt primary (MG).

"SPLATTER" CHOKES

Triad No.	Inductance, Henries	Cur., mA	Res., Ohms	Size, Inches H. x W. x D.	Net Each*
C-26X	.2 to 1.5*	100	95	1¹³/₁₆ x 3⅝ x 2	$4.15

*Tapped; inductance tolerance, −20% +50%.

Note: Last letter(s) of Triad No. indicates case style.

★QUANTITY DISCOUNTS

1-9, Net; 10-24, 10%; 25-49, 19%; 50-99, 25%; 100-249, 28¾%; 250 up, 32½%.

STEPDOWN AUTOFORMERS—50-60 Hz

Triad No.	VA Output	Input Volts	Output Volts	Size, Inches H. x W. x D.	Net Each*
N-1X	50	230	115	2⁹/₃₂ x 3¹¹/₁₆x 2	$ 5.05
N-3M	85	230	115	3¹⁹/₃₂x 2³¹/₃₂x 2⅞	11.80
N-4M	150	230	115	3¹⁹/₃₂x 2³¹/₃₂x 3⅝	13.83
N-5M§	250	230	115	3⅞ x 3⅝ x 4¼	18.10
N-7M§	600	230	115	4⅝ x 3¹⁵/₁₆x 5	31.75
N-9M§	1250	230	115	5⁵/₁₆ x 4½ x 6¼	68.97
N-11M	2000	230	115	5⁵/₁₆ x 4½ x 8	78.98
N-34X	150	0/95/105/115/125/135	115	2¹⁹/₃₂x 4 x 2¼	8.17
N-35M*	250	95–130‡	115	4¼ x 3¹⁹/₃₂x 5	29.05

*M case with switch for primary voltage control; detachable cord. †With switch and meter for primary voltage control; detachable cord. ‡5-volt steps. §Also available with 3-wire cord, plug and socket (MG).

DC TO DC CONVERTER TRANSFORMERS

For use in blocking oscillator type power supplies where small size, high voltage and low power are required.

Triad No.	Typical Operation Input	Typical Operation Output	Net Each*
TY-200X	3 VDC at 20 mA	1050 VDC at 25 μA	$9.37
TY-201TZ	4 VDC at 15 mA	500 VDC at 50 μA	6.55
TY-202X	4 VDC at 45 mA	550 VDC at 80 μA	7.08

VOLTAGE STABILIZERS

Input: 95–130 v. 60 Hz. Output: 117 v., 118 v. normal harmonic.

Triad No. K-100—30 VA. Net Each	$ 41.55
Triad No. K-101—60 VA. Net Each	55.77
Triad No. K-102—120 VA. Net Each	70.00
Triad No. K-103—250 VA. Net Each	97.05
Triad No. K-104—500 VA. Net Each	138.67
Triad No. K-105—750 VA. Net Each	178.47
Triad No. K-106—1000 VA. Net Each	230.57

400 Hz FILTERS—SOURCE IMP., 10K-OHM

No.	Application	Load Imp.	Case Key*	Net Ea.*
FL-381	Bandpass	1 Meg	GP-4	$47.43
FL-389	Band rej.	10 kΩ	EA	44.63

*See case size table listed elsewhere in this section.

MINIATURE BANDPASS FILTERS (EPOXY MOLDED)

Source and load imp., 47 kΩ. Insertion loss, less than 3 dB at f_o. Attenuation (f_o ±15%): Less than 1 dB, pass band; over 20 dB, below .15 x f_o; over 30 dB, above 2 x f_o. 1.562" x 1.375" x .75" h.

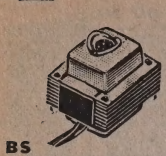
Triad No.	IRIG Chan. No.	Center Freq., f_o	Net Each*	Triad No.	IRIG Chan. No.	Center Freq., f_o	Net Each*
FL-384	A	22 kHz	$67.23	FL-387	D	52.5 kHz	$66.33
FL-385	B	30 kHz	66.33	FL-388	E	70 kHz	68.77
FL-386	C	40 kHz	66.33				

SMOOTHING FILTER REACTORS

Triad No.	Induct., Henries*	Current mADC	Resist., Ohms	Size, Inches H. x W. x D.	Net Each*
C-30X	50	15	3500	1⅜ x2⅜ x1½	$ 3.65
C-2X	2	15	70	1³/₁₆ x2¹/₁₆ x1¼	2.70
C-1X	15	20	1000	1³/₁₆ x2¹/₁₆ x1¼	2.90
C-3X	10	50	500	1⅝ x2¹³/₁₆x1½	3.38
C-4X	4	50	360	1⅜ x2⅜ x1⅜	2.93
C-6X	5	65	330	1⅝ x2¹³/₁₆x1½	3.38
C-5X	12	75	390	1¹⁵/₁₆x3⅝ x1¾	4.08
C-8X	7	75	240	1¹⁵/₁₆x3⅝ x1¾	3.93
C-7X	10	90	270	1¹⁵/₁₆x3⅝ x2	4.42
C-9X	4	90	100	1¹⁵/₁₆x3⅝ x1¾	3.90
C-11X	6	110	160	2³/₃₂ x3¹¹/₁₆x2	5.38
C-10X	9	125	250	2³/₃₂ x3¹¹/₁₆x2	5.33
C-12X	6	160	165	2³/₃₂ x3¹¹/₁₆x2⅛	5.52
C-12A	6	160	165	2²⁵/₃₂x2¹¹/₃₂x2½	7.82
C-13X	3	160	75	2³/₃₂ x3¹¹/₁₆x2⅛	5.18
C-14X	6	200	150	2¹⁹/₃₂x4 x2¼	6.30
C-14A	6	200	150	3³/₁₆ x2²¹/₃₂x2⅝	8.73
C-16A	10	200	150	3½ x2³¹/₃₂x3½	11.45
C-21X	1.5	225	65	1¹⁵/₁₆x3⅝ x1¾	3.80
C-15X	4	250	100	2¹⁹/₃₂x4 x2¼	6.13
C-15A	4	250	100	3³/₁₆ x2²¹/₃₂x2⅝	8.43
C-23X	1.2	260	45	1¹⁵/₁₆x3⅝ x2	4.58
C-24X	1	240	50	1⅝ x2¹³/₁₆x1½	3.23
C-27X	.7	290	30	1⅝ x2¹³/₁₆x1½	3.05
C-36X	.5	300	30	1⅜ x2⅜ x1½	2.85
C-17X	1.5	300	40	2³/₃₂ x3¹¹/₁₆x2	4.67
C-18A	8	300	90	3⅞ x3⁹/₃₂ x3⅞	13.78
C-19A	10	300	105	4¼ x3¹⁹/₃₂x4⅛	17.67
C-25A	2.6	310	44	3³/₁₆ x2²¹/₃₂x3⅛	8.98
C-34X	.6	350	35	1⅝ x2¹³/₁₆x1½	2.93
C-28X	1	350	35	1¹⁵/₁₆x3⅝ x2	4.07
C-29X	1.5	375	50	2³/₃₂ x3¹¹/₁₆x2	4.80
C-20A	6	400	60	4⅝ x3¹⁵/₁₆x4½	20.45
C-22A	10	500	65	5⁵/₁₆ x4½ x5⅛	34.83
C-45AL	10	500	65	5⁵/₁₆ x4½ x5⅛	36.77
C-40X	.32	600	10	1¹⁵/₁₆x3⅝ x2	4.07
C-47U	.3/.075†	1A/2A	3/0.75	3½ x2⅞ x3³/₁₆	10.97
C-56U	.035	2.0	.75	2¼ x2⅝ x2	6.67
C-48U	.08/.02†	2.5A/5A	.61/.155	3¹³/₁₆x3³/₁₆ x3³/₁₆	14.12
C-57U	.025	4.0	.55	3⅛ x3⅜ x2¼	8.53
C-49U	.032/.008†	5A/10A	.19/.05	4¼ x3½ x3⅝	20.53
C-58U	.01	8.0	.15	3⅛ x3¾ x3	12.70
C-59U	.01	12.5	.10	3½ x4⅛ x3	15.32
C-80U	.024/.006†	20A/40A	.1/.025	5⁵/₁₆ x4⅝ x5½	57.90
C-60U	.005	22.5	.06	3¾ x4½ x4⅝	25.45

*Inductance tolerance, −20% +50%. †Split winding.

Power and Pulse Transformers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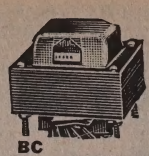
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A

SPECIAL POWER TRANSFORMERS

Multiple filament industrial and TV replacement type. Static shield. Pri. 115 V, 50–60 Hz except R-66BC thru R-675A, 60 Hz.

Triad No.	Plate Supply AC Volts	Plate Supply mA DC	Filaments Volts-Amps	Size, Inches H. x W. x D.	Net Each*
R-38BC	750 CT	225	5-3A, 6.3-10A, 6.3-2.5A, 6.3-1.2A*	3⅜ x4½ x3¾	$25.67
R-39BC	640 CT	225	5-3A., 6.3-10A., 6.3-1.2A.*	3⅜ x4½ x3¾	25.48
R-40BC	780 CT/ 440 CT	300	5-3A., 5-3A., 5-2A., 6.3-8.5A., 6.3-3.5A.	3⅞ x4½ x3¾	34.85
R-42BC	675 CT	185	5-3A., 6.3-7A., 6.3-2A.*	2½ x4½ x3¾	22.53
R-49BC	650 CT	240	5-3A., 6.3-9A., 6.3-.9A., 6.3-1.2A.*	3⅝ x4½ x3¾	24.73
R-49BS	650 CT	240	As above	3⅝ x4½ x3¾	32.60
R-50BC	790 CT/ 650 CT	310	5-3A., 5-2A., 5-3A., 6.3-5A.†, 6.3-5A.† 6.3-2.6A	4⅛ x4½ x3¾	30.90
R-50A	790 CT/ 650 CT	310	As above	4⅝ x3¹⁵⁄₁₆x5½	32.73
R-51BC	505 CT	320	5-6A., 6.3-5A.†, 6.3-5A.†, 6.3-1.2A.*	3⅛ x4½ x3¾	23.95
R-52BC	600 CT	270	As above‡	3⅛ x4½ x3¾	21.53
R-60BC	460 CT	300	5-6A., 6.3-10A., 6.3-2.5A., 6.3-1.2A.*	3⅜ x4½ x3¾	22.02
R-61BC	560 CT	300	5-6A., 6.3-6A.†, 6.3-6A.†, 6.3-1.2A.*	3⅞ x4½ x3¾	24.07
R-62BC	680 CT	290	Same as R-60BC	4⅝ x4½ x3¾	35.68
R-64BC	520 CT	270	5-3A., 6.3-10A.	2⅝ x4½ x3¾	22.90
R-66BC	580 CT	270	5-3A., 6.3-10A.	2⅞ x4½ x3¾	20.07
R-67BC	600 CT	250	5-3A., 6.3-9A.	3⅛ x4½ x3⁷⁄₁₆	20.28
R-69BC	550 CT	270	5-3A., 6.3-10A.	3⅛ x4½ x3⁷⁄₁₆	26.18
R-74BC	680 CT	190	5-3A., 6.3-7.8A., 6.3-1.2A.*	3⅝ x4½ x3¾	22.58
R-76BC	650 CT	350	5-6A., 6.3-8A.†, 6.3-5A.†, 6.3-2A.*	3⅞ x4½ x3¾	35.02
R-77BC	550 CT	350	5CT-6A., 6.3-8A., 6.3-6A., 6.3-2A.*	3⅜ x4½ x3¾	21.88
R-77BS	550 CT	350	Same as above	3⅞ x4½ x3¾	39.82
R-78BC	700 CT	200	5-3A., 6.3-6A., 6.3-4A., 6.3-2A.*	2⅝ x4½ x3¾	20.15
R-81BC	590 CT	350	5-6A., 6.3-8A., 6.3-5A., 6.3-2A.*	3⅝ x4½ x3¾	30.55
R-81BS	590 CT	350	Same as above	3⅝ x4½ x3¾	40.30
R-675A	660 CT	270	5-6A., 6.3-9.35A., 6.3-1.2A.*	4⅝ x3¹⁵⁄₁₆x4¾	25.85

*Damper wdg. †For series or parallel connection. ‡Except 5 V at 3 A.

LOW-VOLTAGE, LOW-CURRENT, PLUG-IN PRINTED CIRCUIT POWER TRANSFORMERS

Primary 115 volts, 50/60 Hz.

Triad No.	Output Watts	Secondary Series Conn.	Secondary Parallel Conn.	Net Each*
F-131P	1½	8 V CT at .188 A	4 V at .376 A	$5.00
F-132P	1½	15 V CT at .100 A	7.5 V at .200 A	5.12
F-133P	1½	30 V CT at .050 A	15 V at .100 A	5.23
F-134P	1½	54 V CT at .028 A	27 V at .056 A	5.67
F-135P	1½	76 V CT at .020 A	38 V at .040 A	6.02
F-136P	1½	116 V CT at .013 A	58 V at .026 A	6.60
F-137P	1½	40 V CT at .038 A	20 V at .076 A	5.85
F-141XP	4½	8 V CT at .562 A	4.0 V at 1.124 A	4.77
F-142XP	4½	15 V CT at .300 A	7.5 V at .600 A	4.88
F-143XP	4½	30 V CT at .150 A	15 V at .300 A	5.03
F-144XP	4½	54 V CT at .084 A	27 V at .168 A	5.17
F-145XP	4½	76 V CT at .060 A	38 V at .120 A	5.25
F-146XP	4½	116 V CT at .033 A	58 V at .066 A	5.67
F-147XP	4½	40 V CT at .112 A	20 V at .224 A	5.42
F-151XP	7½	8 V CT at .940 A	4 V at 1.880 A	5.00
F-152XP	7½	15 V CT at .940 A	7.5 V at 1.000 A	5.57
F-153XP	7½	30 V CT at .250 A	15 V at .500 A	5.18
F-154XP	7½	54 V CT at .140 A	27 V at .280 A	5.22
F-155XP	7½	76 V CT at 1.00 A	38 V at .200 A	5.45
F-156XP	7½	116 V CT at .065 A	58 V at .130 A	5.60
F-157XP	7½	40 V CT at .188 A	20 V at .376 A	5.60

SCR TRIGGER—PHOTOFLASH TRANSFORMERS

Triad No.	Turns Ratio	Inductance Primary	Inductance Leakage	Output Volts or Volt/μsec	Net Each*
PL-10	1:30	2 μH	1 μH	6–8 kV	$2.08
PL-11	1:30	15 μH	1.5 μH	10–12 kV	2.20
PL-20	1:1	200 μH	8 μH	2000 V/μsec	3.80
PL-21	1:1:1	200 μH	8 μH	2000 V/μsec	3.92
PL-22	2:1:1	200 μH	15 μH	2000 V/μsec	4.53
PL-30	1:1:1	7.5 μH	90 μH	130 V/μsec	5.95
PL-31	1:1	7.5 μH	90 μH	130 V/μsec	5.97
PL-32	2:1	7.5 μH	100 μH	130 V/μsec	5.97
PL-33	2:1:1	7.5 μH	100 μH	130 V/μsec	6.10
PL-34	5:1	7.5 μH	115 μH	130 V/μsec	5.97

★SEE ANOTHER PAGE FOR QUANTITY DISCOUNTS.

UNIVERSAL RECTIFIER TRANSFORMERS (PRI. 50-60 Hz)

Triad No.	Pri. Volts	Secondary AC Volts	Secondary Amps rms	DC Volts Half Wave	DC Volts Full Wave	Case Size, Inches H. x W. x D.	Net Each*
F-47U	115	17-18	3	6-7	13-14	3⅛ x2⁹⁄₁₆ x3	$ 9.93
F-48U	115	17-18	6	6-7	13-14	3¹³⁄₁₆x3⅛ x3⅛	14.15
F-49U	115	36† 36†	3 3	13 13	26 26	4⅝ x3¹³⁄₁₆x3¾	23.08
F-60U	115	6.5-13-19.5-26	3	9	18	3½ x2⅞x2¹¹⁄₁₆	9.70
F-61U	115	24-27-30-33-36	3	13	26	3¹³⁄₁₆x3⅛ x3¼	14.78
F-67U‡	110-120	24-27-30-33-36	8	13	26	4⅝ x3¹³⁄₁₆x4⅝	27.80
F-63U	115	8-9† 8-9†	2 2	.....	6-7 6-7	3⅛ x2⁹⁄₁₆ x2⁹⁄₁₆	9.27
F-64U	115	7-8-9	7	.....	5–6–7	3½ x2⅞ x2¾	11.43
F-62U‡	105-115-125	9† 9† 9† 9†	10 10 10 10	.....	7 7 7 7	4⅝ x3¹³⁄₁₆x5¼	38.82
F-68U‡	115	9 CT† 9† 9† 9†	3.5 3.5 3.5 3.5	.....	7 7 7 7	3¹¹⁄₁₆x3¹⁄₁₆ x3¹⁄₁₆	15.20
F-65U	110-120	140-150-160	.75	60	115	3¹¹⁄₁₆x3¹⁄₁₆x 3⅜	14.45
F-74U	117	28 CT 28 CT	2 2	.....	.....	3¹³⁄₁₆x3¹³⁄₁₆x3¼	13.08
F-75U	117	28 CT 28 CT	4 4	.....	.....	4⅛ x3⅞ x4⅝	22.63
F-79U‡	115	24-26-28-30	15	11.4	22.8	3¹¹⁄₁₆x4⅝ x5½	41.83
F-80U‡	115*	12-13.5-15-16.5-18† 12-13.5-15-16.5-18†	20 20	.....	13 13	5⅜ x4⅛ x5½	71.62
F-86U	115	12 CT	10	.....	.....	3¾ x3⅛ x3½	14.30
F84AC‡	230-115§	12 CT† 12 CT†	10 10	.....	8.5 8.5	4⅝ x3¹³⁄₁₆x5⅛	34.52
F-85U	115*	5-7.5 5-7.5	20 20	.....	8–12.5	4½ x3¾ x4½	28.25
R94H‡	115	180-117 6.3-6.3	.5-.005 5.5-5.5	Dblr 470		3¹¹⁄₁₆x4⅝ x5½	32.78

*Tapped. †Windings in series or parallel. ‡60 Hz. §Split winding.

UNIVERSAL RECTIFIER POWER

Triad No.	Primary 50/60 Hz	Secondary No. 1 VAC	Secondary ADC CT†	Secondary ADC Bridge	Net Each*
F-200A	117 V	13/18 at .9 ADC*	.....	.....	$ 9.27
F-202U	117 V	11.0–29.5	2.0	1.25	9.22
F-203U	117 V	12.0–30.0	4.0	2.0	11.65
F-204U	117 V	11.5–29.0	8.0	4.0	17.18
F-205U	117 V	12.0–29.5	12.0	6.0	25.13
F-206U	117 V	12.1–29.2	15.0	8.0	36.58
F-207U	117 V	12.2–29.0	22.5	12.0	54.23

*Sec. No. 2, same. †Full wave.

SOLID STATE RECTIFIER POWER TRANSFORMERS

Pri., 117 V, 50/60 Hz. Fil. 2 and 3 are 6.3 V.

Triad No.	Sec. Volts	DC A	Fil. 2, 3	Net Each*	Triad No.	Sec. Volts	DC A	Fil. 2, 3	Net Each*
R-200A	400 CT	.4	3a	$19.98	R-82B	70 CT	3.5	.....	$23.23
R-201A	300 CT	.6	2.5a	19.77	R-204A	80 CT	2.0	1.5a	19.77
R-202A	200 CT	.8	2a	18.80	R-205A	60 CT	2.5	1.5a	18.80
R-203A	100 CT	1.6	1.5a	17.25	R-206B	54 CT	1.25	.....	20.05

●CASE SIZES FOR TRIAD TRANSFORMERS

Case Type	Dimensions, Inches A	B	C	D	E	G	I	Weight, Lbs.
AF	1¹¹⁄₁₆	1¹¹⁄₁₆*	1⁵⁄₁₆	2⁷⁄₁₆*	.....	.....	4-40	2½ oz.
AH	1⁵⁄₁₆	1⁵⁄₁₆	1¾	1¼	.....	¾	6-32	4 oz.
AJ	1⅝	1⅝	2⅜	1⅝	1⅛	⅜	6-32	9 oz.
AJ-2	1⅝	1⅝	2⅜	1⅝*	.....	.....	6-32	11 oz.
AH-2	1⅝	1⅝	1¾	1¹¹⁄₁₆*	.....	.....	6-32	5¼ oz.
EA	1¹³⁄₁₆	1¹³⁄₁₆	2¾	1⅜	1¼	⅜	6-32	1
EB	1¹³⁄₁₆	1¹³⁄₁₆	2¹³⁄₁₆	1⅜	1¼	⅜	6-32	15 oz.
FA	2¹⁄₁₆	2¹⁄₁₆	3⅛	1¹¹⁄₁₆	1⁷⁄₁₆	⅜	6-32	1¾
FB	2¹⁄₁₆	2¹⁄₁₆	2½	1¹¹⁄₁₆	1⁷⁄₁₆	⅜	6-32	1½
GA	2⅜	2¾	3¹⁵⁄₁₆	2⅛	1¾	⅜	6-32	2
GB	2⅜	2¾	2¹³⁄₁₆	2⅛	1¾	⅜	6-32	1¾
GP-2*	1¹⁄₁₆	1¼	2¼	1⁵⁄₁₆	.....	⅜	6-32	5½ oz.
GP-3*	1¼	1⁹⁄₁₆	2⅜	1¹⁵⁄₃₂	.....	⅜	6-32	8 oz.
GP-4*	1⁷⁄₁₆	1¾	2½	1½	.....	⅜	6-32	12 oz.
GP-5*	1⅝	2	2¾	1½	.....	⅜	6-32	17 oz.
GP-15*	5⅞	4¾	6⅜	4⅞	3¾	.....	.....	22
HA	2⅜	3¹⁄₁₆	4¼	2¹⁹⁄₆₄	1¹⁵⁄₆₄	⅜	8-32	2½
HB	2⅜	3¹⁄₁₆	3¹⁄₁₆	2¹⁹⁄₆₄	1¹⁵⁄₆₄	⅜	8-32	2¼
JA	3¹⁄₁₆	3¹⁄₁₆	4⅞	2⅜	2⅛	⅜	8-32	4½
JB	3¹⁄₁₆	3¹⁄₁₆	3⅞	2⅜	2⅛	⅜	8-32	4
JOA*	1⁵⁄₁₆‡	.....	1¹³⁄₃₂	9⁄₁₆	.....	.....	.....	2 oz.
JOB*	1⁵⁄₁₆‡	.....	1²⁵⁄₃₂	5⁄₁₆	.....	.....	.....	2½ oz.
JZ*	9⁄₁₆‡	.....	35⁄₃₂	.....	.....	.....	.....	.5 oz.
KA	3⅜	3¹⁵⁄₁₆	5¼	3	2⁷⁄₁₆	½	10-32	7¾
KB	3⅜	3¹⁵⁄₁₆	4⅝	3	2⁷⁄₁₆	½	10-32	7
LA	3¹¹⁄₁₆	4⅝	5⁹⁄₁₆	3⅝	2¹¹⁄₁₆	½	10-32	9¼
MA	4	4¹¹⁄₁₆	6	3¹⁄₁₆	3	⅝	¼-20	13½
NB	4⅝	5¹⁄₁₆	5½	4¹⁄₁₆	3⅝	⅝	¼-20	16

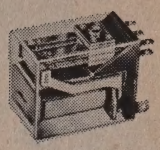
A—Width. **B**—Overall depth. **C**—Height. **D and E**—Center-to-center mounting studs. **G**—Stud length. **I**—Stud threading. *Not in conformance with MIL specifications. ‡Diameter.

CRADLE® SERIES RELAYS

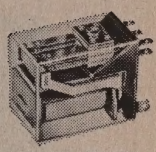
T154/T163 Cradle Series industrial relays with versatile mounting means including solder, PC board and socket options. Sensitivity selection to match applications ranging from 20 to 140 mW per pole. Contact selection to meet load switching requirements. UL recognized File #E-206041. Voltage relays adjusted for maximum pick-up at 75% of nominal voltage. Weight: 1 to 6 ozs.

VOLTAGE ADJUSTED DC RELAYS

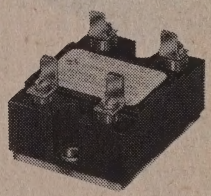
Allied Number		Coil				Net Each, Lots of			
Solder/ Plug-in	PC Mount	Input VDC	Resis. (Ohms)	Power (mW)	Contacts	1-9	10-49	50-99	100-499
STANDARD/SINGLE POINT 2 AMP CONTACTS									
T154-2C	TP154-2C	12	185	690	2PDT	$3.88	$3.49	$2.90	$2.71
T154-2C	TP154-2C	24	700	690	2PDT	3.88	3.49	2.90	2.71
T154-4C	TP154-4C	12	185	690	4PDT	4.30	3.81	3.22	3.01
T154-4C	TP154-4C	24	700	690	4PDT	4.30	3.81	3.22	3.01
T154-6C	TP154-6C	12	90	1400	6PDT	5.56	5.00	4.16	3.89
T154-6C	TP154-6C	24	430	1400	6PDT	5.56	5.00	4.16	3.89
T154-8C	TP154-8C	12	75	1900	8PDT	8.55	7.69	6.41	5.98
T154-8C	TP154-8C	24	430	1900	8PDT	8.55	7.69	6.41	5.98
STANDARD/SINGLE POINT 5 AMP CONTACTS									
TF154-2C	TFP154-2C	12	185	690	2PDT	$4.04	$3.63	$3.03	$2.82
TF154-2C	TFP154-2C	24	700	690	2PDT	4.04	3.63	3.03	2.82
TF154-4C	TFP154-4C	12	185	690	4PDT	4.56	4.11	3.42	3.20
TF154-4C	TFP154-4C	24	700	690	4PDT	4.56	4.11	3.42	3.20
TF154-6C	TFP154-6C	12	90	1400	6PDT	6.03	5.46	4.56	4.25
TF154-6C	TFP154-6C	24	430	1400	6PDT	6.03	5.46	4.56	4.25
TF154-8C	TFP154-8C	12	75	1900	8PDT	9.18	8.26	6.88	6.42
TF154-8C	TFP154-8C	24	430	1900	8PDT	9.18	8.26	6.88	6.42
SENSITIVE/SINGLE POINT 2 AMP CONTACTS									
TS154-2C	TSP154-2C	12	800	100	2PDT	$4.25	$3.82	$3.19	$2.97
TS154-2C	TSP154-2C	24	3200	100	2PDT	4.25	3.82	3.19	2.97
TS154-4C	TSP154-4C	12	430	175	4PDT	4.67	4.20	3.50	3.26
TS154-4C	TSP154-4C	24	1800	175	4PDT	4.67	4.20	3.50	3.26
TS154-6C	TSP154-6C	12	350	250	6PDT	6.03	5.46	4.56	4.25
TS154-6C	TSP154-6C	24	1275	250	6PDT	6.03	5.46	4.56	4.25
TS154-8C	TSP154-8C	12	190	400	8PDT	9.08	8.16	6.81	6.35
TS154-8C	TSP154-8C	24	800	400	8PDT	9.08	8.16	6.81	6.35
ULTRA/SENSITIVE-SINGLE POINT 1 AMP CONTACTS									
TSS154-2C	TSSP154-2C	24	7500	40	2PDT	$5.56	$5.00	$4.16	$3.89
TSS154-4C	TSSP154-4C	24	3700	80	4PDT	6.24	5.61	4.72	4.41
STANDARD/BIFURCATED 2 AMP CONTACTS									
T163-2C	TP163-2C	12	185	690	2PDT	$4.35	$3.91	$3.26	$3.04
T163-2C	TP163-2C	24	700	690	2PDT	4.35	3.91	3.26	3.04
T163-4C	TP163-4C	12	185	690	4PDT	4.88	4.38	3.66	3.41
T163-4C	TP163-4C	24	700	690	4PDT	4.88	4.38	3.66	3.41
T163-6C	TP163-6C	12	90	1400	6PDT	6.30	5.67	4.72	4.41
T163-6C	TP163-6C	24	430	1400	6PDT	6.30	5.67	4.72	4.41
T163-8C	TP163-8C	12	75	1900	8PDT	9.29	8.40	6.98	6.51
T163-8C	TP163-8C	24	430	1900	8PDT	9.29	8.40	6.98	6.51
SENSITIVE/BIFURCATED 2 AMP CONTACTS									
TS163-2C	TSP163-2C	12	800	100	2PDT	$4.67	$4.20	$3.50	$3.26
TS163-2C	TSP163-2C	24	3200	100	2PDT	4.67	4.20	3.50	3.26
TS163-4C	TSP163-4C	12	430	175	4PDT	5.26	4.72	3.93	3.67
TS163-4C	TSP163-4C	24	1800	175	4PDT	5.26	4.72	3.93	3.67
TS163-6C	TSP163-6C	12	350	250	6PDT	6.61	5.98	4.98	4.62
TS163-6C	TSP163-6C	24	1275	250	6PDT	6.61	5.98	4.98	4.62
TS163-8C	TSP163-8C	12	190	400	8PDT	9.81	8.87	7.40	6.87
TS163-8C	TSP163-8C	24	800	400	8PDT	9.81	8.87	7.40	6.87
ULTRA-SENSITIVE/BIFURCATED 2 AMP CONTACTS									
TSS163-2C	TSSP163-2C	24	7500	40	2PDT	$6.03	$5.46	$4.56	$4.25
TSS163-4C	TSSP163-4C	24	3700	80	4PDT	6.82	6.14	5.14	4.77



Series TF154 and T154



Series TS154



Series E3-

CURRENT ADJUSTED DC RELAYS

Allied Number		Coil				Net Each, Lots of			
Solder/ Plug-in	PC Mount	Input mADC	Resis. (Ohms)	Power (mW)	Contacts	1-9	10-49	50-99	100-499
SENSITIVE SINGLE POINT 2 AMP CONTACTS									
TS154-2C	TSP154-2C	5.8	2500	85	2PDT	$4.20	$3.78	$3.15	$2.94
TS154-2C	TSP154-2C	4.1	5000	85	2PDT	4.20	3.78	3.15	2.94
TS154-4C	TSP154-4C	8.4	2500	175	4PDT	4.62	4.20	3.46	3.25
TS154-4C	TSP154-4C	6.2	5000	175	4PDT	5.19	4.72	3.93	3.67
TS154-6C	TSP154-6C	10.0	2500	250	6PDT	5.98	5.38	4.51	4.20
TS154-6C	TSP154-6C	7.2	5000	250	6PDT	6.51	5.88	4.88	4.56
TS154-8C	TSP154-8C	13.0	2500	400	8PDT	9.03	8.13	6.77	6.35
TS154-8C	TSP154-8C	9.0	5000	400	8PDT	9.60	8.66	7.24	6.72
ULTRA-SENSITIVE/SINGLE POINT 2 AMP CONTACTS									
TSS154-2C	TSSP154-2C	4.1	2500	40	2PDT	$4.51	$4.09	$3.41	$3.15
TSS154-2C	TSSP154-2C	2.9	5000	40	2PDT	5.09	4.62	3.83	3.57
TSS154-4C	TSSP154-4C	5.8	2500	80	4PDT	5.61	5.09	4.25	3.93
TSS154-4C	TSSP154-4C	4.1	5000	80	4PDT	6.19	5.61	4.67	4.35
SENSITIVE/BIFURCATED 2 AMP CONTACTS									
TS163-2C	TSP163-2C	5.8	2500	85	2PDT	$4.62	$4.20	$3.46	$3.25
TS163-2C	TSP163-2C	4.1	5000	85	2PDT	5.19	4.72	3.93	3.67
TS163-4C	TSP163-4C	8.4	2500	175	4PDT	5.19	4.72	3.93	3.67
TS163-4C	TSP163-4C	6.2	5000	175	4PDT	5.72	5.14	4.30	4.04
TS163-6C	TSP163-6C	10.0	2500	250	6PDT	6.56	5.93	4.93	4.62
TS163-6C	TSP163-6C	7.2	5000	250	6PDT	7.14	6.45	5.35	5.04
TS163-8C	TSP163-8C	13.0	2500	400	8PDT	9.76	8.82	7.35	6.87
TS163-8C	TSP163-8C	9.0	5000	400	8PDT	10.29	9.29	7.71	7.24
ULTRA-SENSITIVE BIFURCATED 1 AMP CONTACTS									
TSS163-2C	TSSP163-2C	4.1	2500	40	2PDT	$4.93	$4.46	$3.72	$3.46
TSS163-2C	TSSP163-2C	2.9	5000	40	2PDT	5.51	4.93	4.14	3.88
TSS163-4C	TSSP163-4C	5.8	2500	80	4PDT	6.24	5.61	4.72	4.41
TSS163-4C	TSSP163-4C	4.1	5000	80	4PDT	6.77	6.09	5.09	4.72

SERIES E3 OPTO-ISOLATED, SOLID-STATE POWER RELAYS

All Series E3 power relays are designed for true zero voltage switching. Power is removed from and applied to the load at zero-current crossover. Units are guaranteed to withstand in-rush loads of 1000% of rated current. Tight-emitting diodes and photo detectors provide circuit isolation of 1560 VAC.

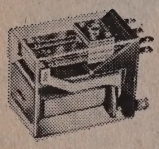
Allied Numbers Form A Contacts E3-	Form B Contacts E3-	Input Voltage Range	Net Each
10 AMP LOAD CURRENT			
10D-1A	10D-1B	3–32 DC	$24.75
10A-0A	10A-0B	20–28 AC	26.25
10A-4A	10A-4B	100–135 AC	26.25
25 AMP LOAD CURRENT			
25D-1A	25D-1B	3–32 DC	$33.38
25A-0A	25A-0B	20–28 AC	35.38
25A-4A	25A-4B	100–135 AC	35.38
40 AMP LOAD CURRENT			
40D-1A	40D-1B	3–32 DC	$47.12
40A-0A	40A-0B	20–28 AC	48.62
40A-4A	40A-4B	100–135 AC	48.62

CRADLE® SERIES LISTING CONTINUED ON FOLLOWING PAGE

CRADLE® SERIES (CONTINUED)

VOLTAGE ADJUSTED AC RELAYS

Allied Number		Coil				Net Each, Lots of			
Solder/ Plug-In	PC Mount	Input VAC	Resis. (Ohms)	Power (VA)	Contacts	1-9	10-49	50-99	100-499
STANDARD/SINGLE POINT 2 AMP CONTACTS									
T154-2C	TP154-2C	115	6000	1.3	2PDT	$4.77	$4.30	$3.62	$3.36
T154-4C	TP154-4C	115	6000	1.3	4PDT	5.46	4.93	4.09	3.83
STANDARD/SINGLE POINT 5 AMP CONTACTS									
TF154-2C	TFP154-2C	115	6000	1.3	2PDT	$4.93	$4.46	$3.72	$3.46
TF154-4C	TFP154-4C	115	6000	1.3	4PDT	5.67	5.14	4.25	3.99
STANDARD/BIFURCATED 2 AMP CONTACTS									
T163-2C	.....	115	6000	1.3	2PDT	$5.25	$4.72	$3.93	$3.67
T163-4C	.....	115	6000	1.3	4PDT	6.03	5.46	4.56	4.25



Series TF154 and T154

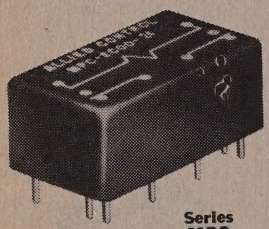
VOLTAGE ADJUSTED SINGLE COIL DC RELAYS

T351/T362 Cradle Series bi-stable and magnetic latch industrial relays. Single or dual coil construction. Versatile mounting means including solder, PC board and socket options. Contact selection to meet load switching requirements. Input voltage from 6 to 110 VDC. UL recognized File #E-206041. **Weight:** 1.5 to 4.0 ozs.

Allied Number		Coil				Net Each, Lots of			
Solder/ Plug-In	PC Mount	Input VDC	Resis. (Ohms)	Power (mW)	Contacts	1-9	10-49	50-99	100-499
SINGLE POINT 2 AMP CONTACTS									
T351-2C	TP351-2C	24	630	300	2PDT	$5.77	$5.19	$4.35	$4.04
T351-4C	TP351-4C	24	630	300	4PDT	6.35	5.72	4.77	4.46
BIFURCATED 2 AMP CONTACTS									
T362-2C	TP362-2C	24	630	300	2PDT	$6.24	$5.61	$4.72	$4.41
T362-4C	TP362-4C	24	630	300	4PDT	7.24	6.56	5.46	5.09
SINGLE POINT 5 AMP CONTACTS									
TF351-2C	TFP351-2C	24	630	300	2PDT	$5.88	$5.30	$4.41	$4.14
TF351-4C	TFP351-4C	24	630	300	4PDT	6.61	5.98	4.98	4.67

VOLTAGE ADJUSTED DUAL COIL DC RELAYS

SINGLE POINT 2 AMP CONTACTS									
T351-2C	TP351-2C	2/24	485/485	600	2PDT	$6.93	$6.24	$5.19	$4.88
T351-4C	TP351-4C	2/24	485/485	600	4PDT	7.24	6.56	5.46	5.09
BIFURCATED 2 AMP CONTACTS									
T362-2C	TP362-2C	2/24	485/485	600	2PDT	$7.35	$6.61	$5.51	$5.14
T362-4C	TP362-4C	2/24	485/485	600	4PDT	8.34	7.50	6.30	5.88
SINGLE POINT 5 AMP CONTACTS									
TF351-2C	TFP351-2C	2/24	485/485	600	2PDT	$7.03	$6.35	$5.30	$4.93
TF351-4C	TFP351-4C	2/24	485/485	600	4PDT	8.13	7.32	6.10	5.70



Series MPC

SERIES MPC MINIATURE PRINTED CIRCUIT RELAYS

Low profile, high density packaging with unique hingeless armature for long life. Gold-plated silver contacts for switching low-level circuits up to 2 amps (50 watts maximum per pole). Interlocking housing provides maximum protection from contamination and increases reliability.

Allied Type	Coil			Contacts	Net Each, Lots of			
	Input VDC	Resis. (Ohms)	Power (mW)		1-24	25-499	500-999	1000-4999
MPC-1C	6	50	720	1PDT	$2.94	$2.67	$2.10	$1.76
MPC-1C	12	200	720	1PDT	2.94	2.67	2.10	1.76
MPC-1C	24	800	720	1PDT	3.09	2.78	2.16	1.85
MPC-2C	6	50	720	2PDT	3.88	3.49	2.71	2.33
MPC-2C	12	200	720	2PDT	3.88	3.49	2.71	2.33
MPC-2C	24	800	720	2PDT	3.99	3.59	2.79	2.39
MPC-2C	48	3200	720	2PDT	3.99	3.59	2.79	2.39
MPC-4C	6	38	960	4PDT	4.72	4.25	*	*
MPC-4C	12	150	960	4PDT	4.72	4.25	*	*
MPC-4C	24	600	960	4PDT	4.72	4.25	*	*
MPC-4C	48	2400	960	4PDT	4.72	4.25	*	*

*Prices supplied upon request.

SOCKETS AND HARDWARE

Contacts are silver-plated beryllium copper. Sockets are mica-filled phenolic. The No. 30054 is available if hold-down spring is not required.

Allied Number	Used With Relay
30055-1	2PDT Solder
30055-5	2PDT PC Board
30055-8	4PDT Solder
30055-6	4PDT PC Board
30055-2	4PDT Solder
30055-20	6PDT Solder
30055-24	6PDT PC Board
30055-30	8PDT Solder
30040-1	2PDT Spring
30040-2	4PDT Spring
30040-3	6PDT Spring

PRICING

Allied Number	Net Each, Lots of			
	1-9	10-49	50-99	100-499
30055-1	$0.69	$0.61	$0.52	$0.48
30055-5	.69	.61	.52	.48
30055-8	1.05	.99	.82	.77
30055-6	1.05	.99	.82	.77
30055-2	1.05	.99	.82	.77
30055-20	1.26	1.13	.94	.88
30055-24	1.26	1.13	.94	.88
30055-30	1.57	1.41	1.18	1.10
30040-1	.10	.09	.08	.07
30040-2	.10	.09	.08	.07
30040-3	.10	.09	.08	.07

SOLID-STATE TIMERS

The TD10 Series solid-state timers utilize the service-proved T154 Cradle® relay with a solid-state timing circuit to provide timing from 0.1 to 100 seconds with ±2% repeat accuracy. (Up to 300 seconds on special order.) Available as "interval" or "delay-on-operate" models with optional operating and mounting features.

Allied Number	Timing Range (Sec.)	Input Voltage*	Net Each, Lots of			
			1-9	10-49	50-99	100-499
DELAY-ON-OPERATE						
TD10DA-2C-12DNB	0.1 to 10	12 VDC	$22.89	$20.60	$17.16	$16.02
TD10DA-2C-24DNB	0.1 to 10	24 VDC	22.89	20.60	17.16	16.02
TD10DA-2C-115ANB	0.1 to 10	115 VAC	27.30	24.57	20.47	19.11
TD10DA-2C-12DND	1 to 100	12 VDC	29.19	26.27	21.89	20.43
TD10DA-2C-24DND	1 to 100	24 VDC	29.19	26.27	21.89	20.43
TD10DA-2C-115AND	1 to 100	115 VAC	33.60	30.24	25.20	23.52
INTERVAL						
TD10NA-2C-12DNB	0.1 to 10	12 VDC	$23.52	$21.16	$17.64	$16.46
TD10NA-2C-24DNB	0.1 to 10	24 VDC	23.52	21.16	17.64	16.46
TD10NA-2C-115ANB	0.1 to 10	115 VAC	27.93	25.13	20.94	19.55
TD10NA-2C-12DND	1 to 100	12 VDC	29.82	26.83	22.36	20.87
TD10NA-2C-24DND	1 to 100	24 VDC	29.82	26.83	22.36	20.87
TD10NA-2C-115AND	1 to 100	115 VAC	34.23	20.80	25.67	23.96

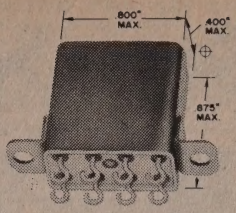
*AC voltage are rated at 50–60 Hz.

MILITARY RELAYS

FULL-SIZE CRYSTAL CAN

WKJ/WKY high-performance military crystal can relays. Bifurcated contacts make relay ideal for dry circuit loads up to 3 amps. All-welded construction provides for maximum protection against contamination and increases reliability. MIL-R-5757/10 as applicable.

Allied Number	Coil Input VDC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
WKJ-6D	12	150	2PDT	**$12.76**	**$11.48**	**$ 9.57**	**$ 8.93**
WKJ-6D	26.5	600	2PDT	**12.76**	**11.48**	**9.57**	**8.93**
WKJ-6D	115	10,000	2PDT	**14.34**	**12.90**	**10.75**	**10.03**
WKY-6D	12	150	2PDT	**13.99**	**12.22**	**10.18**	**9.50**
WKY-6D	26.5	600	2PDT	**13.99**	**12.22**	**10.18**	**9.50**
WKY-6D	115	10,000	2PDT	**14.55**	**13.09**	**10.90**	**10.18**

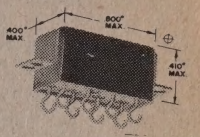


Series WKJ

HALF-SIZE CRYSTAL CAN

S Series high-performance, military, half-size, crystal can relay. Bifurcated contacts make relay ideal for dry circuit loads up to 2 amps. All-welded construction provides for maximum protection against contamination and increases reliability. MIL-R-5757/9 as applicable.

Allied Number	Coil Input VDC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
S6A1	12	140	2PDT	**$12.75**	**$11.47**	**$ 9.56**	**$ 8.92**
S6A1	26.5	700	2PDT	**12.75**	**11.47**	**9.56**	**8.92**

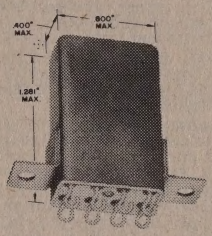


Series S6

SENSITIVE/LONG CRYSTAL CAN

WJS high-performance, current-sensitive military crystal can relays. 1PDT models have sensitivity of 22mW; DPDT models have sensitivity of 40 mW. Bifurcated contacts make relay ideal for dry circuit loads up to 3 amps. All-welded construction provides for maximum protection against contamination and increases reliability. MIL-R-5757/10 as applicable.

Allied Number	Coil Input mADC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
WJS-3D	5.0	1000	1PDT	**$15.15**	**$13.63**	**$11.36**	**$10.60**
WJS-3D	3.2	2500	1PDT	**15.15**	**13.63**	**11.36**	**10.60**
WJS-3D	1.6	10,000	1PDT	**16.52**	**14.87**	**12.39**	**11.57**
WJS-6D	6.3	1000	2PDT	**14.46**	**13.02**	**10.84**	**10.13**
WJS-6D	4.0	2500	2PDT	**14.46**	**13.02**	**10.84**	**10.13**
WJS-6D	2.0	10,000	2PDT	**16.69**	**15.02**	**12.51**	**11.68**



Series WJS

MINIATURE ROUND CAN

MH Series for military and aerospace applications. Contacts for load switching up to 5 amps. Meets MIL-R-5757 as applicable. Ambient Temperature Range: −55° C to +85° C.

Allied Number	Coil Input VDC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
MH-6D	26.5	400	2PDT	**$16.64**	**$15.01**	**$12.49**	**$11.65**
MH-12D	26.5	300	4PDT	**24.99**	**22.49**	**18.74**	**17.49**
MH-18D	26.5	200	6PDT	**30.45**	**27.40**	**22.83**	**21.31**

MHB Series same as MH but with construction for ambient temperature range of −65° C to +125° C.

MHB-6D	26.5	325	2PDT	**$16.64**	**$15.01**	**$12.49**	**$11.65**
MHB-12D	26.5	250	4PDT	**24.99**	**22.49**	**18.74**	**17.49**
MHB-18D	26.5	200	6PDT	**30.45**	**27.40**	**22.83**	**21.31**

MHJ Series same as MH but with construction for ambient temperature range of −65° C to +125° C and higher vibration capabilities of 20 G to 2000 Hz.

MHJ-12D	26.5	250	4PDT	**$27.72**	**$24.94**	**$20.79**	**$19.40**
MHJ-18D	26.5	200	6PDT	**30.45**	**27.40**	**22.83**	**21.31**

MHB AC Operation Series same as MH DC Operation Series but with split coil construction with diodes for AC operation and minimized EMI. Ambient temperature range: −65° C to +125° C.

Allied Number	Coil Input VAC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
MHB-6A	115	4215/4215	2PDT	**$30.71**	**$27.66**	**$23.04**	**$21.52**

MHJ AC Operation Series same as MHJ DC Operation Series except with split coil construction with diodes for AC operation and minimized EMI.

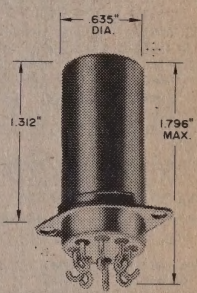
MHJ-12A	115	2765/2765	4PDT	**$38.43**	**$34.58**	**$28.82**	**$26.90**
MHJ-18A	115	2635/2635	6PDT	**42.00**	**37.80**	**31.50**	**29.40**

MHY Series 10 amp. miniature for military and aerospace applications. Contacts for load switching up to 10 amps. Meets MIL-R-5757 as applicable. Ambient temperature: −65° C to +125° C.

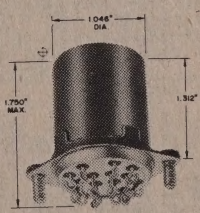
Allied Number	Coil Input VDC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
MHY-12D	26.5	200	4PDT	**$29.66**	**$26.69**	**$22.24**	**$20.75**

MHY AC Operation Series same as MHY DC Operation Series except with split coil construction with diodes for AC operation and minimized EMI. Ambient temperature range: −55° C to +85° C.

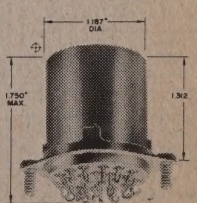
Allied Number	Coil Input VAC	Coil Resis. (Ohms)	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-499
MHY-12A	115	2635/2635	4PDT	**$43.57**	**$39.21**	**$32.67**	**$30.50**



Series MH6

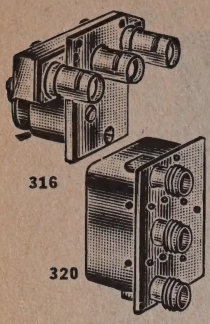


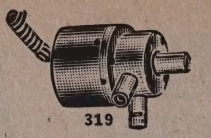
Series MH12

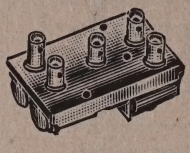


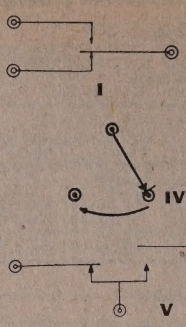
Series MH18

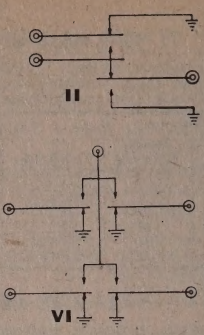
BUNKER RAMO AMPHENOL Coax Relay Switches

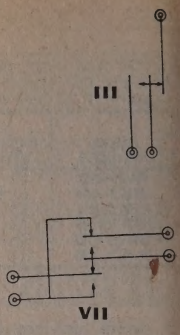












Amphenol coaxial switches, manufactured to the highest quality standards; operate and release in a max. time of 20 msec. or faster. Contacts are gold over fine silver plate. Switches rated at 100 watts RF power are supplied with 3/32" dia. contacts; switches rated at 500 watts use bifurcated contacts of 1/8" dia. Switches provide break-before-make operation. Terminations are jack type RF connectors of BNC, N, C, MB or UHF type. These DK coaxial switches meet applicable portions of MIL-S-3928B. Minimum expected life is 1,000,000 cycles at speeds of less than 10 cycles per second. Coils are vacuum impregnated to withstand high humidity and operate continuously over a temperature range of −65° C to +85° C. Coil input power at nominal voltage is as follows: DC operated 100 W RF switches, 2½ W; DC operated 500 W RF switches, 3¼ W; AC operated switches, all types, 6 VA.

315 Series—Small, compact, low cost switch with non-shorting termination of the disengaged connector. Connectors and actuator are mounted on a common plate. For DC remote operation only.

316 Series—Rugged, two-position switch with a break-before-make action. The disengaged connector is shorted to ground. Specifically designed for bulkhead mount with all three connectors on the opposite side from actuator.

317 Series—Highly reliable switch with the disengaged connector either resistor terminated or shorted to ground for better crosstalk. Designed for panel mount, the common or input connector is on one side with the two outputs and actuator on the other.

318 Series—Supplied as standard with either shorting, non-shorting or resistor terminations. Two-position type. Designed for flat mount with all three connectors and actuator on the same side.

319 Series—Standard rotary type switch in manual and remote operated versions. Non-shorting contacts. The ¼" dia. turn shaft of manual types bears a 1/4" mounting flat for control knob.

320 Series—High power (1 kW) switch utilizing twin contacts with double make and break action in each position. Designed for panel or bulkhead mount. All three connectors are on the same side. Standard unit is supplied with dust cover over actuator.

321 Series—Rugged, flat-mounting switch in manual or remote operated version. VSWR is low up to 100 MHz. Non-shorting contacts offer less circuit isolation and more crosstalk than shorting types.

322 Series—Small rotary switch for the inter-connection of the common output connector to any of four inputs. Manual operation with non-shorting contacts. Excellent crosstalk and VSWR.

323 Series—Individual actuator for each input. The actuator connects the associated input to the common output when energized. Any one or more inputs may be simultaneously connected to the common output, or any input may be connected to any other input through the common output. Supplied as standard with either shorting or non-shorting contacts, the former offering better crosstalk. Operating time, 10 msec.

325 Series—Compact monitoring switch. Energizing the actuator associated with each input connects this input to the common output. Any one or more inputs may be simultaneously connected to the common output, or any input may be connected to any other input through the common output. Crosstalk for non-shorting types averages about 20 dB. less than for shorting types. Operating time, 10 msec.

326 Series—Compact high density designed for complex switching. Four mounting studs allow flat mount. Shorting contacts. VSWR varies with position of inputs used with respect to common output. Operating time, 10 msec.

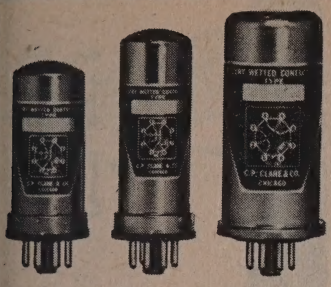
327 Series—Transfer or crossover switch for panel mount. Three connectors and actuator on one side, and the fourth connector on the opposite side. Circuits are connected through two isolated pairs. Energizing the actuator opens these circuits and provides a crossover to the opposite pairs.

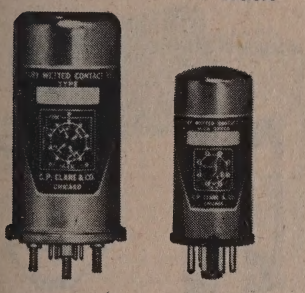
328 Series—Transfer or crossover switch with all four connectors in the same plane for convenient panel mount. A dust cover protects balanced armature actuator. Circuits are connected through two isolated pairs. Energizing the actuator opens these circuits and provides a crossover to the opposite pairs.

Amphenol Number	Circuits*	Function	Conn.	Freq. Range *	Typ. Crosstalk dB	Remote or Manual	Power Watts	Coil Volts	Coil Resist. Ohms	Max. Dim. In.	Wt. Oz.	Net Each, Lots of 1-4	5-9	10-24	25-49
315-010002-3	I	SPDT	BNC	1000	30	Remote	100	26 VDC	280	1 3/8	4	$ 26.67	$ 22.23	$ 19.05	$ 16.89
315-010022-3	I	SPDT	MB	800	30	Remote	100	26 VDC	280	1 3/8	4	28.88	24.06	20.63	18.29
316-010082-3	II	SPDT	BNC	2750	35	Remote	100	26 VDC	280	2	4.5	32.55	27.13	23.25	20.62
316-010082-6	II	SPDT	BNC	2750	35	Remote	100	120 VDC	6000	2	4.5	32.55	27.13	23.25	20.62
316-010102-8	II	SPDT	BNC	2750	35	Remote	100	115 VAC	550	2	6.5	42.78	35.65	30.55	27.09
316-010732-8	II	SPDT	N	2500	40	Remote	500	115 VAC	550	2 5/8	12	39.90	33.25	28.50	25.27
316-010744-3	II	SPDT	N	2500	40	Remote	500	26 VDC	200	2 5/8	12	48.12	40.11	34.38	30.48
317-010202-3	II	SPDT	BNC	2750	40	Remote	100	26 VDC	280	2	4.5	38.11	31.75	27.21	24.13
317-010215-8	II	SPDT	BNC	2750	40	Remote	100	115 VAC	550	2	6.5	32.03	26.69	22.88	20.28
317-010242-3	II	SPDT	N	†	30/40	Remote	100/500	26 VDC	280	2 5/8	5	41.46	34.55	27.62	26.25
317-010242-4	II	SPDT	N	†	30/40	Remote	100/500	48 VDC	1200	2 5/8	5	33.60	28.00	24.00	21.28
317-010255-8	II	SPDT	N	†	30/40	Remote	100/500	115 VAC	550	2 5/8	7	41.62	34.69	29.73	26.37
317-010303-3	II	SPDT	C	4000	30	Remote	100	26 VDC	280	2 3/16	5	34.13	28.44	24.38	21.61
317-010363-8	II	SPDT	UHF	.....	.....	Remote	100	115 VAC	550	2 3/16	7	34.65	28.88	24.75	21.95
317-010538-3	II	SPDT	N	†	30/40	Remote	100/500	26 VDC	200	2 5/8	12	36.75	30.63	26.25	23.28
317-011092-3	II, a	SPDT	BNC	2750	40	Remote	100	26 VDC	280	2	4.5	36.23	30.19	25.88	22.94
318-010381-0	II, b	SPDT	BNC	2750	40	Manual	100	Manual	.....	2	4.5	40.78	33.97	29.13	25.81
318-010382-3	II	SPDT	BNC	2750	40	Remote	100	26 VDC	280	2	4.5	37.97	31.64	27.14	24.05
318-010395-8	II	SPDT	BNC	2750	40	Remote	100	115 VAC	550	2	6.5	38.47	32.05	27.48	24.35
318-010407-3	III	SPDT	BNC	2750	40	Remote	100	26 VDC	280	2	4.5	37.97	31.64	27.14	24.05
318-010407-4	III	SPDT	BNC	2750	40	Remote	100	48 VDC	1200	2	4.5	37.07	30.90	26.48	23.49
318-010662-0	II, b	SPDT	BNC	2500	40	Manual	500	Manual	.....	2 5/8	12	40.95	34.13	29.25	25.94
318-011165-3	II, a	SPDT	BNC	2750	40	Remote	100	26 VDC	280	2	4.5	47.85	39.89	34.19	30.32
318-011576-8	II, a	SPDT	BNC	2750	40	Remote	100	115 VAC	550	2	6.5	47.67	39.72	34.06	30.20
319-011131-3	IV	SPDT	BNC	1700	40	Remote	100	26 VDC	75	2 5/8	8	97.60	81.35	69.72	61.81
319-011141-0	IV, b	SPDT	BNC	1700	40	Manual‡	100	Manual	.....	2 5/8	4.5	66.15	55.14	47.25	41.89
320-010931-3	V	SPDT	N	1500	80	Remote§	1000	26 VDC	100	3 1/2	20	98.65	82.21	70.47	62.48
321-011062-0	I, b, c	DPDT	BNC	1000	25	Manual	100	Manual	.....	2 7/8	8	55.34	46.12	39.53	35.05
321-011064-3	I, c	DPDT	BNC	1000	25	Remote	100	26 VDC	200	2 7/8	10	52.14	43.46	37.26	33.02
322-011431-0	IV, b, d	1P4T	BNC	2750	40	Manual‡	100	Manual	.....	2	11	89.57	74.63	63.99	56.73
323-011506-3	VI	1P4T	BNC	1250	30	Remote	100	26 VDC	280	3	14	73.53	61.28	52.53	46.57
323-011651-3	VI, e	1P4T	BNC	1250	30	Remote	100	26 VDC	280	3	14	73.53	61.28	52.53	46.57
325-011635-3	VI, f	1P6T	BNC	500	40	Remote	100	26 VDC	280	3	21	94.12	78.44	67.23	59.60
325-011641-3	VI, e, f	1P6T	BNC	500	40	Remote	100	26 VDC	280	3	21	94.12	78.44	67.23	59.60
326-011507-3	VI, g	1P12T	BNC	200	50	Remote	100	26 VDC	280	5 5/8	43	155.40	129.50	111.00	98.42
327-010562-3	VII	Transfer	N	1000	30	Remote	100	26 VDC	280	2 1/2	11.5	42.53	35.44	30.38	26.93
327-010582-3	VII	Transfer	BNC	1000	30	Remote	100	26 VDC	280	2 1/2	10.5	52.79	44.00	37.70	33.43
328-011005-3	VII	Transfer	N	1000	30	Remote	100	26 VDC	143	2 7/8	12	57.23	47.69	40.88	36.24

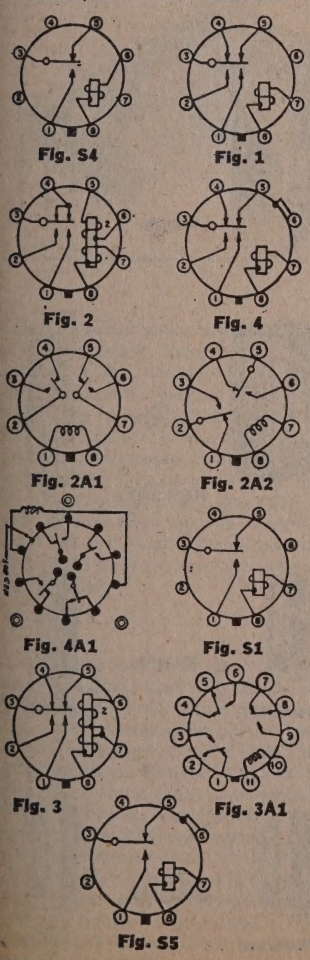
*In MHz, at 1.3 VSWR.†4000/2500. ‡Rotary. §High power. "a—Two 75-ohm resistors terminated. b—Manual. c—Two Circuit I circuits d—Four inputs instead of two. e—Non-shorting contacts. f—Two more inputs. g—Eight more inputs.

PLUG-IN MERCURY-WETTED CONTACT RELAYS





BASE/WIRING DIAGRAMS



HG SERIES PLUG-IN MERCURY-WETTED CONTACT RELAYS

Type HG relays have SPDT make-before-break form D contacts rated 5 amps, 500 V, 250 VA max.; operating time, 2 msec. **Type HG2A:** DPDT operation; 2 capsules; operating time, 2¼ msec. **Type HG3A:** 3PDT operation; 3 capsules; operating time, 2½ msec. **Type HG4A:** 4PDT operation; 4 capsules; operating time, 3¾ msec. Life, 22 x 10^9 at specified ratings. Octal plug-in base, except HG4A (10-pin glass-to-metal plug). Size (not including pins): HG, 1.105″ dia. x 2.636″ h.; HG2A and HG3A, $1^{17}/_{32}$″ dia. x $3^{27}/_{64}$″ h.; HG4A, $1^{1}/_{16}$″ dia. x $3^{3}/_{8}$″ h.

C. P. Clare Number	Coil Resis., Ohms	Must mADC Oper-ate	Must mADC Re-lease	Must Oper. VDC	Max. VDC	Base Fig-ure	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HG1019	40	67	30	2.9	11	4	$20.00	$15.00	$14.00	$13.00	$12.00
HG1012	130	37	16	5.4	20	4	20.00	15.00	14.00	13.00	12.00
HG1026	500	20	8.7	11	39	1	20.00	15.00	14.00	13.00	12.00
HG1004	700	19	8.3	15	45	1	20.00	15.00	14.00	13.00	12.00
HG1043	1000	15	6.6	17	55	1	20.00	15.00	14.00	13.00	12.00
HG1001	2500	10	4.4	28	87	1	12.25	9.19	8.57	7.96	7.35
HG1002	4000	7.5	3.3	33	110	1	20.00	15.00	14.00	13.00	12.00
HG1017	4000	7.5	3.3	33	110	4	20.00	15.00	14.00	13.00	12.00
HG1009	7000	5.8	2.6	45	145	1	20.00	15.00	14.00	13.00	12.00
HG1011	11,000	5.0	2.2	61	180	1	20.00	15.00	14.00	13.00	12.00
HG1024	25,000	3.4	1.5	94	275	1	20.00	15.00	14.00	13.00	12.00
HG1003†	700/3300	32/13	14/4.9	25/47	46/99	2	20.00	15.00	14.00	13.00	12.00
HG2A1042	140	67	28	10	24	2A1	32.45	24.34	22.71	21.09	19.47
HG2A1003	315	44	19	15	36	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1017	500	35	15	19	45	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1009	700	31	13	24	53	2A1	32.45	24.34	22.71	21.09	19.47
HG2A1002	700	31	13	24	53	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1015	1250	22	9.3	30	71	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1068	2500	17	7.0	46	100	2A1	32.45	24.34	22.71	21.09	19.47
HG2A1001	5000	11	4.7	62	142	2A1	32.45	24.34	22.71	21.09	19.47
HG3A1004	5000	11	4.7	62	142	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1013	10,000	8.6	3.6	94	200	2A2	32.45	24.34	22.71	21.09	19.47
HG2A1004	315	44	19	15	36	2A1	42.10	31.57	29.47	27.36	25.26
HG3A1006	500	35	15	19	45	2A2	42.10	31.57	29.47	27.36	25.26
HG3A1002	700	31	13	24	53	3A1	42.10	31.57	29.47	27.36	25.26
HG3A1008	1250	22	9.3	30	71	3A1	42.10	31.57	29.47	27.36	25.26
HG3A1005	2500	17	7.0	46	100	3A1	42.10	31.57	29.47	27.36	25.26
HG3A1003	5000	11	4.7	62	142	3A1	42.10	31.57	29.47	27.36	25.26
HG3A1010	10,000	8.6	3.6	94	200	3A1	42.10	31.57	29.47	27.36	25.26
HG4A1011	390	42	18	18	40	4A1	54.10	40.57	37.87	35.16	32.46
HG4A1001	700	35	15	27	53	4A1	54.10	40.57	37.87	35.16	32.46
HG4A1007	1400	23	9.9	35	75	4A1	54.10	40.57	37.87	35.16	32.46
HG4A1003	4000	16	6.7	69	126	4A1	54.10	40.57	37.87	35.16	32.46
HG4A1006	10,000	8.6	3.7	94	200	4A1	54.10	40.57	37.87	35.16	32.46

HGP SERIES OCTAL-BASED MERCURY-WETTED RELAYS

Similar to HG series, but with permanent magnets making a slight increase in height. Single side stable, except as indicated. Size, 1.105″ dia. x 3.105″ high (not incl. pins).

HGP1001	90	16	1.3	1.6	16	1	$21.75	$16.31	$15.22	$14.14	$13.05
HGP1005	1000	5.6	0.4	6.2	55	1	21.75	16.31	15.22	14.14	13.05
HGP1002	4000	3.0	0.24	13	110	1	21.75	16.31	15.22	14.14	13.05
HGP1008	4000	4.7	1.7	21	110	1	21.75	16.31	15.22	14.14	13.05
HGP1055	7000	2.2	0.19	17	145	1	21.75	16.31	15.22	14.14	13.05
HGP1052	11,000	1.9	0.21	23	180	1	21.75	16.31	15.22	14.14	13.05
HGP1050	25,000	1.3	0.15	36	275	1	21.75	16.31	15.22	14.14	13.05
HGP1006†	700/3300	14/5.7	2.8	11/21	46/99	1	21.75	16.31	15.22	14.14	13.05
HGP1047*	600	±3.4	.....	±2.2	43	1	21.75	16.31	15.22	14.14	13.05
HGP1003*	4000	±1.5	.....	±6.6	110	1	21.75	16.31	15.22	14.14	13.05
HGP1012†	700/3300	6.0/2.4	.....	4.6/3.7	46/99	3	21.75	16.31	15.22	14.14	13.05
HGP1031*†	7500?/7500	±1.7/1.7	.....	±14/14	150/150	3	21.75	16.31	15.22	14.14	13.05
HGP1028	500	.....	.....	6.3#	.....	4	21.75	16.31	15.22	14.14	13.05
HGP1009	4000	.....	.....	18.5#	.....	4	21.75	16.31	15.22	14.14	13.05

HGS SERIES OCTAL-BASED MERCURY-WETTED RELAYS

Plug-in relays SPDT type rated 2 amps, 500 V, 100 VA max. Operate time, 1 msec. Life, 22 x 10^9 at specified ratings. Single element assemblies. **HGS1:** Make-before-break contacts. **HGS5:** Break-before-make contacts. Size, 1.312″ max. dia. x 2.650″ h. (not including pins). Base HGS11011M01, S4; HGS51011M01, S5; all others, S1.

C. P. Clare Number	Coil Resis., Ohms	Must mADC Oper-ate	Must mADC Re-lease	Must Oper. VDC	Max. VDC	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HGS1015	90	6.3	1.1	.63	13	$16.55	$12.41	$11.59	$10.76	$9.93
HGS1045	350	3.6	0.61	1.4	26	16.55	12.41	11.59	10.76	9.93
HGS1018	500	2.9	0.50	1.6	31	16.55	12.41	11.59	10.76	9.93
HGS1009	600	2.9	0.69	1.9	34	16.55	12.41	11.59	10.76	9.93
HGS1046	700	2.9	0.49	2.2	37	16.55	12.41	11.59	10.76	9.93
HGS1014	1000	2.2	0.38	2.4	44	16.55	12.41	11.59	10.76	9.93
HGS1006	2500	1.4	0.17	3.9	70	16.55	12.41	11.59	10.76	9.93
HGS1005	4000	1.25	0.25	5.5	90	16.55	12.41	11.59	10.76	9.93
HGS1048	4000	1.25	0.25	5.5	90	16.55	12.41	11.59	10.76	9.93
HGS1016	7000	0.87	0.14	6.7	118	16.55	12.41	11.59	10.76	9.93
HGS1017	11,000	0.72	0.12	8.7	148	16.55	12.41	11.59	10.76	9.93
HGS1113	1000	‡1.2	.....	1.4	45	16.55	12.41	11.59	10.76	9.93
HGS1114	2500	‡0.82	.....	2.3	70	16.55	12.41	11.59	10.76	9.93
HGS1026	4000	‡0.48	.....	2.1	90	16.55	12.41	11.59	10.76	9.93
HGS1056	7000	‡0.48	.....	3.7	118	16.55	12.41	11.59	10.76	9.93
HGS1096	25,000	‡0.29	.....	3.0	223	16.55	12.41	11.59	10.76	9.93
HGS1004	600	.....	.....	6.3#	.....	16.55	12.41	11.59	10.76	9.93
HGS5011	350	3.6	0.61	1.4	26	16.55	12.41	11.59	10.76	9.93
HGS5015	1000	2.2	0.38	2.4	44	16.55	12.41	11.59	10.76	9.93
HGS5003	2500	1.4	0.17	3.9	70	16.55	12.41	11.59	10.76	9.93
HGS5008	4000	1.25	0.25	5.5	90	16.55	12.41	11.59	10.76	9.93
HGS5047	11,000	0.72	0.12	8.7	148	16.55	12.41	11.59	10.76	9.93
HGS5016	25,000	0.52	0.09	14.3	224	16.55	12.41	11.59	10.76	9.93
HGS5006	1000	1.2	.....	1.4	45	16.55	12.41	11.59	10.76	9.93
HGS5004	4000	0.48	.....	2.1	90	16.55	12.41	11.59	10.76	9.93
HGS5017	600	.....	.....	6.3#	.....	16.55	12.41	11.59	10.76	9.93

*Bi-stable. †Double wound. ‡Single side stable. §Chopper. #VAC.

MODULAR MERCURY-WETTED CONTACT RELAYS

HGM SERIES MODULAR MERCURY-WETTED RELAYS

Consist of standard HG switch capsules in module form, with plated steel covers for excellent mechanical protection and magnetic shielding. Standard HG switch is not polarity sensitive. SPDT make-before-break contacts rated 5 amps, 500 volts, 250 VA maximum. Life expectancy, 22 x 10^9 at specified ratings. Size, ¾" x ¾" x 3 13/64".

C. P. Clare Number	Coil Resis., Ohms	Must mADC Operate	Must mADC Release	Must Oper. VDC	Max. DC Volts	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HGM1005	40	119	52	5.24	12.6	$15.55	$11.66	$10.88	$10.11	$9.33
HGM1008	150	53	23	8.75	24	15.55	11.66	10.88	10.11	9.33
HGM1002	450	32.9	14.5	16.3	42	15.55	11.66	10.88	10.11	9.33
HGM1001	750	18.6	8.2	15.4	55	15.55	11.66	10.88	10.11	9.33
HGM1012	1100	21.6	9.5	26.2	66	15.55	11.66	10.88	10.11	9.33

HG2M SERIES DPDT MODULAR RELAYS

Same characteristics as HGM series, but contains two capsules for DPDT make-before-break configuration. Contacts rated 5 amps, 500 volts, 100 VA maximum with life expectancy of 22 x 10^9. Size, ¾" x 1 13/32" x 3 13/64" max.

HG2M1007	90	82.2	28.6	8.2	19	$21.15	$15.86	$14.80	$13.75	$12.69
HG2M1008	350	42.0	14.6	16.2	37	21.15	15.86	14.80	13.75	12.69
HG2M1020	580	32.5	11.2	20.7	48	21.15	15.86	14.80	13.75	12.69
HG2M1026	1250	23.0	8.0	31.8	70	21.15	15.86	14.80	13.75	12.69

HGSM SERIES PRINTED CIRCUIT MODULE RELAYS

Mercury-wetted relays for printed circuit board mounting. **HGSM-1000** series have SPDT make-before-break contacts; **HGSM-5000,** break-before-make. Contacts rated 2 amps, 500 volts, 100 VA max. at rated load. Max. dissipation, 2 watts continuous at 25° C. Temperature rise, 30° C per watt at 25° C ambient. Life expectancy, 22 x 10^9. Single side stable, except as indicated. Size, 5/8" x 5/8" x 2 1/16" max.

C. P. Clare Number	Coil Resis., Ohms	Must mADC Operate	Must mADC Release	Must Oper. VDC	Max. VDC	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HGSM1009	275	17.0	2.8	5.2	23.4	$13.35	$10.01	$9.34	$8.68	$8.01
HGSM1010	450	12.9	2.1	6.4	30.0	13.35	10.01	9.34	8.68	8.01
HGSM1011	675	11.6	1.9	8.6	36.7	13.35	10.01	9.34	8.68	8.01
HGSM1002	940	10.1	1.7	10.5	43.3	13.35	10.01	9.34	8.68	8.01
HGSM1001	1425	8.3	1.4	13	53.4	13.35	10.01	9.34	8.68	8.01
HGSM1003	2400	7.35	1.2	20.6	69.2	13.35	10.01	9.34	8.68	8.01
HGSM1016*	1100/ 1100	7.25/ 5.7	.....	8.77/ 6.9	46.9/ 46.9	13.35	10.01	9.34	8.68	8.01
HGSM5035	275	17.0	2.8	5.2	23.4	13.35	10.01	9.34	8.68	8.01
HGSM5009	450	12.9	2.1	6.4	30.0	13.35	10.01	9.34	8.68	8.01
HGSM5010	675	11.6	1.9	8.6	36.7	13.35	10.01	9.34	8.68	8.01
HGSM5011	940	10.1	1.7	10.5	43.3	13.35	10.01	9.34	8.68	8.01
HGSM5001	1425	8.3	1.4	13	53.4	13.35	10.01	9.34	8.68	8.01
HGSM5064	2400	7.35	1.2	20.6	69.2	13.35	10.01	9.34	8.68	8.01
HGSM5003*	1100/ 1100	±7.25/ 5.7	.....	±8.77/ 6.9	46.9/ 46.9	13.35	10.01	9.34	8.68	8.01

*Bi-stable double wound.

HGS2MT SERIES MERCURY-WETTED CONTACT RELAYS

Capable of handling input switching functions for any type of reasonable high speed, low level data acquisition system. Contacts rated 2 amps, 500 volts, 100 VA maximum DPDT, Form C break-before-make. Life expectancy, 22 x 10^9. Size, ¾" x 1 3/32" x 2 1/16" max.

C. P. Clare Number	Nom. VDC	Coil Resis., Ohms	Must VDC Operate	Must VDC Release	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HGS2MT51111F00	6	130	3.0	0.5	$25.10	$18.82	$17.57	$16.31	$15.06
HGS2MT51111J00	12	520	5.3	1.1	25.10	18.82	17.57	16.31	15.06
HGS2MT51111M00	24	2200	11.0	2.2	25.10	18.82	17.57	16.31	15.06

HGJM SERIES MERCURY-WETTED CONTACT RELAYS

Noise is only 15 μV at 4 ms after coil energization with 10 kHz bandwidth; less than 5 μV at 5 ms. Fast response time approaches 1 ms; ultra-stable to 250 Hz. SPDT contacts rated 2 amps at 500 volts max.; 100 VA max. AC or DC.

0.350" LOW PROFILE SINGLE SIDE STABLE

C. P. Clare Number	Nom. VDC	Coil Resis. Ohms	Must VDC Operate	Must VDC Release	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
HGJM51131J00	5.0	68	3.0	0.50	$15.15	$11.36	$10.60	$ 9.85	$ 9.09
HGJM51131N00	12.0	375	6.6	1.0	15.15	11.36	10.60	9.85	9.09
HGJM51131R00	24.0	1425	14.0	2.3	15.15	11.36	10.60	9.85	9.09
HGJM51131V00	48.0	6100	27.5	5.0	15.15	11.36	10.60	9.85	9.09

0.400" HIGH SENSITIVITY SINGLE SIDE STABLE

HGJM51111K00	5.0	125	3.2	0.57	$14.45	$10.84	$10.11	$ 9.39	$ 8.67
HGJM51111P00	12.0	685	7.5	1.4	14.45	10.84	10.11	9.39	8.67
HGJM51111T00	24.0	2650	15.0	2.6	14.45	10.84	10.11	9.39	8.67
HGJM51111W00	48.0	9850	31.0	5.5	14.45	10.84	10.11	9.39	8.67

HGJ2MT SERIES MERCURY-WETTED CONTACT RELAYS

Same as HGJM Series except two capsules for DPDT configurations.

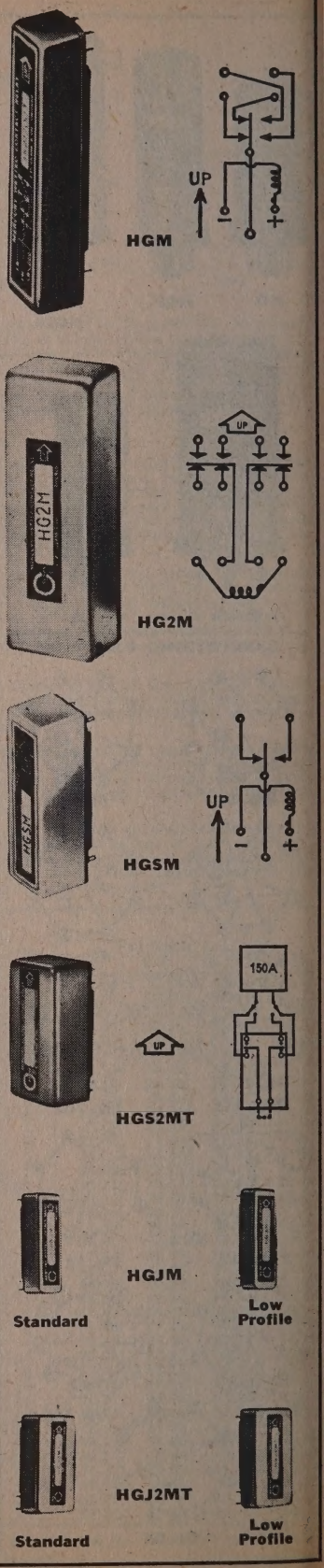
0.350" LOW PROFILE SINGLE SIDE STABLE

HGJ2MT51231E00	5.0	27	2.6	.54	$28.20	$21.15	$19.74	$18.33	$16.92
HGJ2MT51231K00	12.0	230	6.0	1.36	28.20	21.15	19.74	18.33	16.92
HGJ2MT51231N00	24.0	800	12.0	2.4	28.20	21.15	19.74	18.33	16.92
HGJ2MT51231R00	48.0	2850	23.0	4.65	28.20	21.15	19.74	18.33	16.92

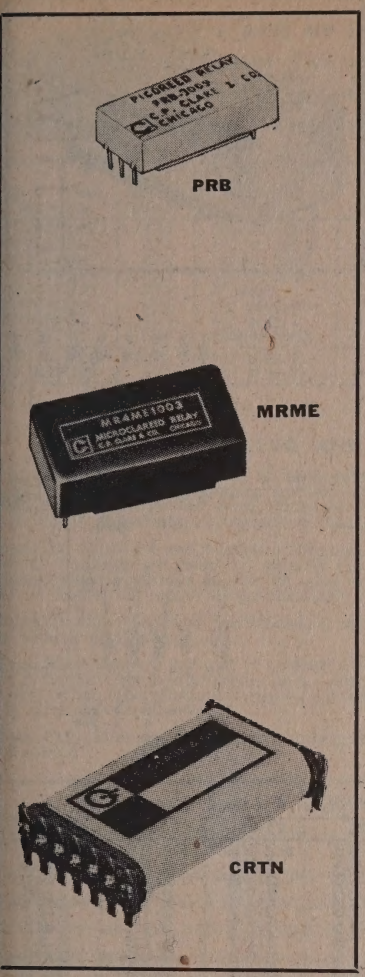
0.400" HIGH SENSITIVITY SINGLE SIDE STABLE*

HGJ2MT54211G00	5.0	55	2.8	0.50	$27.10	$20.32	$18.97	$17.61	$16.26
HGJ2MT54211L00	12.0	370	7.3	1.0	27.10	20.32	18.97	17.61	16.26
HGJ2MT54211P00	24.0	1370	14.0	2.3	27.10	20.32	18.97	17.61	16.26

*With common open time.



Reed Relays



SERIES PRB PICOREED® RELAYS

A state-of-the-art advancement in sealed contact reed relays; small in size, ultra-fast in operation. Response time, physical size, sensitivity and reliability characteristics combine to provide complete electrical and packaging compatibility with integrated circuit devices. Ideal for economical and reliable solid-state input-output isolation buffering applications. High speed operation, with operate time as low as 500 μsec., including bounce, at normal coil power. Contacts rated 0.5 amp max., 100 volts max., 10 VA max.; 1.0 amp maximum carry load. Life expectancy: 100 million operations at low-level loads; 5 million operations at 28 VDC, 0.125 amp. Series 3000 five-volt Picoreed relays are specially designed for compatibility with standard 5-volt DTL and TTL logic families; have must operate voltage value of 3.75 volts at 25° C. PRB low profile Series have straight pin terminals; permits PC board mounting on .375″ centers. Suffix **H** indicates high sensitivity units that allow .500″ mtg. centers; others are low-profile types. All types are .800″ long (width and height shown in table).

C. P. Clare Number	Nom. V	Coil Resis., Ohms	Contact Form	Size, Inches W.	Size, Inches H.	Net Each, Lots of 1-24	25-49	50-99	100-249
PRB-2510	6	387	1A	.275	.187	$3.05	$2.74	$2.59	$2.29
PR2B-2007	6	136	2A	.375	.225	4.40	3.96	3.74	3.30
PR3B-2006	6	117	3A	.475	.225	5.80	5.22	4.93	4.35
PR4B-2005	6	88	4A	.575	.225	7.15	6.43	6.08	5.36
PRB-2513	12	1200	1A	.275	.187	3.05	2.74	2.59	2.29
PR2B-2011	12	740	2A	.375	.225	4.40	3.96	3.74	3.30
PR3B-2009	12	483	3A	.475	.225	5.80	5.22	4.93	4.35
PR4B-2008	12	351	4A	.575	.225	7.15	6.43	6.08	5.36
PR5B-2008	12	419	5A	.675	.225	8.55	7.69	7.27	6.41
PRB-2516	24	5380	1A	.275	.187	3.35	3.01	2.85	2.51
PR2B-2014	24	3042	2A	.375	.225	4.75	4.27	4.04	3.56
PR3B-2013	24	2254	3A	.475	.225	6.15	5.53	5.23	4.61
PR4B-2012	24	1856	4A	.575	.225	7.50	6.75	6.38	5.63
PR5B-2011	24	1424	5A	.675	.225	8.90	8.01	7.56	6.67
PRB-2009H	6	535	1A	.400	.350	3.30	2.97	2.80	2.47
PR2B-2007H	6	297	2A	.500	.350	4.65	4.18	3.95	3.49
PR3B-2006H	6	228	3A	.600	.350	6.05	5.44	5.14	4.54
PR4B-2005H	6	155	4A	.700	.350	7.45	6.70	6.33	5.59
PR5B-2005H	6	180	5A	.800	.350	8.80	7.92	7.48	6.60
PRB-2013H	12	2870	1A	.400	.350	3.30	2.97	2.80	2.47
PR2B-2010H	12	1180	2A	.500	.350	4.65	4.18	3.95	3.49
PR3B-2009H	12	877	3A	.600	.350	6.05	5.44	5.14	4.54
PR4B-2008H	12	663	4A	.700	.350	7.45	6.70	6.33	5.59
PR5B-2008H	12	771	5A	.800	.350	8.80	7.92	7.48	6.60
PRB-2016H	24	11900	1A	.400	.350	3.75	3.37	3.19	2.81
PR2B-2013H	24	3780	2A	.500	.350	5.15	4.63	4.38	3.86
PR3B-2013H	24	4700	3A	.600	.350	6.50	5.85	5.52	4.88
PR4B-2012H	24	3620	4A	.700	.350	7.90	7.11	6.71	5.92
PR5B-2011H	24	3150	5A	.800	.350	9.25	8.32	7.86	6.94
PRB-3510	5	387	1A	.275	.187	3.35	3.01	2.85	2.51
PR2B-3007	5	136	2A	.375	.225	4.75	4.27	4.04	3.56
PR3B-3006	5	117	3A	.475	.225	6.15	5.53	5.23	4.61
PR4B-3005	5	88	4A	.575	.225	7.50	6.75	6.38	5.63
PR5B-3005	5	105	5A	.675	.225	8.90	8.01	7.56	6.67
PRB-3009H	5	535	1A	.400	.350	3.75	3.37	3.19	2.81
PR2B-3007H	5	297	2A	.500	.350	5.15	4.63	4.38	3.86
PR3B-3006H	5	228	3A	.600	.350	6.50	5.85	5.52	4.88
PR4B-3005H	5	155	4A	.700	.350	7.90	7.11	6.71	5.92
PR5B-3005H	5	180	5A	.800	.350	9.25	8.32	7.86	6.94

SERIES MRME MICRO-CLAREED RELAYS

Same high performance standards as regular Clareed relays (listed below), in only one fifth the size. Provide isolation between coil and contacts. Immune to false operation by the type of transients that affect solid state devices; insensitive to overload transients that would damage solid state devices. Offer switching speed as fast as 500 microseconds, fully compatible with other mechanics of process control. Designed for PC board use. Contacts are rated 15 VA max., ¼ amp max. In molded epoxy module.

C. P. Clare Number	Nom. V	Coil Resis., Ohms	Contact Form	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99	100-249
MRME-1540	5	130	1A	1 19/64 x 1 3/32 x .385	$3.85	$3.46	$3.27	$2.89
MR2ME-1540	5	100	2A	1 19/64 x 3 3/64 x .385	5.35	4.81	4.55	4.01
MR3ME-1540	5	80	3A	1 19/64 x 3 59/64 x .385	6.85	6.17	5.82	5.14
MR4ME-1540	5	60	4A	1 19/64 x 4 55/64 x .385	8.35	7.51	7.10	6.26
MRME-1041	6	218	1A	1 19/64 x 1 3/32 x .385	3.85	3.46	3.27	2.89
MR2ME-1041	6	168	2A	1 19/64 x 3 3/64 x .385	5.35	4.81	4.55	4.01
MR3ME-1041	6	125	3A	1 19/64 x 3 59/64 x .385	6.85	6.17	5.82	5.14
MR4ME-1041	6	95	4A	1 19/64 x 4 55/64 x .385	8.35	7.51	7.10	6.26
MRME-1042	12	790	1A	1 19/64 x 1 3/32 x .385	3.85	3.46	3.27	2.89
MR2ME-1042	12	635	2A	1 19/64 x 3 3/64 x .385	5.35	4.81	4.55	4.01
MR3ME-1042	12	510	3A	1 19/64 x 3 59/64 x .385	6.85	6.17	5.82	5.14
MR4ME-1042	12	410	4A	1 19/64 x 4 55/64 x .385	8.35	7.51	7.10	6.26
MRME-1043	24	3060	1A	1 19/64 x 1 3/32 x .385	4.45	4.00	3.78	3.34
MR2ME-1043	24	2580	2A	1 19/64 x 3 3/64 x .385	5.95	5.35	5.06	4.46
MR3ME-1043	24	1950	3A	1 19/64 x 3 59/64 x .385	7.45	6.70	6.33	5.59
MR4ME-1043	24	1500	4A	1 19/64 x 4 55/64 x .385	8.95	8.05	7.61	6.71

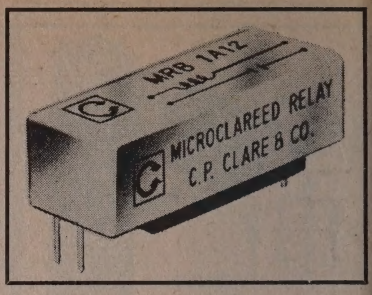
SERIES CRTN CLAREED RELAYS

Ultra-reliable reed relays for printed circuit board mounting. Reed contacts are sealed in an inert gas atmosphere, within a glass tube. Coils are wound on molded bobbins capable of accepting up to six Clareed switch capsules. Standard Clareed relays have 1, 2, 4 and 6 Form A contacts rated 15 VA maximum, non-inductive; 1 amp maximum, 250 volts maximum; with carry load of 5 amps maximum (not switched). Life expectancy, over 20 million operations at rated load. Insulation resistance, 500K megohms minimum. Breakdown voltage, 500 V rms, 60 Hz minimum. Available for 5, 12, 24 or 48 volts.

C. P. Clare Number	V	Coil Resis., Ohms	Contact Form	Maximum Size	Net Each, Lots of 1-24	25-49	50-99	100-249
CRTN-1007	6	160	1A	5/8″ x 9/16″ x 2 21/32″	$ 3.70	$3.33	$3.14	$2.77
CR2TN-1004	6	88	2A	27/32″ x 9/16″ x 2 21/32″	4.70	4.23	3.99	3.52
CR4TN-1104	6	56	4A	1 9/32″ x 9/16″ x 2 21/32″	6.80	6.12	5.78	5.10
CR6TN-1003	6	31	6A	1 49/64″ x 9/16″ x 2 21/32″	8.90	8.01	7.56	6.67
CRTN-1010	12	600	1A	5/8″ x 9/16″ x 2 21/32″	3.70	3.33	3.14	2.77
CR2TN-1007	12	235	2A	27/32″ x 9/16″ x 2 21/32″	4.70	4.23	3.99	3.52
CR4TN-1107	12	136	4A	1 9/32″ x 9/16″ x 2 21/32″	6.80	6.12	5.78	5.10
CR6TN-1006	12	120	6A	1 49/64″ x 9/16″ x 2 21/32″	8.90	8.01	7.56	6.67
CRTN-1013	24	2500	1A	5/8″ x 9/16″ x 2 21/32″	4.70	4.23	3.99	3.52
CR2TN-1010	24	1400	2A	27/32″ x 9/16″ x 2 21/32″	5.80	5.22	4.93	4.35
CR4TN-1110	24	835	4A	1 9/32″ x 9/16″ x 2 21/32″	7.90	7.11	6.71	5.92
CR6TN-1009	24	510	6A	1 49/64″ x 9/16″ x 2 21/32″	10.00	9.00	8.50	7.50
CRTN-1016	48	9450	1A	5/8″ x 9/16″ x 2 21/32″	6.30	5.67	5.35	4.72
CR2TN-1013	48	5400	2A	27/32″ x 9/16″ x 2 21/32″	7.35	6.61	6.25	5.51
CR4TN-1113	48	2195	4A	1 9/32″ x 9/16″ x 2 21/32″	9.45	8.50	8.03	7.09
CR6TN-1012	48	1900	6A	1 49/64″ x 9/16″ x 2 21/32″	11.55	10.39	9.82	8.66

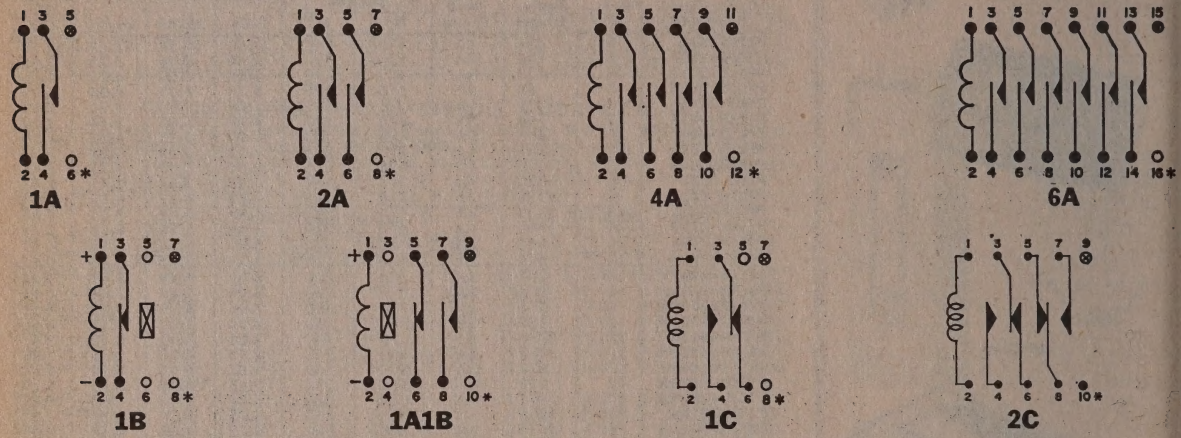
Dry Reed Relays

MRB SERIES MICROCLAREED® RELAYS

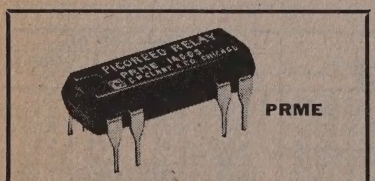


MRB microreed relays offer versatile signal level to 10 VA switching capabilities, total input/output isolation, 800 microsecond typical switching speeds in the miniature sized relay family. Operate with coil power requirements as low as 10 milliwatts. Ultra-reliable operation exceeds 100 million operations at signal level loads and 10 million operation at rated loads. Optional MRB relays are available in 3 or 5 Form A, 2 Form B, 3 or 4 Form C, 1A latching or 2A latching and 2A2B contact forms. UL versions in all but Form C are available as listed in UL File E43775. Relays have molded epoxy bases with stamped metal covers and convenient 1.000″ x 0.100″ grid mounting centers for printed circuit mounting. Low profile package mounts on 0.5″ PCB centers. Electrostatic shielding is available. **Contact Rating:** 10 VA max.; 200 VDC or peak AC max.; 0.75 amp max. switched (2.0 amps max. carry only). **Contact Resistance:** Initial 200 milliohms max., measured at 10 mA, 1000 Hz. **Life:** 100 million operations at signal level; 10 million operations at full rated load. **Operate Time:** Less than 800 μsec including bounce. **Breakdown Voltage:** 250 VAC rms, 60 Hz; 350 VDC max. **Insulation Resistance:** 10 G ohms min. at 100 VDC, +25° C, 40% RHD. **Size:** 1A, 1.135″ w. x .360″ d. x .350″ max. h; add to width .100″ for 2A, 1B, and 1C; .200″ for 1A1B and 2C; .300″ for 4A; .500″ for 6A. **Pins:** .023″ dia. x 1.25″ h. Pins are located .08″ from the ends and are on 1.00″ centers (.100″ apart).

CONTACT FORMS



C. P. Clare Number	Contact Form	Nom. VDC	Must Operate VDC	Must Release VDC	Max. VDC	Coil Resis., Ohms	Net Each, Lots of 1-24	25-49	50-99	100-249
MRB1A05	1A	5	3.75	0.15	15	225	$2.65	$2.38	$2.25	$1.99
MRB1A06	1A	6	4.5	0.15	18	340	2.65	2.38	2.25	1.99
MRB1A12	1A	12	9.0	0.7	36	1400	2.65	2.38	2.25	1.99
MRB1A24	1A	24	18.0	2.5	60	4340	3.00	2.70	2.55	2.25
MRB2A05	2A	5	3.75	0.15	11	105	3.75	3.37	3.19	2.81
MRB2A06	2A	6	4.5	0.15	14	180	3.75	3.37	3.19	2.81
MRB2A12	2A	12	9.0	0.7	26	730	3.75	3.37	3.19	2.81
MRB2A24	2A	24	18.0	2.5	48	2500	4.10	3.69	3.49	3.07
MRB4A05	4A	5	3.75	0.15	9	60	5.95	5.35	5.06	4.46
MRB4A06	4A	6	4.5	0.15	11	100	5.95	5.35	5.06	4.46
MRB4A12	4A	12	9.0	0.7	18	275	5.95	5.35	5.06	4.46
MRB4A24	4A	24	18.0	2.5	36	1090	6.30	5.67	5.35	4.72
MRB6A05	6A	5	3.75	0.15	7	32	8.15	7.33	6.93	6.11
MRB6A06	6A	6	4.5	0.15	9	50	8.15	7.33	6.93	6.11
MRB6A12	6A	12	9.0	0.7	18	210	8.15	7.33	6.93	6.11
MRB6A24	6A	24	18.0	2.5	36	900	8.50	7.65	7.22	6.38
MRB1B05	1B	5	3.75	0.4	7.5	300	3.75	3.37	3.19	2.81
MRB1B06	1B	6	4.5	0.5	9	450	3.75	3.37	3.19	2.81
MRB1B12	1B	12	9.0	1.0	18	1240	3.75	3.37	3.19	2.81
MRB1B24	1B	24	18.0	2.0	36	5800	4.10	3.69	3.49	3.07
MRB1N05	1A1B	5	3.75	0.4	7.5	50	4.85	4.36	4.12	3.64
MRB1N06	1A1B	6	4.5	0.5	9	82	4.85	4.36	4.12	3.64
MRB1N12	1A1B	12	9.0	1.0	18	230	4.85	4.36	4.12	3.64
MRB1N24	1A1B	24	18.0	2.0	36	900	5.20	4.68	4.42	3.90
922A05C1C	1C	5	3.75	0.4	20	350	5.95	5.35	5.06	4.46
922A06C1C	1C	6	4.5	0.5	25	560	5.95	5.35	5.06	4.46
922A12C1C	1C	12	9.0	1.0	45	1900	5.95	5.35	5.06	4.46
922A24C1C	1C	24	18.0	2.0	93	7800	6.30	5.67	5.35	4.72
922A05C2C	2C	5	3.75	0.4	16	220	10.35	9.31	8.80	7.76
922A06C2C	2C	6	4.5	0.5	21	365	10.35	9.31	8.80	7.76
922A12C2C	2C	12	9.0	1.0	32	880	10.35	9.31	8.80	7.76
922A24C2C	2C	24	18.0	2.0	75	4660	10.70	9.63	9.09	8.02



PRME

- IC COMPATIBLE TO-116 DIP PACKAGE
- .100″ GRID TERMINAL SPACING
- .180″ MAXIMUM HEIGHT
- FAST—125 μSEC OPERATE TIME WITH PROPER COIL DRIVE

PRME SERIES PICOREED® RELAYS

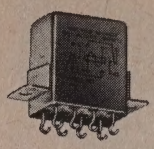
Dual-in-line pkg. is ideal for mounting on board centers compatible with IC components. The PRME package permits automatic insertion equipment techniques for direct PCB mounting or standard DIP socket mtg. Molded epoxy body with Tintillate tinned pins. Contact resistance 200 milliohms max. initially measured with 6 VDC across open contacts and with 100 mA load current. Insulation resistance 10,000 megs min. Relay reliability 100 x 10^6 operations at 28 VDC, 0.125 amp with appropriate contact protection. Dielectric standoff voltage 200 VAC rms 60 Hz min. between all mutually insulated terminals. For optional features as listed, add suffix to no.: PRME-1A005**A**. Size, 0.770″ w. x 0.250″ d. x 0.180″ h.

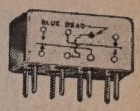
C. P. Clare Number	Coil Resis. Ohms ±10%	Must VDC Operate	Must VDC Release	Max. VDC	Nom. Oper. VDC	Power mW	Net Each, Lots of 1-24	25-49	50-99	100-249
PRME1A005	380	3.75	0.9	15.0	5	66	$3.30	$2.97	$2.80	$2.47
PRME1A006	380	4.5	0.9	15.0	6	95	3.30	2.97	2.80	2.47
PRME1A012	530	9.0	2.0	18.0	12	272	3.30	2.97	2.80	2.47
PRME1A024	2000	18.0	4.0	32.0	24	288	3.30	2.97	2.80	2.47
Suffix **A**	Electrostatic shield between coil and capsule						Add to price..... $0.50			
Suffix **B**	Diode between pins 6 and 9; cathode to pin 6						Add to price..... 1.00			
Suffix **C**	Both electrostatic shield and diode						Add to price..... 1.50			

TYPE F AND HF MILITARY-TYPE RELAYS

Full-size (Type F) and half-size (Type HF) military-type relays are unusually versatile; capable of reliable, long-life operation in adverse environments. Ideal for industrial applications, as well as airborne and aerospace. Rigid frame maintains permanent alignment of all elements. Meets MIL-R-5757/10 and 5757/29. Consists of two DPDT form C contacts, rated 2 amps. Size: RP series (Type F), .800″ x .875″ x .396″ max.; HF series, .810″ x .410″ x .410″ max.

C. P. Clare Number	Coil Resis., Ohms	Terminal Type	Enclosure Style	Net Each, Lots of 1-24	25-49	50-99	100-249
RP7631G12	675	Solder hook	Side plate mtg.	$11.35	$10.21	$8.51	$7.38
RP7632G1	675	Solder hook	Std. ear bkts.	11.35	10.21	8.51	7.38
RP7633G4	675	Solder hook	Stud mtg. top	11.35	10.21	8.51	7.38
RP7640G1	675	Solder hook	Stud mtg. side	11.35	10.21	8.51	7.38
RP7641G2	675	3″ leads	Plain case	11.35	10.21	8.51	7.38
RP7641G8	675	3/16″ plug-in	Plain case	11.35	10.21	8.51	7.38
RP9809G1	675	3/16″ plug-in	Std. ear bkts.	11.35	10.21	8.51	7.38
RP9817G1	675	Solder hook	Std. ear bkts.	11.35	10.21	8.51	7.38
HF1201D00	1250	3/16″ plug-in	Plain case	12.80	11.52	9.60	8.32
HF1201K01	700	3/16″ plug-in	Plain case	12.80	11.52	9.60	8.32


F


HF

TYPE 20, 26, 210 AND 211 STEPPING SWITCHES

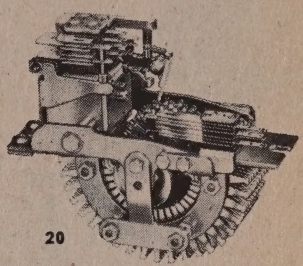
Clare stepping switches offer an economical alternative to solid state switching. Multiplexing, counting and sequence problems are easily solved by providing the most working capacity in the smallest space. Switches enable selection, interruption or change of connections in a succession of circuits in response to current pulses.

Type 20: Include 4 and 8 levels of 20 points with life expectancy of 180 million steps at 8 levels. Contacts are rated 0.1 amp at 115 VAC or 30 VDC resistive with 3 amp carry rating. Operate time is approx. 20 msec at 25° C and release time is approx. 10 msec at 25° C. Solder lug terminals are standard.

Type 26: Same electrical characteristics as type 20, but comes in 4 and 8 levels of 26 points or 6 levels of 52 points.

Type 210: Comes in 3, 6 and 12 levels of 10 points with life expectancy of 100 million steps at 12 levels. Contacts are rated at 0.1 amp at 115 VAC or 30 VDC resistive with 3 amp carry rating. Operate time is approx. 20 msec at 25° C and release time is 10 msec. Solder lug terminals are standard.

Type 211: Same electrical characteristics as type 210, but comes in 3, 6 and 12 levels of 11 points.


20

SPECIFICATIONS

Contact Ratings (Resistive Load): 0.1 amp at 115 VAC or 30 VDC switched, 3 amp carry only.

Contact Resistance (ON Impedance): 0.15 ohm typical.

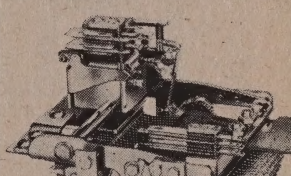
Typical Operate Time: Approx. 20 msec at 25° C, release time approx. 10 msec.

Breakdown Voltage: 1000 VAC, 60 Hz across open contacts.

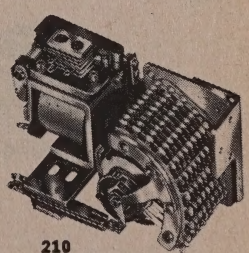
Insulation Resistance (OFF Impedance): 1000 G ohms at 500 VDC between levels.

Environmental: Vibration, 0.06″ d.a., 10–55 Hz; shock, 30G, 11 ±1 msec; temperature, −° C to +85° C.

All switches listed below have one bridging level with the remaining levels being non-bridging. 2C Off-Normal and 2C Interrupter contacts are standard.


26

C. P. Clare Number	Nom. VDC	Coil Resis., Ohms	Levels	Points	Size, Inches H	W	D	Net Each, Lots of 1-24	25-49	50-99
102403A	24	24	3	10	2 3/4	4 5/16	1 19/64	$27.80	$25.02	$23.63
102406A	24	24	6	10	2 3/4	4 5/16	1 13/16	31.75	28.57	26.99
102412A	24	20	12	10	2 3/4	4 5/16	2 13/16	51.60	46.44	43.86
104803A	48	100	3	10	2 3/4	4 5/16	1 19/64	27.80	25.02	23.63
104806A	48	100	6	10	2 3/4	4 5/16	1 13/16	31.75	28.57	26.99
104812A	48	70	12	10	2 3/4	4 5/16	2 13/16	51.60	46.44	43.86
1011003A	110	600	3	10	2 3/4	4 5/16	1 19/64	28.35	25.52	24.10
1011006A	110	600	6	10	2 3/4	4 5/16	1 13/16	32.35	29.11	27.50
1011012A	110	400	12	10	2 3/4	4 5/16	2 13/16	52.15	46.93	44.33
112403A	24	24	3	11	2 3/4	4 5/16	1 19/64	27.80	25.02	23.63
112406A	24	24	6	11	2 3/4	4 5/16	1 13/16	31.75	28.57	26.99
112412A	24	20	12	11	2 3/4	4 5/16	2 13/16	51.60	46.44	43.86
114803A	48	100	3	11	2 3/4	4 5/16	1 19/64	27.80	25.02	23.63
114806A	48	100	6	11	2 3/4	4 5/16	1 13/16	31.75	28.57	26.99
114812A	48	70	12	11	2 3/4	4 5/16	2 13/16	51.60	46.44	43.86
1111003A	110	600	3	11	2 3/4	4 5/16	1 19/64	28.35	25.52	24.10
1111006A	110	600	6	11	2 3/4	4 5/16	1 13/16	32.35	29.11	27.50
1111012A	110	400	12	11	2 3/4	4 5/16	2 13/16	52.15	46.93	44.33
02404A	24	35	4	20	4 5/8	5 5/16	2 1/8	39.65	35.68	33.70
02408A	24	35	8	20	4 5/8	5 5/16	2 1/8	49.90	44.91	42.41
04804A	48	100	4	20	4 5/8	5 5/16	2 1/8	39.65	35.68	33.70
04808A	48	100	8	20	4 5/8	5 5/16	2 1/8	49.90	44.91	42.41
011004A	110	600	4	20	4 5/8	5 5/16	2 1/8	40.25	36.22	34.21
011008A	110	600	8	20	4 5/8	5 5/16	2 1/8	50.45	45.40	42.88
62404A	24	35	4	26	4 7/8	6 5/16	2 1/2	41.35	37.21	35.15
62408A	24	35	8	26	4 7/8	6 5/16	2 1/2	51.00	45.90	43.35
64804A	48	100	4	26	4 7/8	6 5/16	2 1/2	41.35	37.21	35.15
64808A	48	100	8	26	4 7/8	6 5/16	2 1/2	51.00	45.90	43.35
611004A	110	600	4	26	4 7/8	6 5/16	2 1/2	41.95	37.75	35.66
611008A	110	600	8	26	4 7/8	6 5/16	2 1/2	51.60	46.44	43.86
611026A	110	600	6	52	4 7/8	6 5/16	2 3/4	64.65	58.18	54.95
RP8047G4	Rectifier unit							14.20	14.20	14.20
RP9466	Standard lubrication kit							10.00	10.00	10.00
RP11375	Tool kit							50.00	50.00	50.00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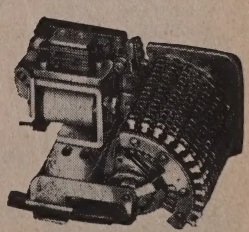
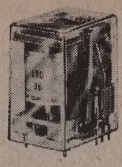
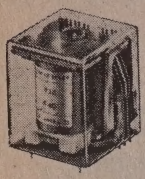

211

Telephone-Type Relays

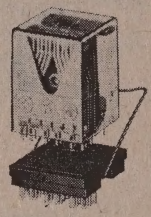
LA



LB

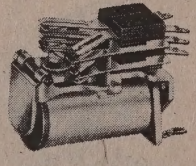


LBP With Socket

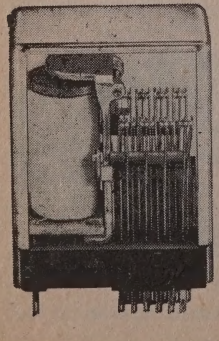


VP With Socket

J



JDP With Socket



LA SERIES MINIATURE TELEPHONE RELAYS

Miniature telephone type relay is an ideal component for military, industrial and commercial applications. Four Form C contacts have palladium with gold overlay on make-and-break contacts. Contacts rated 1.0 amp at 28 VDC, 10-million operations; 1.0 amp at 48 VDC, 750,000 operations; 2.0 amps at 28 VDC, 100,000 operations; 0.25 amp at 115 VAC, 60 Hz, 50-million operations; 0.5 amp at 115 VAC 60 Hz, 750,000 operations; resistive power load. Tinned nickel silver terminals for direct PCB insertion. Clear plastic dust cover with phenolic cover bottom plate. Size, 0.750″ w. x 1.07″ d. x 1.36″ h. overall.

C. P. Clare Number	Volts	At 25° C: Coil Resistance Ohms ±10%	At 25° C: Must Operate VDC	At 25° C: Max. Coil VDC	Net Each, Lots of: 1-24	25-49	50-99	100-249
LA0040A00	6	35	3.9	9.2	$6.35	$5.71	$5.40	$4.76
LA0040B00	12	130	6.9	17.7	6.35	5.71	5.40	4.76
LA0040D00	24	590	14.4	37.6	6.35	5.71	5.40	4.76
LA004N00	48	2100	28.5	71.0	6.35	5.71	5.40	4.76

LB SERIES MINIATURE TELEPHONE RELAYS

High quality miniature relay at a reasonable price. Offers extraordinary switching capacity and versatility for its size. 6PDT contacts are rated 2 amps, with life of 100 million operations (mechanical). LB series is for direct PC board mounting; LBP series mounts in socket (listed below). Size, 1.24″ x 1.00″ x 1.22″ max.

C. P. Clare Number: Direct Mtg.	C. P. Clare Number: Socket Mtg.	Volts	Coil Resis., Ohms	Contact Form	Net Each, Lots of: 1-24	25-49	50-99	100-249
LB0060B00	LBP0060B00	12	130	6PDT	$7.00	$6.30	$5.95	$5.25
LB0060H00	LBP0060H00	14	200	6PDT	7.00	6.30	5.95	5.25
LB0060C00	LBP0060C00	18	330	6PDT	7.00	6.30	5.95	5.25
LB0060D00	LBP0060D00	24	590	6PDT	7.00	6.30	5.95	5.25
LB0060K00	LBP0060K00	30	915	6PDT	7.00	6.30	5.95	5.25
LB0060J00	LBP0060J00	34	1150	6PDT	7.00	6.30	5.95	5.25
RP-15450G5	Solder lug socket for LBP				1.35	1.27	1.15	1.01
RP-15450G6	PC board socket for LBP				1.35	1.27	1.15	1.01

VP SERIES TELEPHONE RELAYS

Available with DPDT, 4PDT or 6PDT Form C contacts rated 1 amp, 100 volts, 30 watts DC resistive load. Operating time, 3–13 milliseconds. Operating temperature, −40° C to +80° C. Protected from dust and contamination with polycarbonate cover. Can be used for PC board mounting with sockets (below).

C. P. Clare Number	V	Coil Resis., Ohms	Contact Form	Maximum Size, Inches	Net Each, Lots of: 1-24	25-49	50-99	100-249
VP2CAB12	12	185	DPDT	3 1/32 x 47/64 x 1 3/16	$4.75	$4.51	$4.04	$3.32
VP4CAB12	12	185	4PDT	1 3/16 x 47/64 x 1 3/16	5.50	5.22	4.67	3.85
VP6CAB900HM	12	110	6PDT	1 27/64 x 47/64 x 1 3/16	7.20	6.84	6.12	5.04
VP2CAB26	26	700	DPDT	3 1/32 x 47/64 x 1 3/16	4.75	4.51	4.04	3.32
VP4CAB26	26	700	4PDT	1 3/16 x 47/64 x 1 3/16	5.50	5.22	4.67	3.85
VP6CAB4300HM	26	530	6PDT	1 27/16 x 47/64 x 1 3/16	7.20	6.84	6.12	5.04
VP2CAB47	47	2500	DPDT	3 1/32 x 47/64 x 1 3/16	4.75	4.51	4.04	3.32
VP4CAB47	47	2500	4PDT	1 3/16 x 47/64 x 1 3/16	5.50	5.22	4.67	3.85
VP6CAB15500HM	47	1700	6PDT	1 27/64 x 47/64 x 1 3/16	7.20	6.84	6.12	5.04
VP2CAB120	120	15000	DPDT	3 1/32 x 47/64 x 1 3/16	6.35	6.03	5.40	4.44
VP4CAB120	120	15000	4PDT	1 3/16 x 47/64 x 1 3/16	7.10	6.74	6.03	4.97
VP6CAB90000HM	120	11750	6PDT	1 27/64 x 47/64 x 1 3/16	8.40	7.98	7.14	5.88
VP2111PC	PC board socket for DPDT relays				.85	.81	.72	.60
VP2111W	Solder lug socket for DPDT relays				.85	.81	.72	.60
VP4111PC	PC board socket for 4PDT relays				1.05	1.00	.89	.74
VP4111W	Solder lug socket for 4PDT relays				1.05	1.00	.89	.74
VP6111PC	PC board socket for 6PDT relays				1.70	1.61	1.44	1.19
VP6111W	Solder lug socket for 6PDT relays				1.70	1.61	1.44	1.19

J AND JDP SERIES TELEPHONE RELAYS

Compact, industrial telephone-type relays for applications ranging from simple switching in alarm circuits to complex computer functions. Contacts rated 4 amps, 150 watts. Operate time, 5 milliseconds minimum. Mechanical life, 70 million operations. Series **J** is open type; series **JDP** has dust cover, comes complete with socket.

C. P. Clare Number	V	Coil Resis., Ohms	Contact Form	Maximum Size, Inches	Net Each, Lots of: 1-24	25-49	50-99	100-249
J244C24	24	500	4PDT	2 1/8 x 1 1/8 x 1 15/32	$ 8.80	$ 7.92	$ 7.48	$6.60
J246C24	24	300	6PDT	2 1/8 x 1 1/8 x 1 21/32	10.30	9.27	8.75	7.72
J484C24	48	1300	4PDT	2 1/8 x 1 1/8 x 1 15/32	9.20	8.28	7.82	6.90
J486C24	48	1000	6PDT	2 1/8 x 1 1/8 x 1 21/32	10.65	9.58	9.05	7.99
J1104C24	110	6500	4PDT	2 1/8 x 1 1/8 x 1 15/32	9.70	8.73	8.24	7.27
J1106C24	110	5000	6PDT	2 1/8 x 1 1/8 x 1 21/32	11.15	10.03	9.48	8.36
JDP244C24	24	500	4PDT	1 23/32 x 1 25/64 x 2 41/64	9.65	8.68	8.20	7.24
JDP246C24	24	300	6PDT	2 7/64 x 1 25/64 x 2 41/64	11.45	10.30	9.73	8.59
JDP484C24	48	1300	4PDT	1 23/32 x 1 25/64 x 2 41/64	10.05	9.04	8.54	7.54
JDP486C24	48	1000	6PDT	2 7/64 x 1 25/64 x 2 41/64	11.80	10.62	10.03	8.85
JDP1104C24	110	6500	4PDT	1 23/32 x 1 25/64 x 2 41/64	10.55	9.49	8.97	7.91
JDP1106C24	110	5000	6PDT	2 7/64 x 1 25/64 x 2 41/64	12.35	11.11	10.50	9.26

SERIES 354 GENERAL PURPOSE MINIATURE RELAY
4FORC, 4PDT

The Series 354 relay handles motor, lamp and solenoid switching requirements in everything from vending machines to disc drive applications. They also switch signal levels in intercoms, two-way radios and small telephone exchanges plus input multiplexing in control systems. The various options make all these uses possible. Contact ratings up to 5 Amps, AC or DC coils, plus solder lug/plug-in, taper tab or PCB terminals. The relays have UL recognition as magnetic motor controllers in industrial applications. Contacts: gold flashed silver button rated at 3 amps at 28 VDC or 120 VAC resistive; gold flashed silver cadmium oxide rated at 5 amps at 28 VDC or 120 VAC resistive. Coil power: DC types, 0.9 W nom.; AC types, 1.4 VA nom. Contact resistance: 50 milliohms. Weight: approx. 1.5 oz.

HOW TO ORDER

354A 1 2 A 1 C
(A) (B) (C) (D) (E) (F)

(A) Relay type
(B) 1 = DC; 2 = AC
(C) 1 = 6; 2 = 12; 4 = 24; 5 = 48; 7 = 110/120
(D) A = Solder lug/plug-in; B = PCB; C = Taper Tab
(E) 1 = Silver cadmium oxide; 2 = Silver
(F) C = 4PDT

Nominal Coil Voltage	AC Coils: Resistance at 25°C Ohms ±15%	AC Coils: Nominal Current mA	DC Coils: Resistance at 25°C Ohms ±10%	DC Coils: Inductance Henrys (Approx.)
6	9.3	200	40	.08
12	42	100	160	.28
24	157	52	650	1.0
48	655	25	2600	4.5
110/120	4100	11	11000	17.0

STANDARD STOCK RELAYS

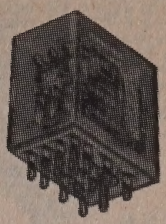
C.P. Clare Number	Coil Volts	Contact Amps	Terminal Type	Net Each, Lots of 1-24	25-49	50-99	100-249
354A12A2C	12DC	3	Plug/Sol.	$5.60	$5.32	$4.76	$3.92
354A14A2C	24DC	3	Plug/Sol.	5.60	5.32	4.76	3.92
354A17A2C	110DC	3	Plug/Sol.	6.45	6.13	5.48	4.51
354A12A1C	12DC	5	Plug/Sol.	5.75	5.46	4.89	4.02
354A14A1C	24DC	5	Plug/Sol.	5.75	5.46	4.89	4.02
354A14B2C	24DC	3	PCB	5.60	5.32	4.76	3.92
354A24A2C	24AC	3	Plug/Sol.	6.45	6.13	5.48	4.51
354A27A2C	120AC	3	Plug/Sol.	6.95	6.60	5.91	4.86
354A24A1C	24AC	5	Plug/Sol.	6.60	6.27	5.61	4.62
354A27A1C	120AC	5	Plug/Sol.	7.10	6.74	6.03	4.97

GP3 GENERAL PURPOSE RELAYS

GP3 (Lexan* dust cover) relays are designed to meet UL bulletin 508 requirements. Rugged AC or DC relays are available in SPDT, DPDT and 3PDT configurations. Contacts gold flashed silver cadmium oxide rated 10 amps at 28 VDC resistive or 120/130 VAC, 0.8 power factor. GP3 plain case models are available with matching molded nylon sockets for plug-in applications. GP3 bracket case model is available for direct chassis mounting only. Mechanical life expectancy is 100 million operations; electrical life is 100,000 operations minimum at rated load. The 0.197″ quick connect terminals are standard. Size, 1.531″ x 1.906″ x 1.406″, GP3 plain case. Many optional features available; complete data on request.
*Registered General Electric trademark.

GP3 PLAIN CASE AND BRACKET CASE

C. P. Clare Number: Plain Case GP3R-	Bracket Case GP3R-	Voltage	Action	Net Each, Lots of 1-24	25-49	50-99	100-249
211AA0000	211NA0000	6 VAC	SPDT	$4.60	$4.37	$3.91	$3.22
211AA1000	211NA1000	12 VAC	SPDT	4.60	4.37	3.91	3.22
211AA2000	211NA2000	24 VAC	SPDT	4.60	4.37	3.91	3.22
211AA6000	211NA6000	120 VAC	SPDT	4.60	4.37	3.91	3.22
211AD0000	211ND0000	6 VDC	SPDT	4.40	4.18	3.74	3.08
211AD1000	211ND1000	12 VDC	SPDT	4.40	4.18	3.74	3.08
211AD2000	211ND2000	24 VDC	SPDT	4.40	4.18	3.74	3.08
211AD5000	211ND5000	110 VDC	SPDT	5.05	4.80	4.29	3.53
221AA0000	221NA0000	6 VAC	DPDT	5.65	5.37	4.80	3.95
221AA1000	221NA1000	12 VAC	DPDT	5.65	5.37	4.80	3.95
221AA2000	221NA2000	24 VAC	DPDT	5.65	5.37	4.80	3.95
221AA6000	221NA6000	120 VAC	DPDT	5.65	5.37	4.80	3.95
221AD0000	221ND0000	6 VDC	DPDT	5.05	4.80	4.29	3.53
221AD1000	221ND1000	12 VDC	DPDT	5.05	4.80	4.29	3.53
221AD2000	221ND2000	24 VDC	DPDT	5.05	4.80	4.29	3.53
221AD5000	221ND5000	110 VDC	DPDT	5.80	5.51	4.93	4.06
231AA0000	231NA0000	6 VAC	3PDT	6.40	6.08	5.44	4.48
231AA1000	231NA1000	12 VAC	3PDT	6.40	6.08	5.44	4.48
231AA2000	231NA2000	24 VAC	3PDT	6.40	6.08	5.44	4.48
231AA6000	231NA6000	120 VAC	3PDT	6.40	6.08	5.44	4.48
231AD0000	231ND0000	6 VDC	3PDT	5.80	5.51	4.93	4.06
231AD1000	231ND1000	12 VDC	3PDT	5.80	5.51	4.93	4.06
231AD2000	231ND2000	24 VDC	3PDT	5.80	5.51	4.93	4.06
231AD5000	231ND5000	110 VDC	3PDT	6.40	6.08	5.44	4.48
GPS3001	Solder terminal socket			.95	.90	.81	.66
GPS3002	Quick connect terminal socket			1.05	1.00	.89	.74
GPS3003	PCB terminal socket			1.05	1.00	.89	.74



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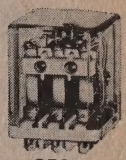


GP3

DC COILS

Nominal Voltage Volts	Resistance at 25° C Ohms ±10%	Nominal Current mA
6	32.0	188
12	120	100
24	470	51
48	1800	26.6
90	6800	13.0
110	10000	11.0

AC COILS 50/60 HZ

Nom. Voltage V	Resistance at 25° C Ohms ±10%: 1 Form C 2 Form C	Resistance at 25° C Ohms ±10%: 3 Form C	Nominal Current mA: 1 Form C 2 Form C	Nominal Current mA: 3 Form C
6	6.0	4.2	335	460
12	21	18	168	230
24	75	72	84	115
48	330	290	42	58
120	2250	1700	17.5	24

OUR STOCKS

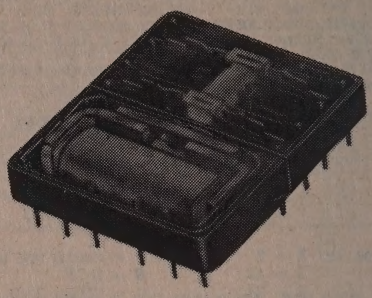
ARE COMPLETE

AND UP TO DATE.

GENERAL PURPOSE AND MERCURY-WETTED REED RELAYS

SERIES 511 LOW PROFILE TELEPHONE TYPE RELAYS

The new Series 511 telephone relays offer reliable low level to 2 amp switching capabilities in 2 and 4 Form C models. The low profile package is only 0.35″ high and allows PCB mounting on 0.5″ centers. The 511 Series relays feature a plastic dust cover and a molded base of thermosetting plastic. Contacts: 2 or 4 Form C is standard; Form C/D combinations are optional. Contact Rating: gold alloy over palladium contacts. 1 amp at 28 VDC res. (5,000,000 operations); 1 amp at 48 VDC res. (750,000 operations); 2 amps at 28 VDC res. (100,000 operations); 0.1 amp at 48 VDC res. (50,000,000 operations); 0.5 amp at 115 VAC res. (750,000 operations).



HOW TO ORDER

511A 24 A 4 C
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Ⓐ Relay type

Ⓑ Coil voltage

Ⓒ A = Single winding

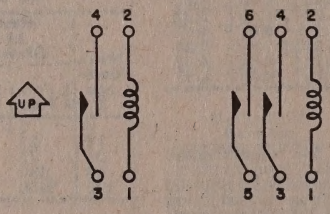
Ⓓ 2 = 2 poles
4 = 4 poles

Ⓔ Pole type

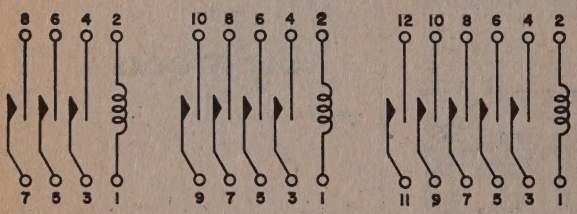
C.P. Clare Number	Contact Form	Nominal Voltage VDC	Must Operate VDC	Must Release VDC	Coil Resistance Ohms ±10%	Net Each, Lots of 1-24	25-49	50-99	100-249
511A06A2C	2C	6	4.5	0.6	40	$4.70	$4.23	$4.00	$3.53
511A12A2C	2C	12	9.0	1.2	175	4.70	4.23	4.00	3.53
511A24A2C	2C	24	18.0	2.4	700	4.70	4.23	4.00	3.53
511A48A2C	2C	48	36.0	4.8	2370	4.95	4.46	4.21	3.71
511A06A4C	4C	6	4.5	0.6	25	6.90	6.21	5.87	5.18
511A12A4C	4C	12	9.0	1.2	100	6.90	6.21	5.87	5.18
511A24A4C	4C	24	18.0	2.4	435	6.90	6.21	5.87	5.18
511A48A4C	4C	48	36.0	4.8	1800	7.15	6.44	6.08	5.36

SERIES 861 MERCURY-WETTED REED RELAYS

861A05C3A



1A 2A



3A 4A 5A

Series 861 Mercury-Wetted Microclareed relays are superior compared to dry reed relays of the same size. The relay has a reliable reed capsule with a no-bounce mercury-wetted armature. These relays provide some of the mercury-wetted contact relay advantages at a slight price premium over dry reed relays.

SPECIFICATIONS

Contact Rating: Power, 35 VA max.; voltage, 500 VDC max.; current, 0.75 amp max. resistive load.

Contact Resistance (On Impedance): 50 milliohms max., initial, total circuit.

Insulation Resistance (Off Impedance): 1000 megohms min. at 100 VDC, +25° C, 50% RH.

Breakdown Voltage: 2000 VAC rms, 60 Hz min. across open contacts; 500 VDC, all other points.

Drain Time: 30 seconds max.

Operating Time: 3 msec max. (no bounce on closure).

Release Time: 3 msec max. with nominal clamping.

Operating Temperature Range: −38.8° C to +50° C.

Life: 20 million operations at rated load with proper contact protection.

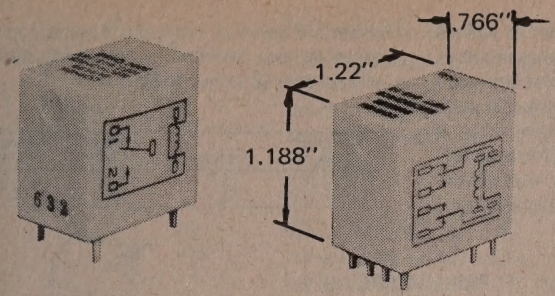
Size: 0.355″ d. x 1.140″ h. x .465″, 1 Form A; .565″, 2 Form A; .765″, 3 Form A; .865″, 4 Form A; 1.065″ w., 5 Form A.

All values are at 25° C.

C. P. Clare Number	Contact Form	Nom. Voltage, VDC	Must Operate, VDC	Must Release, VDC	Max. Voltage, VDC	Coil Resistance Ohms ±10%	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499
861A05C1A	1A	5	3.75	0.15	10	95	$ 6.30	$ 4.72	$ 4.41	$ 4.09	$3.78
861A12C1A	1A	12	9.0	0.70	18	405	6.30	4.72	4.41	4.09	3.78
861A24C1A	1A	24	18	1.4	36	2210	6.70	5.02	4.69	4.35	4.02
861A05C2A	2A	5	3.75	0.15	7.5	55	8.55	6.41	5.98	5.56	5.13
861A12C2A	2A	12	9.0	0.70	18	250	8.55	6.41	5.98	5.56	5.13
861A24C2A	2A	24	18	1.4	36	1000	8.90	6.67	6.23	5.78	5.34
861A05C3A	3A	5	3.75	0.15	7.5	46	10.75	8.06	7.52	6.99	6.45
861A12C3A	3A	12	9.0	0.70	18	325	10.75	8.06	7.52	6.99	6.45
861A24C3A	3A	24	18	1.4	28	810	11.15	8.36	7.80	7.25	6.69
861A05C4A	4A	5	3.75	0.15	7.5	31	13.00	9.75	9.10	8.45	7.80
861A12C4A	4A	12	9.0	0.70	18	200	13.00	9.75	9.10	8.45	7.80
861A24C4A	4A	24	18	1.4	28	600	13.35	10.01	9.34	8.68	8.01
861A05C5A	5A	5	3.75	0.15	7.5	22	15.20	11.40	10.64	9.88	9.12
861A12C5A	5A	12	9.0	0.70	18	150	15.20	11.40	10.64	9.88	9.12
861A24C5A	5A	24	18	1.4	28	420	15.60	11.70	10.92	10.14	9.36

GENERAL PURPOSE AND MINIATURE RELAYS

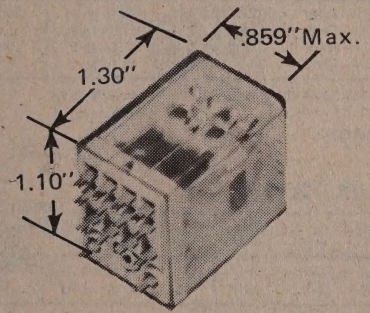
600 SERIES MINIATURE 2 AMP



Burglar alarms, smoke and fire detectors are some of the many applications. The units have printed circuit terminals and are enclosed in a molded nylon housing. Contacts have a 2 amp rating at 120 VAC/28 VDC resistive. UL and CSA recognized.

CDE No.	Contacts	Coil Data		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-499	500-999
603-3V	SPDT	3 VDC	80	$2.32	$2.02	$1.82	$1.51	$1.31
603-6V	SPDT	6 VDC	340	2.44	2.12	1.91	1.59	1.38
603-9V	SPDT	9 VDC	750	2.67	2.32	2.09	1.74	1.51
603-12V	SPDT	12 VDC	1350	2.69	2.34	2.11	1.75	1.52
603-18V	SPDT	18 VDC	3000	3.06	2.66	2.39	1.99	1.73
603-24V	SPDT	24 VDC	5400	3.13	2.72	2.45	2.04	1.77
603-28V	SPDT	28 VDC	8000	3.36	2.92	2.63	2.19	1.90
623-12V	SPDT	12 VAC	35	3.20	2.78	2.50	2.08	1.81
623-24V	SPDT	24 VAC	135	3.22	2.80	2.52	2.10	1.82
623-115V	SPDT	115 VAC	2900	3.45	3.00	2.70	2.25	1.95
683-3V	DPDT	3 VDC	25	4.39	3.82	3.44	2.86	2.48
683-6V	DPDT	6 VDC	100	4.42	3.84	3.46	2.88	2.50
683-9V	DPDT	9 VDC	230	4.46	3.88	3.49	2.91	2.52
683-12V	DPDT	12 VDC	400	4.48	3.90	3.51	2.92	2.53
683-18V	DPDT	18 VDC	900	4.51	3.92	3.53	2.94	2.55
683-24V	DPDT	24 VDC	1550	4.55	3.96	2.56	2.97	2.57
683-28V	DPDT	28 VDC	2200	4.58	3.98	3.58	2.99	2.59

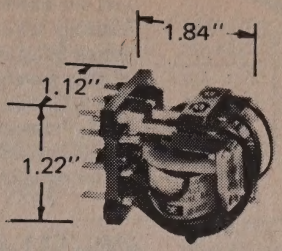
100 SERIES MINIATURE 4 PDT ENCLOSED



3 amp at 120 VAC/28 VDC resistive contact rating. Designed for applications where space is at a premium (audio-visual, vending machines, electronic control). The 104 series have solder lug terminals while the 114 series have printed circuit terminals. The enclosure is clear, shatterproof polycarbonate.

CDE No.	Contacts	Coil Data		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-499	500-999
104A0-6	4PDT	6 VAC	10.5	6.67	5.80	5.22	4.35	3.77
104A0-12	4PDT	12 VAC	43	6.67	5.80	5.22	4.35	3.77
104A0-24	4PDT	24 VAC	160	6.67	5.80	5.22	4.35	3.77
104A0-120	4PDT	120 VAC	3900	7.18	6.24	5.62	4.68	4.06
104D0-6	4PDT	6 VDC	40	5.93	5.16	4.64	3.87	3.35
104D0-12	4PDT	12 VDC	160	5.93	5.16	4.64	3.87	3.35
104D0-24	4PDT	24 VDC	650	5.93	5.16	4.64	3.87	3.35
114A0-6	4PDT	6 VAC	10.5	6.67	5.80	5.22	4.35	3.77
114A0-12	4PDT	12 VAC	43	6.67	5.80	5.22	4.35	3.77
114A0-24	4PDT	24 VAC	160	6.67	5.80	5.22	4.35	3.77
114A0-120	4PDT	120 VAC	3900	7.18	6.24	5.62	4.68	4.06
114D0-6	4PDT	6 VDC	40	5.93	5.16	4.64	3.87	3.35
114D0-12	4PDT	12 VDC	160	5.93	5.16	4.64	3.87	3.35
114D0-24	4PDT	24 VDC	650	5.93	5.16	4.64	3.87	3.35

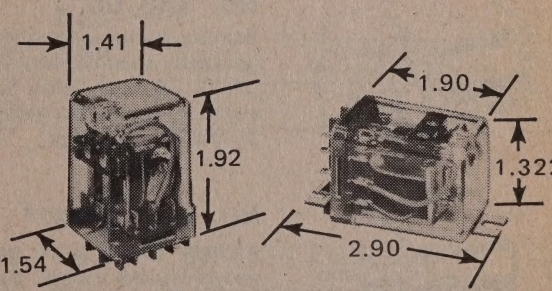
30 SERIES 10 AMP GENERAL PURPOSE



UL and CSA recognized for 10 amp at 120 VAC/28 VDC resistive and ¼ horsepower motors. Used in small motor control and automated industrial equipment applications. The 30 type is an open style with solder terminals. The 31 and 32 types are enclosed in shatterproof, clear polycarbonate cases and are plug-in types that mate with standard octal sockets, type 31 for 8-pin octal and the type 32 for 11-pin octal.

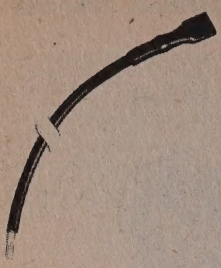
CDE No.	Contacts	Coil Data		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-499	500-999
OPEN RELAYS								
301A10-115V	SPDT	115 AC	2000	4.65	4.04	3.64	3.03	2.63
302A10-12V	DPDT	12 AC	24	5.50	4.78	4.30	3.58	3.11
302A10-24V	DPDT	24 AC	86	5.50	4.78	4.30	3.58	3.11
302A10-115V	DPDT	115 AC	2000	5.50	4.78	4.30	3.58	3.11
303A10-115V	3PDT	115 AC	2000	6.21	5.40	4.86	4.05	3.51
302D10-6V	DPDT	6 DC	32	4.85	4.22	3.80	3.16	2.74
302D10-12V	DPDT	12 DC	110	4.85	4.22	3.80	3.16	2.74
302D10-24V	DPDT	24 DC	475	4.85	4.22	3.80	3.16	2.74
303D10-6V	3PDT	6 DC	32	5.57	4.84	4.36	3.63	3.15
303D10-12V	3PDT	12 DC	110	5.57	4.84	4.36	3.63	3.15
303D10-24V	3PDT	24 DC	475	5.57	4.84	4.36	3.63	3.15
ENCLOSED RELAYS								
311A10-24V	SPDT	24 AC	86	6.60	5.74	5.17	4.30	3.73
311A10-115V	SPDT	115 AC	2000	6.60	5.74	5.17	4.30	3.73
312A10-6V	DPDT	6 AC	5.3	7.36	6.40	5.76	4.80	4.16
312A10-12V	DPDT	12 AC	24	7.36	6.40	5.76	4.80	4.16
312A10-115V	DPDT	115 AC	2000	7.36	6.40	5.76	4.80	4.16
323A10-115V	3PDT	115 AC	2000	9.15	7.96	7.16	5.97	5.17
312D10-6V	DPDT	6 DC	32	7.34	6.38	5.74	4.78	4.15
312D10-12V	DPDT	12 DC	110	7.34	6.38	5.74	4.78	4.15
312D10-24V	DPDT	24 DC	475	7.34	6.38	5.74	4.78	4.15
323D10-12V	3PDT	12 DC	110	9.08	7.90	7.11	5.92	5.13
323D10-24V	3PDT	24 DC	475	9.08	7.90	7.11	5.92	5.13

20 SERIES 10 AMP GENERAL PURPOSE



High reliability and versatility make this enclosed relay with combination terminals (solder lug/quick connect/plug-in) a popular device. All units are enclosed in a shatterproof polycarbonate housing. The 21 style is the plug-in style for socket mounting. The 22 style has 2 slotted flanges molded into the side for direct mounting. 10 amp at 120 VAC/28 VDC resistive. UL and CSA recognized.

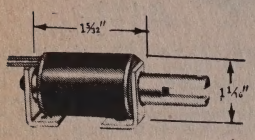
CDE No.	Contacts	Coil Data		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-499	500-999
211D10-12V	SPDT	12 DC	120	4.92	4.28	3.85	3.21	2.78
211D10-24V	SPDT	24 DC	472	4.92	4.28	3.85	3.21	2.78
212D10-6V	DPDT	6 DC	32.1	5.47	4.76	4.28	3.57	3.09
212D10-12V	DPDT	12 DC	120	5.47	4.76	4.28	3.57	3.09
212D10-24V	DPDT	24 DC	472	5.47	4.76	4.28	3.57	3.09
212D10-110V	DPDT	110 DC	10K	6.32	5.50	4.95	4.12	3.57
213D10-12V	3PDT	12 DC	120	6.49	5.64	5.08	4.23	3.67
213D10-24V	3PDT	24 DC	472	6.49	5.64	5.08	4.23	3.67
211A10-120V	SPDT	120 AC	2250	5.13	4.46	4.01	3.34	2.90
212A10-120V	DPDT	120 AC	2250	6.07	5.28	4.75	3.96	3.43
213A10-120V	3PDT	120 AC	1700	7.08	6.16	5.54	4.62	4.00
223D-12V	3PDT	12 DC	120	6.55	5.70	5.13	4.27	3.70
223D-24V	3PDT	24 DC	472	6.55	5.70	5.13	4.27	3.70
223A10-120V	3PDT	120 AC	1700	7.15	6.22	5.60	4.66	4.04



NEW UNI-GUARD® II LEADS

Lead wire adapters specifically designed for use with Guardian's new Uni-Guard® II coil construction which features QC lug termination. Each of these leads has a minimum overall length of 6" and is made of 22 gauge wire (U/L style 1015 with temperature rating of 105°C). Termination at one end is in a choice of .187" or .110" insulated female QC lug which mates with corresponding lug on the solenoid. Wire at opposite end is stripped ¼" minimum. Two lead wire adapters are required for easy conversion of each Uni-Guard® II solenoid from QC to lead termination.

Guardian No.	Lug Size	Package of 50	Package of 100
LW-22.187	.187"	$3.75	$7.50
LW-22.110	.110"	3.75	7.50

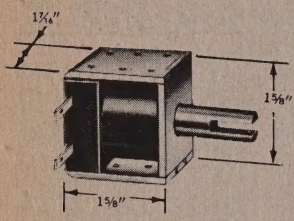


NO. 1A1 AC

Low cost modified U-frame solenoid in two pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: External leads. Shipping weight: 4.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
1A1	Inter	120AC	300	8 oz. at ⅛"	2 oz. at ½"	$4.62
1A1	Cont	120AC	675	3 oz. at ⅛"	0.5 oz. at ⅜"	4.62



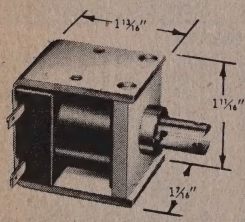
NO. 2 AC*

Box-frame solenoid in two pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: 10 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
2	Inter	120AC	60	45 oz. at ⅛"	11 oz. at ⅞"	$5.96
2	Cont	120AC	166	14 oz. at ⅛"	3 oz. at ⅜"	6.04

See listing at top of page for lead wire adapters.



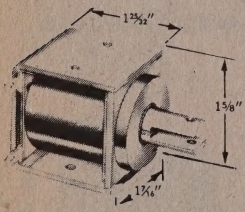
NO. 2HD AC or DC*

Heavy duty, long life box-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
2HD	Inter	120AC	36	70 oz. at ⅛"	16 oz. at ¾"	$10.21
2HD	Cont	120AC	113	25 oz. at ⅛"	6 oz. at ¾"	10.21
2HD	Inter	24DC	20	96 oz. at ⅛"	10 oz. at ¾"	10.52
2HD	Cont	24DC	64	48 oz. at ⅛"	6 oz. at ⅜"	10.52

See listing at top of page for lead wire adapters.



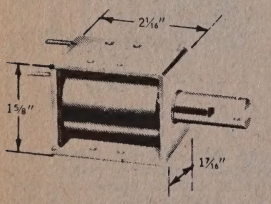
NO. 3HD DC*

Heavy duty box-frame solenoid in two pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: .187" QC. Shipping weight: 14 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
3HD	Inter	24DC	21	160 oz. at 1/16"	10 oz. at ¾"	$7.42
3HD	Cont	24DC	52	100 oz. at 1/16"	4 oz. at ¾"	7.42

Uniguard® II leads described above may also be used with this solenoid.

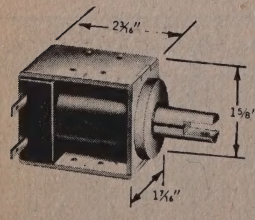


NO. 4 AC or DC*

Box-frame solenoid in six pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: External leads. Shipping weight: 14.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
4	Inter	120AC	37	36 oz. at ⅛"	26 oz. at 1"	$7.46
4	Cont	120AC	133	8 oz. at ⅛"	7 oz. at 1"	7.46
4	Inter	24DC	15	115 oz. at ⅛"	16 oz. at 1"	7.46
4	Cont	24DC	54	63 oz. at ⅛"	6 oz. at ⅛"	7.46
4	Inter	110DC	346	115 oz. at ⅛"	16 oz. at 1"	7.46
4	Cont	110DC	1300	63 oz. at ⅛"	6 oz. at ⅛"	7.46



NO. 4HD AC or DC*

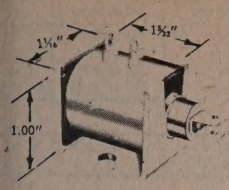
Heavy duty box-frame solenoid in six pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: 16 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
4HD	Inter	120AC	15	100 oz. at ⅛"	32 oz. at 1¼"	$7.55
4HD	Cont	120AC	53	23 oz. at ⅛"	11 oz. at 1¼"	7.55
4HD	Inter	24DC	15	145 oz. at ⅛"	23 oz. at ¾"	7.55
4HD	Cont	24DC	50	75 oz. at ⅛"	8 oz. at ¾"	7.55
4HD	Inter	110DC	350	145 oz. at ⅛"	23 oz. at ¾"	7.55
4HD	Cont	110DC	1200	75 oz. at ⅛"	8 oz. at ¾"	7.55

See listing at top of page for lead wire adapters.

* Recognized under the Component Program of Underwriters' Laboratories, Inc.



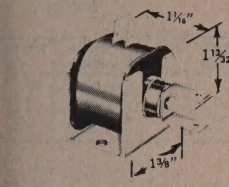
NO. 9 AC or DC

U-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: .187" QC. Shipping weight: 4 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
9	Inter	120AC	220	18 oz. at 1/8"	7 oz. at 1/2"	$4.43
9	Cont	120AC	350	11 oz. at 1/8"	2 oz. at 1/2"	4.43
9	Inter	24DC	52	14 oz. at 1/8"	2 oz. at 1/2"	4.43
9	Cont	24DC	90	9 oz. at 1/8"	1.5 oz. at 1/2"	4.43

Uniguard® II leads may also be used with this solenoid.



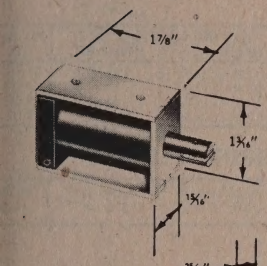
NO. 10 AC or DC

U-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: .187" QC. Shipping weight: 6.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
10	Inter	120AC	74	42 oz. at 1/8"	25 oz. at 1/2"	$4.60
10	Cont	120AC	172	15 oz. at 1/8"	7 oz. at 1/2"	4.60
10	Inter	24DC	37	24 oz. at 1/8"	5 oz. at 1/2"	4.60
10	Cont	24DC	69	15 oz. at 1/8"	3.5 oz. at 1/2"	4.60

Uniguard® II leads may also be used with this solenoid.



NO. 11 AC or DC*

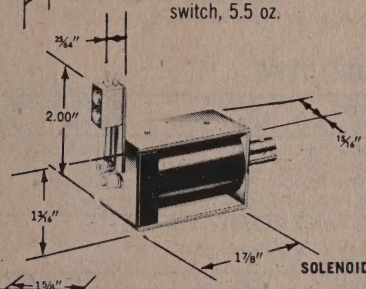
Box-frame solenoid in 20 models and a choice of pull type, push type or solenoid switch. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: Pull type, 5 oz.; push type or solenoid switch, 5.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
11	Inter	24AC	3.5	21 oz. at 1/8"	11 oz. at 3/4"	$4.16
11	Cont	24AC	8	12 oz. at 1/8"	6 oz. at 3/4"	4.16
11	Inter	120AC	85	21 oz. at 1/8"	11 oz. at 3/4"	4.16
11	Cont	120AC	200	12 oz. at 1/8"	6 oz. at 3/4"	4.16
11	Inter	6DC	2	40 oz. at 1/8"	6 oz. at 3/4"	4.16
11	Cont	6DC	4.5	24 oz. at 1/8"	3 oz. at 3/4"	4.16
11	Inter	24DC	31	40 oz. at 1/8"	6 oz. at 3/4"	4.16
11	Cont	24DC	72	24 oz. at 1/8"	3 oz. at 3/4"	4.16

PUSH TYPE

11P	Inter	24AC	3.5	16.8 oz. at 1/8"	8.8 oz. at 3/4"	$4.82
11P	Cont	24AC	8	9.6 oz. at 1/8"	4.8 oz. at 3/4"	4.82
11P	Inter	120AC	85	16.8 oz. at 1/8"	8.8 oz. at 3/4"	4.82
11P	Cont	120AC	200	9.6 oz. at 1/8"	4.8 oz. at 3/4"	4.82
11P	Inter	6DC	2	32 oz. at 1/8"	4.8 oz. at 3/4"	4.82
11P	Cont	6DC	4.5	19.2 oz. at 1/8"	2.4 oz. at 3/4"	4.82
11P	Inter	24DC	31	32 oz. at 1/8"	4.8 oz. at 3/4"	4.82
11P	Cont	24DC	72	19.2 oz. at 1/8"	2.4 oz. at 3/4"	4.82

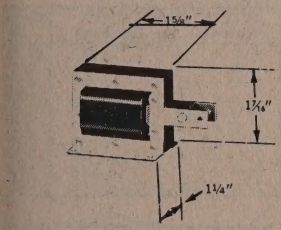


SOLENOID WITH SWITCH

SOLENOID SWITCH - SPDT — 10 AMP

11S	Inter	120AC	85	21 oz. at 1/8"	11 oz at 3/4"	$5.53
11S	Cont	120AC	200	12 oz. at 1/8"	6 oz. at 3/4"	5.53
11S	Inter	24DC	31	40 oz. at 1/8"	6 oz. at 3/4"	5.53
11S	Cont	24DC	72	24 oz. at 1/8"	3 oz. at 3/4"	5.53

See listing for lead wire adapters.

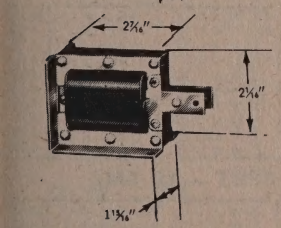


NO. 12 AC *

Efficient laminated solenoid in two pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: External leads. Shipping weight: 6 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
12	Inter	120AC	100	48 oz. at 1/8"	9 oz. at 1/8"	$6.20
12	Cont	120AC	150	28 oz. at 1/8"	6 oz. at 1/8"	6.20

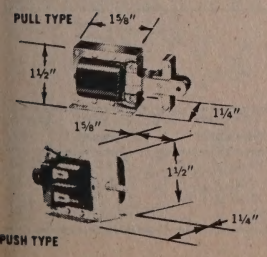


NO. 14 AC *

Efficient laminated solenoid in two pull type models. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: External leads. Shipping weight: 9 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
14	Inter	120AC	11	108 oz. at 1/8"	56 oz. at 1 1/2"	$8.65
14	Cont	120AC	18	75 oz. at 1/8"	40 oz. at 1 1/2"	8.65



NO. 16 AC*

Efficient laminated solenoid in six models and a choice of pull or push type. Insulation material: Class "A" (110°C). Coil finish: Uni-Guard® molded polyester. Termination: Dual purpose, solder lugs or .187" QC. Shipping weight: 7.5 oz.

See listing at top of page 3 for lead wire adapters.

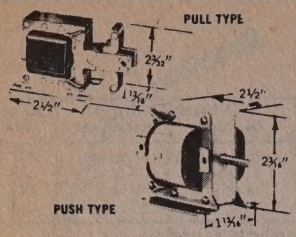
PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
16	Inter	120AC	41	110 oz. at 1/8"	28 oz. at 3/4"	$6.26
16	Cont	120AC	85	63 oz. at 1/8"	15 oz. at 3/4"	6.26
16	Inter	240AC	200	110 oz. at 1/8"	28 oz. at 3/4"	6.30
16	Cont	240AC	350	63 oz. at 1/8"	15 oz. at 3/4"	6.30

PUSH TYPE

16P	Inter	120AC	41	88 oz. at 1/8"	22.5 oz. at 3/4"	$7.18
16P	Cont	120AC	85	50.5 oz. at 1/8"	12 oz. at 3/4"	7.18

*** Recognized under the Component Program of Underwriters' Laboratories.**



NO. 18 AC*

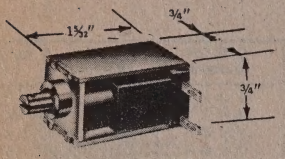
Efficient laminated solenoid in six models and a choice of pull or push type. Insulation material: Class "A" (110°C). Coil finish: Acetate yarn, coalesced with acetone. Termination: Solder lugs. Shipping weight: 16.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
18	Inter	120AC	8.8	350 oz. at 1/8"	208 oz. at 7/16"	$8.21
18	Cont	120AC	19.7	152 oz. at 1/8"	100 oz. at 7/16"	8.21
18	Inter	240AC	45	350 oz. at 1/8"	208 oz. at 7/16"	8.34
18	Cont	240AC	78	152 oz. at 1/8"	100 oz. at 7/16"	8.34

PUSH TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
18P	Inter	120AC	8.8	315 oz. at 1/8"	187 oz. at 7/16"	$9.68
18P	Cont	120AC	19.7	137 oz. at 1/8"	90 oz. at 7/16"	9.68



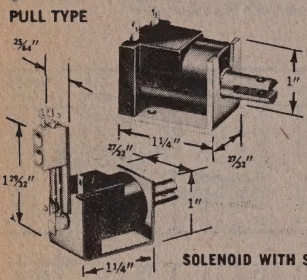
NO. 22 DC*

Box-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .110" QC lugs. Shipping weight: 1.75 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
22	Inter	6DC	4	20 oz. at 1/16"	2 oz. at 3/8"	$3.46
22	Cont	6DC	9	12 oz. at 1/16"	1.7 oz. at 3/8"	3.46
22	Inter	24DC	60	20 oz. at 1/16"	2 oz. at 3/8"	3.46
22	Cont	24DC	144	12 oz. at 1/16"	1.7 oz. at 3/8"	3.46

See listing for lead wire adapters.



NO. 24 AC or DC*

U-frame solenoid in six models and a choice of pull or solenoid switch. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: Pull type, 5 oz.; solenoid switch, 5.5 oz.

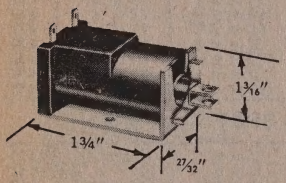
PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
24	Inter	120AC	310	17 oz. at 1/16"	4 oz. at 5/8"	$4.02
24	Cont	120AC	500	10 oz. at 1/16"	2 oz. at 3/8"	4.02
24	Inter	24DC	52	27 oz. at 1/16"	4 oz. at 1/2"	4.02
24	Cont	24DC	114	13 oz. at 1/16"	1.5 oz. at 1/2"	4.02

SOLENOID SWITCH - SPDT — 10 AMP

24S	Inter	24DC	52	27 oz. at 1/16"	4 oz. at 1/2"	$8.58
24S	Cont	24DC	114	13 oz. at 1/16"	1.5 oz. at 1/2"	8.58

See listing for lead wire adapters.



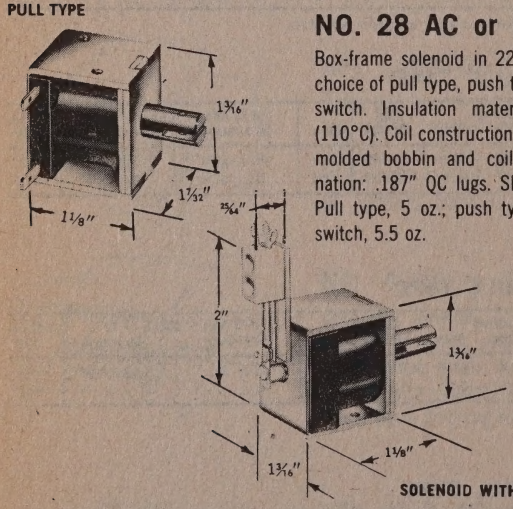
NO. 26 AC or DC*

U-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: 6 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
26	Inter	120AC	140	32 oz. at 1/16"	4 oz. at 7/8"	$4.24
26	Cont	120AC	250	17 oz. at 1/16"	6 oz. at 5/8"	4.24
26	Inter	24DC	33	46 oz. at 1/16"	4 oz. at 3/4"	4.02
26	Cont	24DC	85	26 oz. at 1/16"	1 oz. at 1/2"	4.02

See listing for lead wire adapters.



NO. 28 AC or DC*

Box-frame solenoid in 22 models and a choice of pull type, push type or solenoid switch. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .187" QC lugs. Shipping weight: Pull type, 5 oz.; push type or solenoid switch, 5.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
28	Inter	24AC	7.5	40 oz. at 1/16"	7 oz. at 1/2"	$3.72
28	Cont	24AC	17.4	24 oz. at 1/16"	5 oz. at 1/2"	3.72
28	Inter	120AC	220	40 oz. at 1/16"	7 oz. at 1/2"	4.02
28	Cont	120AC	400	24 oz. at 1/16"	5 oz. at 1/2"	4.02
28	Inter	6DC	3.3	40 oz. at 1/16"	3 oz. at 1/2"	3.70
28	Cont	6DC	7.7	25 oz. at 1/16"	2 oz. at 1/2"	3.70
28	Inter	12DC	13	40 oz. at 1/16"	3 oz. at 1/2"	3.70
28	Cont	12DC	27	25 oz. at 1/16"	2 oz. at 1/2"	3.70
28	Inter	24DC	50	40 oz. at 1/16"	3 oz. at 1/2"	3.70
28	Cont	24DC	104	25 oz. at 1/16"	2 oz. at 1/2"	3.70

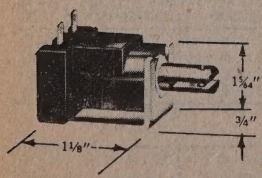
PUSH TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
28P	Inter	24AC	7.5	32 oz. at 1/16"	5.6 oz. at 1/2"	$4.25
28P	Cont	24AC	17.4	19.2 oz. at 1/16"	4 oz. at 1/2"	4.25
28P	Inter	120AC	220	32 oz. at 1/16"	5.6 oz. at 1/2"	4.55
28P	Cont	120AC	400	19.2 oz. at 1/16"	4 oz. at 1/2"	4.55
28P	Inter	6DC	3.3	32 oz. at 1/16"	2.4 oz. at 1/2"	4.10
28P	Cont	6DC	7.7	20 oz. at 1/16"	1.6 oz. at 1/2"	4.10
28P	Inter	12DC	13	32 oz. at 1/16"	2.4 oz. at 1/2"	4.10
28P	Cont	12DC	27	20 oz. at 1/16"	1.6 oz. at 1/2"	4.10
28P	Inter	24DC	50	32 oz. at 1/16"	2.4 oz. at 1/2"	4.10
28P	Cont	24DC	104	20 oz. at 1/16"	1.6 oz. at 1/2"	4.10

SOLENOID SWITCH - SPDT — 10 AMP

28S	Inter	24DC	50	40 oz. at 1/16"	3 oz. at 1/2"	$4.87
28S	Cont	24DC	104	25 oz. at 1/16"	2 oz. at 1/2"	$4.87

See listing for lead wire adapters.



NO. 34 AC or DC*

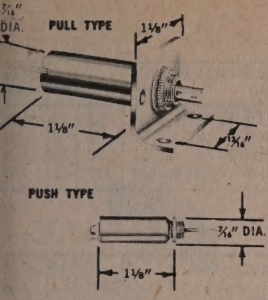
U-frame solenoid in four pull type models. Insulation material: Class "A" (110°C). Coil construction: Uni-Guard® II molded bobbin and coil cover. Termination: .110" QC lugs. Shipping weight: 3 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	Ohms	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Net Ea. 1-24
34	Inter	120AC	400	18 oz. at 1/16"	4.5 oz. at 3/8"	$3.30
34	Cont	120AC	865	9 oz. at 1/16"	1.5 oz. at 3/8"	3.30
34	Inter	24DC	66	14 oz. at 1/16"	2.5 oz. at 1/4"	3.30
34	Cont	24DC	145	6.5 oz. at 1/16"	1.8 oz. at 1/4"	3.30

See listing for lead wire adapters.

* Recognized under the Component Program of Underwriters' Laboratories, Inc.



NO. T3.5 x 9*

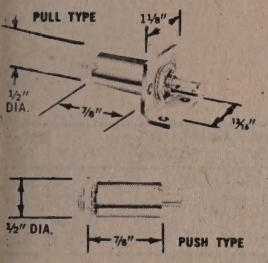
Tubular solenoid in eight models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: 5/16"-32. Shipping weight: .9 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net Ea. 1-24
T3.5 x 9	Inter	12DC	8.5 oz. at 1/32"	1.2 oz. at ½"	14	10	$5.06
T3.5 x 9	Cont	12DC	5.5 oz. at 1/32"	.75 oz. at 5/16"	80	2	5.33
T3.5 x 9	Inter	24DC	8.5 oz. at 1/32"	1.2 oz. at ½"	57	10	5.06
T3.5 x 9	Cont	24DC	5.5 oz. at 1/32"	.75 oz. at 5/16"	260	2	5.33

PUSH TYPE

TP3.5x9	Inter	12DC	6.8 oz. at 1/32"	.96 oz. at ½"	14	10	$6.13
TP3.5x9	Cont	12DC	4.4 oz. at 1/32"	.6 oz. at 5/16"	80	2	6.38
TP3.5x9	Inter	24DC	6.8 oz. at 1/32"	.96 oz. at ½"	57	10	6.13
TP3.5x9	Cont	24DC	4.4 oz. at 1/32"	.6 oz. at 5/16"	260	2	6.38



NO. T4 x 7*

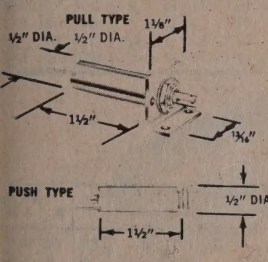
Tubular solenoid in six models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: ⅜"-32. Shipping weight: 1.1 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T4 x 7	Inter	12DC	12 oz. at 1/32"	.8 oz. at 3/8"	20	7	$5.21
T4 x 7	Cont	12DC	6 oz. at 1/32"	1 oz. at 3/16"	60	2.4	5.33
T4 x 7	Inter	24DC	12 oz. at 1/32"	.8 oz. at 3/8"	80	7	5.21
T4 x 7	Cont	24DC	6 oz. at 1/32"	1 oz. at 3/16"	240	2.4	5.33

PUSH TYPE

TP4 x 7	Inter	24DC	9.6 oz. at 1/32"	.64 oz. at 3/8"	80	7	$6.43
TP4 x 7	Cont	24DC	4.8 oz. at 1/32"	.8 oz. at 3/16"	240	2.4	6.53



NO. T4 x 12*

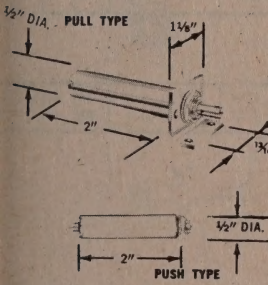
Tubular solenoid in six models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: ⅜"-32. Shipping weight: 1.7 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T4 x 12	Inter	12DC	14 oz. at 1/32"	1.5 oz. at ⅞"	10	15	$5.36
T4 x 12	Cont	12DC	7 oz. at 1/32"	1.5 oz. at ¼"	41	3.5	5.48
T4 x 12	Inter	24DC	14 oz. at 1/32"	1.5 oz. at ⅞"	38	15	5.36
T4 x 12	Cont	24DC	7 oz. at 1/32"	1.5 oz. at ¼"	160	3.5	5.48

PUSH TYPE

TP4 x 12	Inter	24DC	11.2 oz. at 1/32"	1.2 oz. at ⅜"	38	15	$6.32
TP4 x 12	Cont	24DC	5.6 oz. at 1/32"	1.2 oz. at ¼"	160	3.5	6.57



NO. T4 x 16*

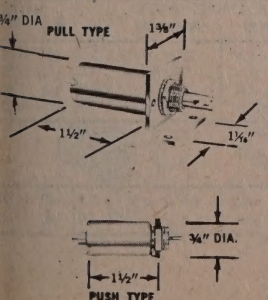
Tubular solenoid in eight models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: ⅜"-32. Shipping weight: 1.9 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T4 x 16	Inter	12DC	7 oz. at 1/16"	4 oz. at 1"	6	20	$5.92
T4 x 16	Cont	12DC	6.5 oz. at 1/16"	1.5 oz. at ⅞"	36	4	5.94
T4 x 16	Inter	24DC	7 oz. at 1/16"	4 oz. at 1"	24	20	5.92
T4 x 16	Cont	24DC	6.5 oz. at 1/16"	1.5 oz. at ⅞"	145	4	5.94

PUSH TYPE

TP4 x 16	Inter	12DC	5.6 oz. at 1/16"	3.2 oz. at 1"	6	20	$7.14
TP4 x 16	Cont	12DC	5.2 oz. at 1/16"	1.2 oz. at ⅞"	36	4	7.16
TP4 x 16	Inter	24DC	5.6 oz. at 1/16"	3.2 oz. at 1"	24	20	7.14
TP4 x 16	Cont	24DC	5.2 oz. at 1/16"	1.2 oz. at ⅞"	145	4	7.16



NO. T6 x 12*

Tubular solenoid in eight models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: 15/32"-32. Shipping weight: 3 oz.

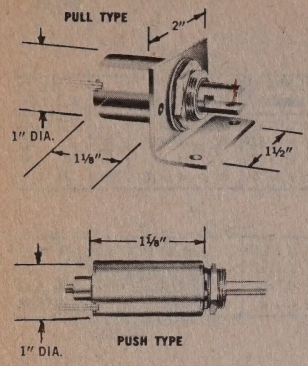
PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T6 x 12	Inter	12DC	30 oz. at 1/16"	4 oz. at ¾"	6.5	22	$5.63
T6 x 12	Cont	12DC	12 oz. at 1/16"	1 oz. at ¾"	41	3.5	5.74
T6 x 12	Inter	24DC	30 oz. at 1/16"	4 oz. at ⅛"	25	22	5.63
T6 x 12	Cont	24DC	12 oz. at 1/16"	1 oz. at ¼"	165	3.5	5.74

PUSH TYPE

TP6 x 12	Inter	12DC	24 oz. at 1/16"	3.2 oz. at ⅛"	6.5	22	$6.41
TP6 x 12	Cont	12DC	9.6 oz. at 1/16"	.8 oz. at ¾"	41	3.5	6.51
TP6 x 12	Inter	24DC	24 oz. at 1/16"	3.2 oz. at ¾"	25	22	6.41
TP6 x 12	Cont	24DC	9.6 oz. at 1/16"	.8 oz. at ¼"	165	3.5	6.51

* Recognized under the Component Program of Underwriters' Laboratories.



NO. T8 x 9*

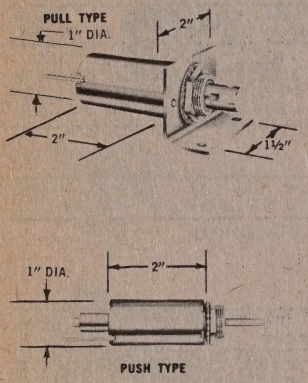
Tubular solenoid in six models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: ¾"-24. Shipping weight: 6 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T8 x 9	Inter	12DC	52 oz. at 1/16"	6 oz. at 7/16"	7.5	19	$6.28
T8 x 9	Cont	12DC	23 oz. at 1/16"	3 oz. at 7/16"	36	4	6.41
T8 x 9	Inter	24DC	52 oz. at 1/16"	6 oz. at 7/16"	30	19	6.28
T8 x 9	Cont	24DC	23 oz. at 1/16"	3 oz. at 7/16"	145	4	6.41

PUSH TYPE

TP8 x 9	Inter	24DC	41.6 oz. at 1/16"	4.8 oz. at 7/16"	30	19	$7.94
TP8 x 9	Cont	24DC	18.4 oz. at 1/16"	2.4 oz. at 7/16"	145	4	8.06



NO. T8 x 16*

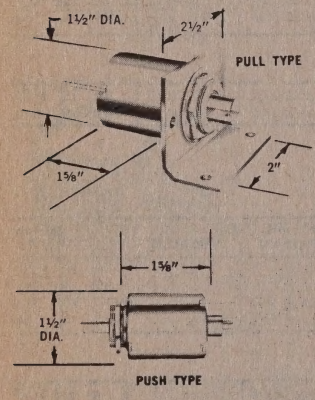
Tubular solenoid in eight models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: ¾"-24. Shipping weight: 7.8 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T8 x 16	Inter	12DC	80 oz. at 1/16"	14 oz. at ⅛"	2.7	38	$6.88
T8 x 16	Cont	12DC	35 oz. at 1/16"	5.5 oz. at ⅛"	26	5.5	6.93
T8 x 16	Inter	24DC	80 oz. at 1/16"	14 oz. at ⅛"	15	38	6.88
T8 x 16	Cont	24DC	35 oz. at 1/16"	5.5 oz. at ⅛"	105	5.5	6.93

PUSH TYPE

TP8 x 16	Inter	12DC	64 oz. at 1/16"	11.2 oz. at ⅛"	2.7	38	$7.98
TP8 x 16	Cont	12DC	28 oz. at 1/16"	4.4 oz. at ⅛"	26	5.5	8.17
TP8 x 16	Inter	24DC	64 oz. at 1/16"	11.2 oz. at ⅛"	15	38	7.98
TP8 x 16	Cont	24DC	28 oz. at 1/16"	4.4 oz. at ⅛"	105	5.5	8.17



NO. T12 x 13*

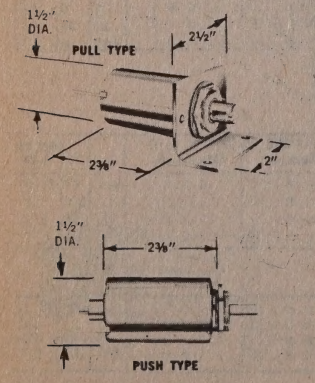
Tubular solenoid in six models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: 1"-27. Shipping weight: 10.5 oz.

PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T12 x 13	Inter	12DC	150 oz. at ⅛"	14 oz. at ¾"	3.6	40	$9.32
T12 x 13	Cont	12DC	50 oz. at ⅛"	4 oz. at ¾"	20	7	9.35
T12 x 13	Inter	24DC	150 oz. at ⅛"	14 oz. at ¾"	14	40	9.32
T12 x 13	Cont	24DC	50 oz. at ⅛"	4 oz. at ¾"	85	7	9.35

PUSH TYPE

TP12x13	Inter	24DC	120 oz. at ⅛"	11.2 oz. at ¾"	14	40	$10.12
TP12x13	Cont	24DC	40 oz. at ⅛"	3.2 oz. at ¾"	85	7	10.16



NO. T12 x 19*

Tubular solenoid in six models including choice of either pull or push type operation. New notched assembly of shell and bushing permits tightening of mounting nut without damaging coil. Insulation material: Class "A" (110°C). Termination: 6 inch leads. Mounting hardware included. Mounting thread size: 1"-27. Shipping weight: 21.4 oz.

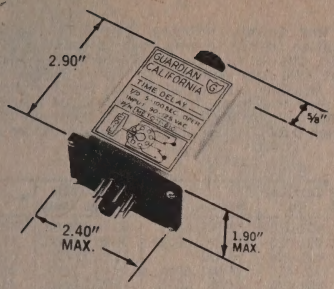
PULL TYPE

Guardian No.	Duty	Coil Voltage	LIFTS AND STROKES @ 25°C (Minimum)	(Maximum)	Ω	W.	Net ea. 1-24
T12 x 19	Inter	12DC	150 oz. at ⅛"	12 oz. at 1½"	2.4	60	$9.91
T12 x 19	Cont	12DC	80 oz. at ⅛"	5 oz. at 1½"	14	10	10.00
T12 x 19	Inter	24DC	150 oz. at ⅛"	12 oz. at 1½"	9.5	60	9.91
T12 x 19	Cont	24DC	80 oz. at ⅛"	5 oz. at 1½"	59	10	10.00

PUSH TYPE

TP12x19	Inter	24DC	120 oz. at ⅛"	9.6 oz. at 1½"	9.5	60	$11.36
TP12x19	Cont	24DC	64 oz. at ⅛"	4 oz. at 1½"	59	10	11.45

* Recognized under the Component Program of Underwriters' Laboratories, Inc.



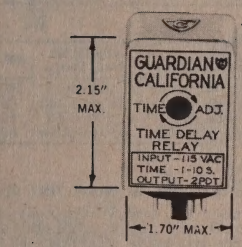
MET SERIES — Time Delay on Operate or on Release

The MET Series of Time Delays are designed to replace many expensive units now on the market. They offer close tolerance repeatability at a low price. Designed for on-operate and on-release, with a range of .5 to 300 seconds, these low cost Time Delays provide a DPDT relay output of 10 amp resistive, 120 VAC, 50-60 Hz and operate on inputs of 120 VAC, 50-60 Hz, 24 VDC, 50-60 Hz or 24 VDC, polarity protected. These new Time Delays feature accuracy of ±10% of nominal setting over voltage and temperature range, repeatability to 1% within fixed conditions, a single turn potentiometer and time delays of .5 to 15, .5 to 100 and 100 to 300 seconds over a temperature range of 0°C to 55°C.

Guardian No.	Volts	Delay Range (Sec.)	Net ea.
MET-0-100-24A	24VAC	.5 to 100	$20.62
MET-0-300-24A	24VAC	100 to 300	21.88
MET-0-015-120A	120VAC	.5 to 15	19.62
MET-0-100-120A	120VAC	.5 to 100	20.15
MET-0-300-120A	120VAC	100 to 300	21.88
MET-0-015-24D	24VDC	.5 to 15	20.10
MET-0-100-24D	24VDC	.5 to 100	20.62
MET-0-300-24D	24VDC	100 to 300	21.88

Guardian No.	Volts	Delay Range (Sec.)	Net ea.
MET-R-100-24A	24VAC	.5 to 100	$30.04
MET-R-300-24A	24VAC	100 to 300	30.82
MET-R-015-120A	120VAC	.5 to 15	28.69
MET-R-100-120A	120VAC	.5 to 100	29.21
MET-R-300-120A	120VAC	100 to 300	30.02
MET-R-015-24D	24VDC	.5 to 15	29.53
MET-R-100-24D	24VDC	.5 to 100	30.05
MET-R-300-24D	24VDC	100 to 300	30.82

0 in part number indicates delay on operate, R delay on release.

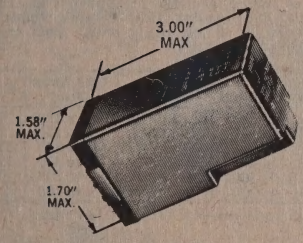


BDT SERIES — Time Delay on Operate

A Time Delay with unusual features which include operation on high or low line, repeatability, temperature stability and small size. The time Delay incorporates all silicon transistor circuits that operate over a wide input range of 75-125 VAC, 50-60 Hz and draw only 5 mA prior to time out. 24 VDC units also available. Enclosed in a standard relay housing, terminated with an octal plug (8 pin), they are available with time delay periods from 1-10 to 10-60 seconds adjustable. BDT Time Delays operate in the most severe industrial applications. The solid state circuit is immune to most transient noise found on commercial power lines. Voltage up to 2500 volts peak (short duration) can be tolerated. In the area of machine control, where large numbers of control cycles are expected, the solid state timing control has the minimum capabilityof 5 x 10⁷ operations under normal conditions with 5 amp. DPDT relay output.

Guardian No.	Volts	Delay Range (Sec.)	Net ea.
BDT-0-10-120A	120VAC	1 to 10	$24.62
BDT-0-60-120A	120VAC	10 to 60	26.21

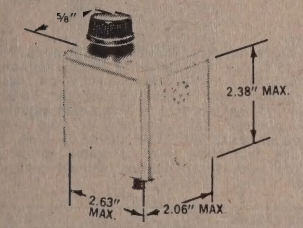
Guardian No.	Volts	Delay Range (Sec.)	Net ea.
BDT-0-10-24D	24VDC	1 to 10	$24.62
BDT-0-60-24D	24VDC	10 to 60	26.21



TD SERIES TIME DELAY

The most accurate, compact time-delay relay available from stock. Adjustable delays from 1 to 180 seconds. 15 turn potentiometer provides high adjustment resolution. Accurate to 5% of nominal setting over complete temp. and voltage range. Repeatability, 2% after line interruption of 50 MS. Delays on attract. 3PDT contacts rated at 10 amps resistive.

Guardian No.	Volts	Delay Range (Sec.)	Net ea.
TD-33C15-24D	24VDC	1 to 15	$26.68
TD-33C60-24D	24VDC	10 to 60	27.77
TD-33C180-24D	24VDC	50 to 180	35.37
TD-63C15-120A	120VAC	1 to 15	32.74
TD-63C60-120A	120VAC	10 to 60	33.14
TD-63C180-120A	120VAC	50 to 180	40.62



TDO SERIES TIME DELAY

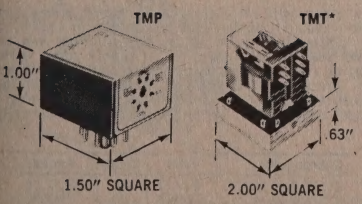
Series TDO incorporates many features of more expensive units, but is most economical, offering contacts rated at 5 amps, DPDT, 120 VAC with adjustable delay of 0.5 to 30 seconds on attract with a ten turn potentiometer. Repeatability is within 5% after a line interruption of 100 milliseconds. Standard unit available is 120 VAC.

Guardian No.	Volts	Delay Range (Sec.)	Net ea.
TDO-62C30-120A	120VAC	.5 to 30	$19.43

TMP & TMT SERIES TIMING MODULES

Series TMP/TMT Time Delay Modules are available in "on operate" and "on release" configurations with two time delays and three standard input voltage ranges. Time delay is externally adjustable within two ranges from ½ to 100 seconds and 100 to 300 seconds. Repeatability is ±1% under normal conditions. Life expectancy is one million cycles. Standard input voltages are 24 VAC, 120 VAC and 24 VDC. TMP is terminated in an octal plug for quick mounting and remote control of relay and other switching devices. The TMT "Flat Pack" package was designed to accept Guardian relays mounted to it, or to allow stacking of modules for extension of timing periods, or direct installation into a printed circuit board.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

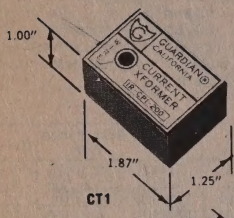


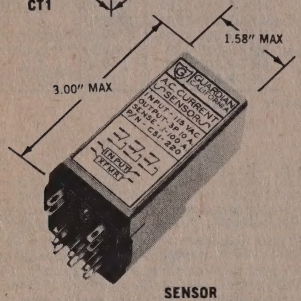
Guardian No.	Volts	Time Range (Sec.)	Net ea.
TMT-0-100-24D	24VDC	.5 to 100	$12.78
TMT-0-300-24D	24VDC	100 to 300	16.28
TMT-0-100-24A	24VAC	.5 to 100	13.64
TMT-0-300-24A	24VAC	100 to 300	17.15
TMT-0-100-120A	120VAC	.5 to 100	12.78
TMT-0-300-120A	120VAC	100 to 300	16.28
TMT-R-100-24D	24VDC	.5 to 100	17.20
TMT-R-300-24D	24VDC	100 to 300	20.64
TMT-R-100-24A	24VAC	.5 to 100	17.71
TMT-R-300-24A	24VAC	100 to 300	21.16
TMT-R-100-120A	120VAC	.5 to 100	17.20
TMT-R-300-120A	120VAC	100 to 300	20.64

*Relay illustrated with Model TMT not included in TMT prices.

Guardian No.	Volts	Time Range (Sec.)	Net ea.
TMP-0-100-24D	24VDC	.5 to 100	$14.24
TMP-0-300-24D	24VDC	100 to 300	16.81
TMP-0-100-24A	24VAC	.5 to 100	14.78
TMP-0-300-24A	24VAC	100 to 300	17.37
TMP-0-100-120A	120VAC	.5 to 100	14.24
TMP-0-300-120A	120VAC	100 to 300	16.81
TMP-R-100-24D	24VDC	.5 to 100	19.27
TMP-R-300-24D	24VDC	100 to 300	21.89
TMP-R-100-24A	24VAC	.5 to 100	19.79
TMP-R-300-24A	24VAC	100 to 300	22.23
TMP-R-100-120A	120VAC	.5 to 100	19.27
TMP-R-300-120A	120VAC	100 to 300	21.89

0 in part number indicates delay on operate, R delay on release.





PROTECTIVE SENSORS

A complete line of industrial sensors is available from Guardian including 3-phase (IR-AV2), Close Differential (IR-VS3), Over-Voltage (IR-VS1), Under-Voltage (IR-VS2), 4 wire Phase Sequence (IR-PR1), Adjustable Frequency (IR-FS1) and AC Current Sensors (CS1 Sensor with CT1 XFormer). These sensors are bi-products of designs for military application with solid state networks. The relay is 3PDT 10 amps resistive with 24 VDC, 24 VAC or 120 VAC, available. Mounting is by socket, chassis mount or directly into a printed circuit (110). Temperature range is from 0°C to +50°C. Life is 100,000 operations minimum and protection for transient voltages is to 600 volts for the 3 phase model, 2500 volts for all others. All units come with a dust cover enclosure except the CT1 series which is a transfer molded part.

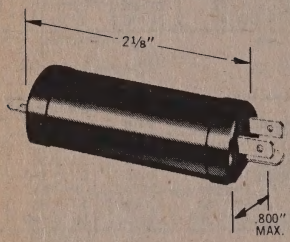
Guardian No.	Nom. Input	Current Sensing Range	Net ea.
CS1-220	90-125 VAC, 50-60 Hz		
CT1-201		.1 to 1.5A, 50-60 Hz	$35.50
CT1-202		1 to 10A, 50-60 Hz	17.76
CT1-203		5 to 50A, 50-60 Hz	16.32
CT1-204		10 to 100A, 50-60 Hz	16.32

Guardian No.	Nominal Input (VAC, Hz)	Sense Point	Differential	Net ea.
AV2-611	120, 60			$37.85
AV2-621	120, 400			37.85
VS3-610	120, 60	105 to 130*	2.5 to 15*	60.42
VS3-620	120, 400	105 to 130*	2.5 to 15*	60.42
VS3-300	24VDC	23 to 32†	1 to 5†	60.53
VS3-410	24, 60	23 to 32*	1 to 5*	59.63
VS3-420	24, 400	23 to 32*	1 to 5*	59.63

* VAC † VDC

Guardian No.	Nominal Input	Adjustable Voltage Range	Net ea.
VS1-610	120VAC, 60Hz	90 to 130VAC	$47.32
VS1-620	120VAC, 400Hz	90 to 130VAC	47.32
VS1-300	24VDC	18 to 32VDC	47.76
VS1-410	24VAC, 60Hz	18 to 32VAC	46.53
VS1-420	24VAC, 400Hz	18 to 32VAC	46.53
VS2-610	120VAC, 60Hz	90 to 130VAC	47.29
VS2-620	120VAC, 400Hz	90 to 130VAC	47.29
VS2-300	24VDC	18 to 32VDC	46.03
VS2-410	24VAC, 60Hz	18 to 32VAC	46.53
VS2-420	24VAC, 400Hz	18 to 32VAC	46.53
PR1-610	120VAC, 60Hz		44.12
PR1-620	120VAC, 400Hz		44.12

Guardian No.	Nominal Input	Adjustable Freq. Range	Net ea.
FS1-610	120VAC, 60Hz	45 to 66Hz	$60.86
FS1-620	120VAC, 400Hz	360 to 440Hz	60.86
FS2-610	120VAC, 60Hz	45 to 66Hz	60.86
FS2-620	120VAC, 400Hz	360 to 440Hz	60.86



SERIES 6425 INLINE TIME DELAY

REPLACES SERIES GU INLINE TIME DELAY

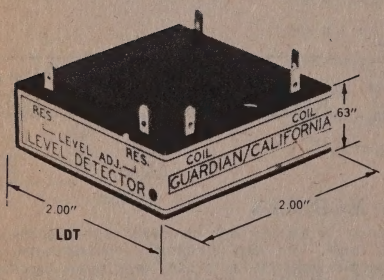
Economical, totally solid state Inline Time Delay — in an ingenious new semi-cylinder configuration that combines the low cost of tubular design with a flattened bottom for quick, easy PC board installation. Available in low (12 to 48 VDC) and high (90 to 130 VDC) voltage versions in your choice of three externally-adjustable time ranges: .1 to 10 seconds, 5 to 120 seconds and 10 to 300 seconds. Accuracy and repeatability after first time out: Accuracy, ±10% of setting for combined variations of ambient temperature and power supply regulation: Repeatability, ±2% for fixed line input. Operating temperature range of −20°C to +55°C. Minimum operations 10^7. Termination in your choice of ¼" quick connect or solid lead. Delay on operate. Adjustment by 1 meg. ohm potentiometer.

Guardian No.	Volts	Time Range (Sec.)	Net ea.
6425-2L-10	12 to 48VDC	.1 to 10	$9.72
6435-2L-10	12 to 48VDC	.1 to 10	9.81
6425-2H-10	90 to 130VDC	.1 to 10	9.72
6435-2H-10	90 to 130VDC	.1 to 10	9.81
6425-2L-120	12 to 48VDC	5 to 120	9.81
6435-2L-120	12 to 48VDC	5 to 120	9.89

6425 part number = solid lead termination.

Guardian No.	Volts	Time Range (Sec.)	Net ea.
6425-2H-120	90 to 130VDC	5 to 120	$9.81
6435-2H-120	90 to 130VDC	5 to 120	9.89
6425-2L-300	12 to 48VDC	10 to 300	11.50
6435-2L-300	12 to 48VDC	10 to 300	12.15
6425-2H-300	90 to 130VDC	10 to 300	11.50
6435-2H-300	90 to 130VDC	10 to 300	12.15

6435 part number = 3/16" QC termination.

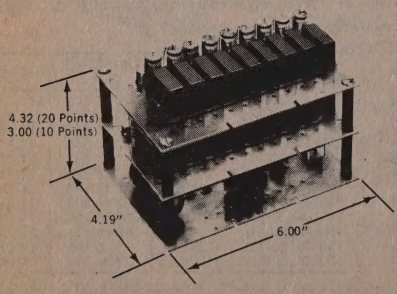


VOLTAGE LEVEL DETECTORS

Inexpensive Voltage Level Detector with unusual operating characteristics. These molded modules incorporate circuits comprised of silicon semiconductor devices to form a peak detecting voltage differential amplifier, signal amplifier and a solid state output switch suitable for driving a number of Guardian relays. The unit's sense level is adjustable (either fixed or variable) over ranges of 85-135 VAC, 50-60 Hz, 20-30 VAC, 50-60 Hz, 20-30 VDC, 180-250 VAC, 50-60 Hz by external resistance. This broad adjustment range permits operation as either an under or over level detector. Two units may be used to form band pass or pedestal level sensing. When used with Guardian Series TMT, TMP timing modules, they provide inexpensive time delayed voltage detection systems that allow them to ignore normal line fluctuations. Transient suppressed, they will withstand 2500V peak (short duration) without damage or malfunction. On DC units, transient protection is 600 volts.

Guardian No.	Volts	Net ea.
LDT-100-24A	24VAC	$16.32
LDT-100-120A	120VAC	16.32
LDT-100-240A	240VAC	21.17
LDT-100-24D	24VDC	16.64

Guardian No.	Volts	Net ea.
LDP-100-24A	24VAC	$19.73
LDP-100-120A	120VAC	19.73
LDP-100-240A	240VAC	24.58
LDP-100-24D	24VDC	19.35



SLS SOLID STATE LOGIC STEPPER

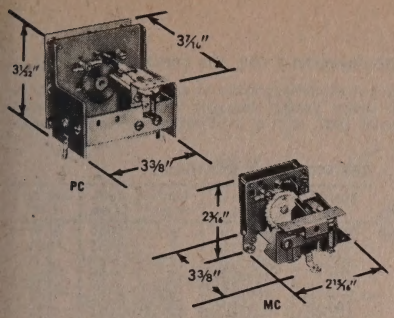
The SLS 100 Series Solid State Steppers are the only power solid state steppers to accept either high level or logic level inputs with high noise immunity for industrial applications. The output of each step is a 120 VAC 2½ amp switch. They are modularly constructed so that many configurations can be accomplished from stacked modules. Standard "off the shelf" models have ten or twenty steps. Units may be obtained with pulsers to make them self-stepping steppers. They can be cascaded or paralleled to perform complex switching and control functions. These versatile Guardian Steppers are built for operation on input power of 120 VAC, 50-60 Hz or 400 Hz and 24 VDC. All solid state construction offers the advantages of mechanical noise-free operation and, under proper operating conditions, practically unlimited life.

Guardian No.	Volts	Steps	Net ea.
SLS-110-2A111*	120VAC	10	$143.63
SLS-110-1A211*	24VDC	10	123.97
SLS-120-2A111*	120VAC	20	249.04
SLS-120-1A211*	24VDC	20	208.43
SLS-110-25111†	120VAC	10	151.80

Guardian No.	Volts	Steps	Net ea.
SLS-110-15211†	24VDC	10	$132.15
SLS-120-25111†	120VAC	20	257.30
SLS-120-15211†	24VDC	20	218.37
SLS Connector Kit			1.10

* Step advance by either mechanical switch closure or DC Pulse. † Self-stepping.
All units come with Molex connector terminations (3 sets required for 10 step unit).

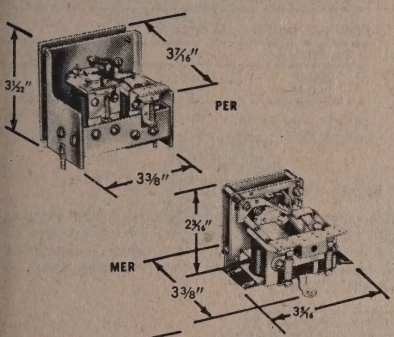
GUARDIAN® STEPPERS



CONTINUOUS ROTATION

The circuit selection wiper on Continuous Rotation Steppers moves in one direction only, upon energization of the step coil. This type of stepper is available in standard 24 point (MC) or 40 point (PC). The Guardian MC Midget Continuous Rotation Stepper is particularly adaptable to repetitive sequence functions. The 24 bridging contact deck is evenly divisible by eight possible sequences. The PC stepper features self-stepping speeds up to 30 steps per second and mechanical life expectancy of over 4,000,000 steps.

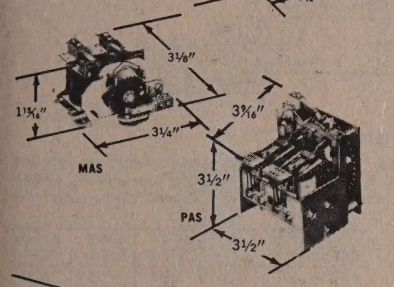
Guardian No.	Watts	Volt Amperes	No. of Points	No. of Active Contacts	Max. Steps per Second	Shipping Weight Ounces	Net Ea. 1-24
PC-120AC	20	35	40	40	20	17	$47.47
MC-120AC	17	30	24	24	20	9½	20.34



ELECTRICAL RESET

Type MER. A direct drive (steps on energization) with positive mechanical reset interlock actuated by the reset magnet and unlocked on the first energization of the step magnet. Assures positive reset on as short a pulse as one-hundredth of a second. By interconnecting two or more steppers, count can be increased to any desired total, counting by tens, or any convenient multiple. Will control a sequence of operation and then automatically reset to starting position. The circuit selecting wiper on Electrical Reset Steppers can be reset to zero or home from any desired position, by energization of the reset magnet. They are frequently employed to record counts by various numerical groups, then resetting automatically. **Type PER.** Operation same as MER but with up to 52 active contacts.

PER/40-120AC	35-7¶	60-10¶	40	36	20	22	$36.16
PER/52-120AC	65-7¶	115-10¶	52	52	20	22	39.59
MER-120AC	20-7¶	40-10¶	24	22	20	11½	23.40
MER-24DC	20-8¶		24	22	20	11½	23.40



ADD AND SUBTRACT

Add and subtract steppers are basically continuous rotation types with the added feature of being able to reverse the movement of the selecting wiper when required.

Type MAS. A midget add and subtract stepper incorporating a cam actuated switch which operates at zero position. Used primarily to indicate a zero balance between pulses supplied to the "add" coil as compared to pulses received by the "subtract" coil.

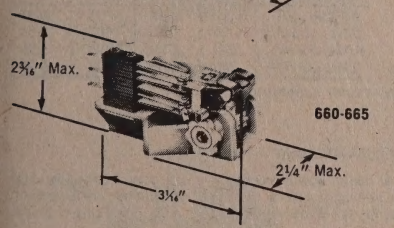
Type PAS. Bi-directional steppers whereby the selector wiper moves either direction depending on which of the coils is energized. Supplied with .058" dia. AMP quick-connect terminals arranged in circle on deck, and also includes a form "C" cam switch.

MAS-120AC	9	12	30	‡	10	11	$27.38
PAS-120AC	35	60	40	40†	29	22	38.00

SERIES 660 - 665 SEQUENCE

Intended to perform switching operations in a repetitive transfer sequence. Each electrical impulse moves the switch contacts to the opposite position in the sequence. Applications include lights, signs, motors, appliances and similar units. Contacts rated up to 15 amps at 120V, 60 Hz, non-inductive load. Shipping weight, 8 oz. Mounting: 4 holes 8-32 (NC-2B).

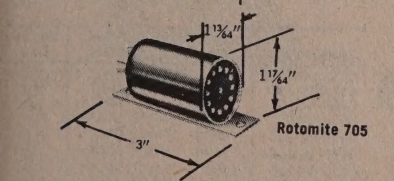
Guardian No.	Coil Voltage	Contact Comb.	Net ea. 1-24
660-C-24A	24AC	SPDT	$8.64
660-2C-24A	24AC	DPDT	9.33
660-4C-24A	24AC	4PDT	13.58
660-C-120A	120AC	SPDT	8.64
660-2C-120A	120AC	DPDT	9.33
660-4C-120A	120AC	4PDT	13.58
665-C-24D	24DC	SPDT	8.64
665-2C-24D	24DC	DPDT	9.33
665-4C-24D	24DC	4PDT	13.58



ROTOMITE STEPPER SERIES 705

An entirely new concept in stepper design, the Guardian "Rotomite" is first with maximum stepper control in minimum space. Offering high contact rating of 3 amps resistive, 1 amp inductive (50% PF). Featuring continuous duty operation with life well in excess of one million steps, the completely enclosed Rotomite is geared for continuous rotation of 12 positions. A few Rotomite applications presently include computers, business machines, lighting and vending controls, counting and sorting devices, and model trains. Shipping weight, 5 oz.

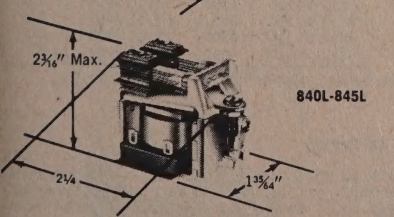
Guardian No.	No. Points	Coil Voltage	Net ea. 1-24
705-12P-6D	12	6DC	$8.50
705-12P-12D	12	12DC	8.50
705-12P-24D	12	24DC	8.50



SERIES 840L - 845L ON/OFF RELAY

SINGLE COIL IMPULSE OPERATED MECHANICAL LATCHING RELAY

Compact AC or DC Latching Relay for positive on/off control of positioning devices, remote controls, lighting circuits and many additional applications. SPDT, DPDT or 4PDT contact combinations. Impulse as short as 20 MS energizes coil to reverse position of switches. Holds last position of switch with coil de-energized. Contacts rated for 10 amps at 120 VAC, 60 Hz non-inductive. Power requirement: 8.2 volt-amperes. Solder lug terminals for coils and contacts. Shipping weight, 5.2 oz. Mounting: Single mounting hole tapped 8-32 (NC-2B).
Recognized under the Component Program of Underwriters' Laboratories, Inc.



840L-C-24A	24AC	SPDT	$6.46
840L-2C-24A	24AC	DPDT	7.79
840L-4C-24A	24AC	4PDT	11.14
840L-C-120A	120AC	SPDT	6.46
840L-2C-120A	120AC	DPDT	7.79
840L-4C-120A	120AC	4PDT	11.14
845L-C-12D	12DC	SPDT	6.46
845L-2C-12D	12DC	DPDT	7.06
845L-4C-12D	12DC	4PDT	11.14
845L-C-24D	24DC	SPDT	6.46
845L-2C-24D	24DC	DPDT	7.06
845L-4C-24D	24DC	4PDT	11.14

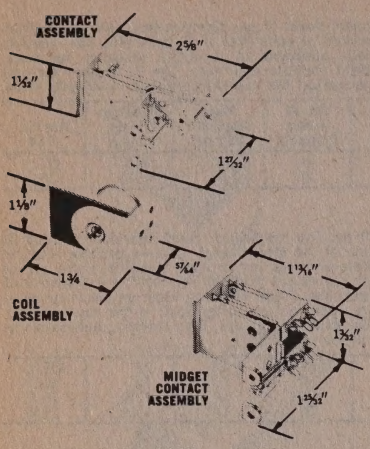
NOTES: All steppers except Series 705 are intermittent duty. All are direct-drive units with switching operation completed upon energization. All contact points are rated 1½ amps resistive at 120V, 60 Hz. Coil Voltage* are 120VAC, 60 Hz and 24DC.

* Steppers will operate satisfactorily at 15% below or 10% above rated voltage.

¶ Listings are for stepping coil and reset coil, respectively.

† Includes Zero (0) position.

‡ Zero (0) position switch only.



SERIES 200 RELAY WITH COMPLETELY INTERCHANGEABLE COIL AND CONTACT ASSEMBLIES

The coil consists of the coil and field piece; the contact assembly consists of switch blades, armature, return spring and mounting bracket. The Guardian Midget Contact Assembly is interchangeable with the standard Series 200 contact assembly. Available with SPDT, DPDT or 4PDT contact switch assemblies, each suitable for use with any AC or DC coil.

SERIES 200 RELAY

Guardian No.	Volts	Coil	Net ea. 1-24
200-6A	6	AC	$2.61
200-12A	12	AC	2.61
200-24A	24	AC	2.61
200-120A	120	AC	3.05
200-240A	240	AC	4.04
200-6D	6	DC	2.84
200-12D	12	DC	2.84
200-24D	24	DC	2.84
200-32D	32	DC	2.84
200-110D	110	DC	3.75
200-5,000D	†	DC	3.24
200-10,000D	†	DC	3.75

† Plate Circuit

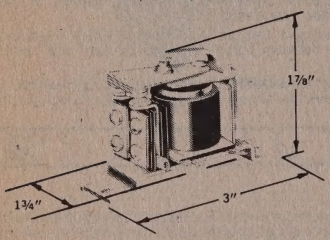
Use contact switch parts 200-3 for adding poles to contact switch assemblies 200-1 and 200-2. Use midget contact switch parts 200-M3 for adding poles to midget contact switch assemblies 200-M1 and 200-M2.

CONTACT SWITCH ASSEMBLIES

Guardian No.	Type	Cont. Amps	Cont. Comb.	Net ea. 1-24
200-1	Standard	8	SPDT	$2.40
200-2	Standard	8	DPDT	3.14
200-4	Standard	12.5	DPDT	3.53
200-5	Standard	8	4PDT	5.53
200-M1	Midget	10	SPDT	2.26
200-M2	Midget	10	DPDT	2.76
200-M5	Midget	8	4PDT	4.48

CONTACT SWITCH PARTS

Guardian No.	Type	Net ea. 1-24
200-3	Standard	$2.39
200-M3	Midget	2.39

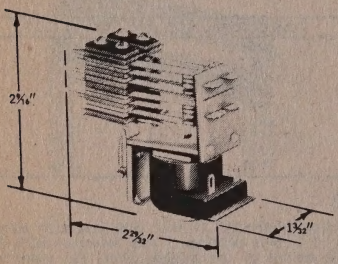


SERIES 220 HEAVY DUTY INDUSTRIAL AC RELAY — 20 AMPERE

This rugged unit makes and breaks up to 20 amps, at 240 volts. Armature is equipped with phenolic contact mounting block carrying ⅜" dual contacts. Phenolic is tested at 1500 volts breakdown to ground. Contacts are silver alloy. Relay is available in dual SPST, normally open contact combination only. Contact rating 20 amps at 60 Hz, 240 VAC non-inductive load. Mounting: Mounting holes — clearance for 8-32 with 2¹³⁄₃₂" centers. Shipping weight, 5.5 oz.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
220-A-24A	24AC	25	SPST*	$7.72
220-A-120A	120AC	600	SPST*	7.96
220-A-240A	240AC	2500	SPST*	8.38

* Normally open



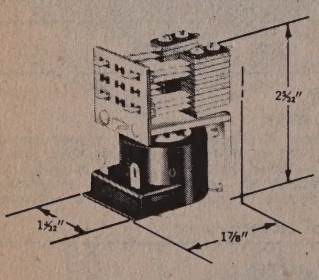
SERIES 240U - 245U 15 AMPERE RELAY

Designed for contact ratings up to 15 amps, Guardian Series 240U AC and 245U DC relays are compact, reliable, inexpensive. Factory pretested and adjusted to be ready for assembly into your product. Contact rating is 15 amp, 120V, 60 Hz non-inductive load. Easy assembly with 8-32 single screw, center-hole mounting. Shipping weight 4.5 oz.

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
240U-2C-24A	24	24AC	DPDT	$6.30
240U-4C-24A	24	24AC	4PDT	9.38
240U-2C-120A	550	120AC	DPDT	6.30
240U-4C-120A	550	120AC	4PDT	9.38

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
245U-2C-12D	50	12DC	DPDT	$6.30
245U-4C-12D	50	12DC	4PDT	9.38
245U-2C-24D	200	24DC	DPDT	6.30
245U-4C-24D	200	24DC	4PDT	9.38

Recognized under the Component Program of Underwriters' Laboratories, Inc.



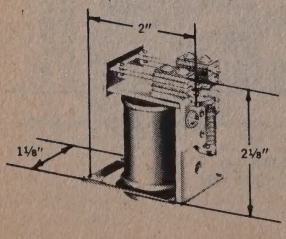
SERIES 640U - 645U ALL PURPOSE ECONOMY RELAY — 10 AMPERE

A compact, lightweight relay capable of unusually heavy power control for its size. Long life, high quality relay available in a variety of AC and DC voltages with a selection of contact combinations. All contact ratings are 10 amps. Contact ratings at 60 Hz, 120V non-inductive load. 8-32 single screw, center hole mounting. Shipping weight, 3.5 oz.

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
640U-A-24A	24	24AC	SPST*	$3.89
640U-C-24A	24	24AC	SPDT	4.40
640U-2C-24A	24	24AC	DPDT	5.33
640U-4C-24A	24	24AC	4PDT	7.36
640U-A-120A	550	120AC	SPST*	3.89
640U-C-120A	550	120AC	SPDT	4.40
640U-2C-120A	550	120AC	DPDT	5.33
640U-4C-120A	550	120AC	4PDT	7.36
640U-2C-240A	2950	240AC	DPDT	5.69
645U-A-12D	50	12DC	SPST*	3.89
645U-C-12D	50	12DC	SPDT	4.40

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
645U-2C-12D	50	12DC	DPDT	$5.53
645U-4C-12D	50	12DC	4PDT	7.36
645U-A-24D	200	24DC	SPST*	3.89
645U-C-24D	200	24DC	SPDT	4.40
645U-2C-24D	200	24DC	DPDT	5.33
645U-4C-24D	200	24DC	4PDT	7.36
645U-A-110D	4000	110DC	SPST*	4.37
645U-C-110D	4000	110DC	SPDT	4.99
645U-2C-110D	4000	110DC	DPDT	5.97
645U-4C-110D	4000	110DC	4PDT	8.00

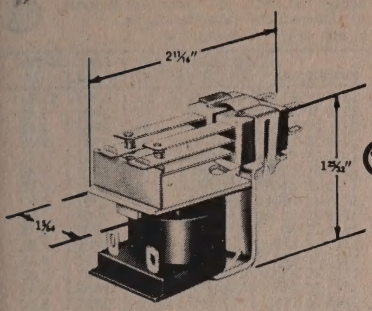
Recognized under the Component Program of Underwriters' Laboratories, Inc.
*Normally open.



SERIES 625 PLATE CIRCUIT DC RELAY — 10 AMPERE

Has extra long coil for greater sensitivity. Adaptable to voltage operation as well as sensitive plate circuit control installations. Coil impregnated for reliability and longer life. Average power requirement, 0.2 watt. Contacts, fine silver. Contact ratings, 10 amps. Mounting: One 8-32 (NC-2) center hole. Shipping weight, 5.5 oz.

Guardian No.	Oper. Mils	Coil Res.	Cont. Comb.	Net ea. 1-24
625-2.5	9 M.A.	2500	DPDT	$6.39
625-5	6.3 M.A.	5000	DPDT	7.06
625-10	4.5 M.A.	10,000	DPDT	7.68



SERIES 900 - 905 / SERIES 910 - 915 10 AMP RELAY

- Designed with reduced number of parts for long, trouble-free service
- Has keyed and locked lifter

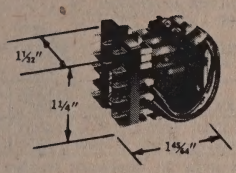
Series 910 is exactly the same as the 900 relay, both electrically and mechanically, but with ¾" quick disconnects instead of soldered termination.

Dependable, low cost, DPDT relay featuring new, trouble-free design that incorporates a minimum of parts. Contacts all rated 10 amps, 120 VAC resistive load. Has molded switches, one-piece mounting clip and return spring; molded bobbin and coil cover. Average shipping weight, 6 oz.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Coil Res.	Coil Voltage	Net ea. 1-24
900-2C-24A	24	24AC	$2.26
900-2C-120A	750	120AC	2.26
900-2C-240A	2950	240AC	2.26
905-2C-6D	8	6DC	2.26
905-2C-12D	32	12DC	2.26
905-2C-24D	130	24DC	2.26

Guardian No.	Coil Res.	Coil Voltage	Net ea. 1-24
910-2C-24A	24	24AC	$2.26
910-2C-120A	750	120AC	2.26
910-2C-240A	2950	240AC	2.26
915-2C-6D	8	6DC	2.26
915-2C-12D	32	12DC	2.26
915-2C-24D	130	24DC	2.26



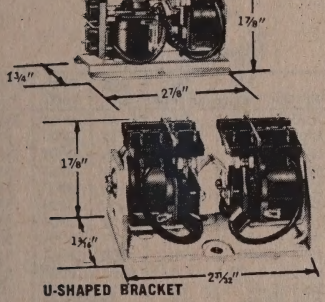
SERIES 1240 - 1245 NEW SMALL, EFFICIENT MEDIUM POWER RELAY — 10 AMPERE

Highly efficient relay for communications, automation, remote control switching circuits and laboratory applications. All terminals are solder lug type and molded in phenolic panel block for coils as well as contacts. Barriers in panel block raised to meet U/L over-surface spacing. Contacts rated 10 amps at 60 Hz, 120 VAC, non-inductive load. Mounting: Single mounting hole, 6-32 tap. Shipping weight, 2.5 oz.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
1240-2C-6A	2.8	6AC	DPDT	$4.81
1240-3C-6A	2.4	6AC	3PDT	5.45
1240-2C-24A	59	24AC	DPDT	4.81
1240-3C-24A	50	24AC	3PDT	5.45
1240-2C-120A	1190	120AC	DPDT	4.81
1240-3C-120A	1000	120AC	3PDT	5.45
1240-2C-240A	5340	240AC	DPDT	5.02
1240-3C-240A	4750	240AC	3PDT	5.69

Guardian No.	Coil Res.	Coil Voltage	Cont. Comb.	Net ea. 1-24
1245-2C-6D	18	6DC	DPDT	$4.77
1245-3C-6D	18	6DC	3PDT	5.38
1245-2C-12D	75	12DC	DPDT	4.77
1245-3C-12D	75	12DC	3PDT	5.38
1245-2C-24D	300	24DC	DPDT	4.77
1245-3C-24D	300	24DC	3PDT	5.38
1245-2C-110D	6500	110DC	DPDT	5.41
1245-3C-110D	6500	110DC	3PDT	5.69

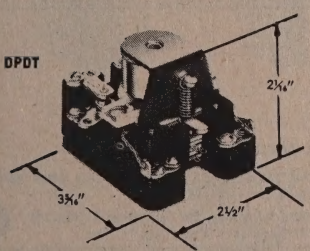


U-SHAPED BRACKET

INTERLOCK RELAYS
SERIES 1200/1200 / SERIES 1200/1200UB

Two interlocking AC relays in sturdy metal frame bracket. Used to maintain circuits continuously without coil power consumption. Units are electrically pulse operated with mechanical hold and electrical release. Contacts rated for 10 amps, at 60 Hz, 120 VAC, non-inductive load. Coil resistance is 1,100 ohms. Shipping weight, 5.5 oz.

Guardian No.	Cont. Comb.	Coil Voltage	Net ea. 1-24
1200/1200-4C-120A	4PDT	120AC	$13.96
1200/1200UB-4C-120A	4PDT	120AC	13.96



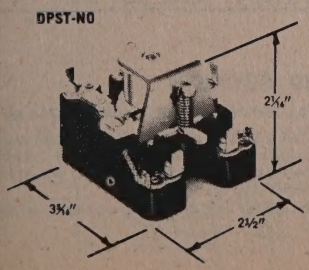
SERIES 2600U - 2605U 25 AMPERE POWER RELAY / Replaces Series 2100-2105 and Series 2300-2305

Power relays with double pole double throw contacts rated at 25 amps. Inverted coil construction protects armature and contacts from inadvertent mechanical damage or electrical shorting. Series 2600U-DPDT AC coils are rated for continuous duty at 240 VAC, with 75% power factor; operating power requirement is 9.5 volt amps, 60 Hz. Series 2600U and 2605U have easily accessible screw type terminals as pictured; also available are ¼ AMP QC as pictured on Series 2620U and 2625U. (Purchase 2600U-QC terminal kit for easy "do-it-yourself" conversion.) "Press to Test" armature lever makes for convenient manual circuit testing. Recessed SPDT auxiliary switch as illustrated is not included but is simple to mount and may be purchased separately if needed; auxiliary switch has solder lug blade tails and is rated for 10 amp operation. These new 25 amp power relays are very compact with a shipping weight of only 8 oz. For mounting there are two .196" diameter holes in the base; these are located on 1⅞" centers.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Volts	Net ea. 1-24
2600U-DPDT-24A	24AC	$11.13
2600U-DPDT-120A	120AC	11.13
2600U-DPDT-240A	240AC	11.47

Guardian No.	Volts	Net ea. 1-24
2605U-DPDT-12D	12DC	$11.13
2605U-DPDT-24D	24DC	11.13
2605U-DPDT-110D	110DC	11.47



SERIES 2620U - 2625U 25 AMPERE POWER RELAY / Replaces Series 2110-2115

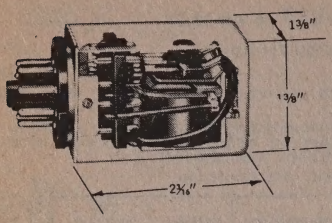
Compatible line of power relays with double pole single throw contacts (normally open). Same inverted coil construction as for 2600U and 2605U. Important note: Series 2620U and 2625U are manufactured with the easily accessible screw type terminals as pictured on Series 2600U and 2605U. The ¼ AMP QC terminals pictured here are available in the 2600U-QC terminal kit for easy "do-it-yourself" installation. Same "Press to Test" armature lever as for 2600U and 2605U. Auxiliary switch may be added if desired. Overall dimensions, shipping weight and mounting provisions are identical to the compatible DPDT units of the 2600U and 2605U Series.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Volts	Net ea. 1-24
2620U-DPST-24A	24AC	$10.56
2620U-DPST-120A	120AC	10.56
2620U-DPST-240A	240AC	10.88
2625U-DPST-12D	12DC	10.56

Guardian No.	Volts	Net ea. 1-24
2625U-DPST-24D	24DC	$10.56
2625U-DPST-110D	110DC	10.88
2600U-SPDT-Aux.-SW	—	2.05
2600U-QC. Terminal Kit	—	.95

SERIES 1210 - 1215 ENCLOSED PLUG-IN RELAY — 10 AMPERE

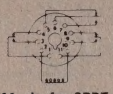


A powerful and economical relay enclosed in a transparent, lightweight Lexan case which has high impact strength, is unaffected by weather, and is resistant to temperatures of 200°F. Relay available with 8 pin octal plug for DPDT and 11 pin for 3PDT. Contacts rated for 10 amps at 60 Hz, 120 VAC non-inductive load. Shipping weight, 3.5 oz.

ENCLOSED PLATE CIRCUIT PLUG-IN RELAY

Guardian No.	Coil Mils	Coil Res.	Cont. Comb.	Net ea. 1-24
1215-2C-2.5	10 MA	2500	DPDT	$8.40
1215-3C-2.5	12 MA	2500	3PDT	9.83
1215-2C-5	7.2 MA	5000	DPDT	8.54
1215-3C-5	8.5 MA	5000	3PDT	10.16
1215-2C-10	5 MA	10,000	DPDT	8.80
1215-3C-10	6 MA	10,000	3PDT	10.50

8 pin for DPDT

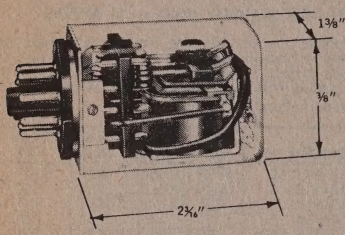


11 pin for 3PDT

Recognized under the Component Program of Underwriters' Laboratories, Inc. (5 amp only)

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1210-2C-6A	6AC	3.3	DPDT	$7.83
1210-3C-6A	6AC	3.3	3PDT	9.45
1210-2C-24A	24AC	54	DPDT	7.83
1210-3C-24A	24AC	54	3PDT	9.45
1210-2C-120A	120AC	1100	DPDT	7.83
1210-3C-120A	120AC	1100	3PDT	9.45
1210-2C-240A	240AC	5000	DPDT	8.25
1210-3C-240A	240AC	5000	3PDT	9.77
1215-2C-6D	6DC	18	DPDT	7.83
1215-3C-6D	6DC	18	3PDT	9.45
1215-2C-12D	12DC	75	DPDT	7.83
1215-3C-12D	12DC	75	3PDT	9.45
1215-2C-24D	24DC	300	DPDT	7.83
1215-3C-24D	24DC	300	3PDT	9.45
1215-2C-110D	110DC	6500	DPDT	8.32
1215-3C-110D	110DC	6500	3PDT	10.08

SERIES 1210N ENCLOSED PLUG-IN AC RELAY WITH BUILT-IN NEON LAMP TO INDICATE CIRCUIT FAULTS — 10 AMPERE



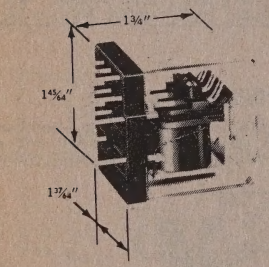
This plug-in relay utilizes a miniature neon lamp connected across coil terminals. The lamp lights each time the coil is energized, or indicates a circuit fault when lamp is "dark." Ideal for detecting circuit faults in relay banks, mass arrangements, or where relays are visibly located at intermediate switching points of the circuitry. Precludes the use of circuit testers. Available with 8 pin octal plug for DPDT and 11 pin for 3PDT.

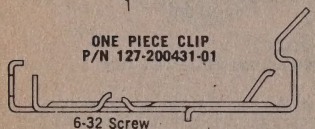
Contacts rated 10 amps at 120 VAC, 60 Hz, non-inductive load. Shipping weight, 3.5 oz.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1210N-2C-120A	120AC	1100	DPDT	$9.09
1210N-3C-120A	120AC	1100	3PDT	10.77

Recognized under the Component Program of Underwriters' Laboratories, Inc. (5 amps only)

SERIES 1220 AC - 1225 DC





"Above Chassis" Snap Bracket accurately positions relay for quick connects or soldering.

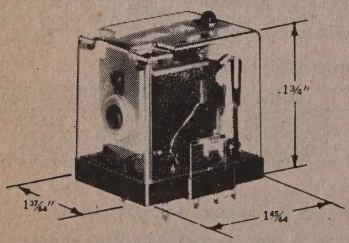
"Above Chassis" Snap Bracket accurately positions relay for quick connects or soldering.

Modern design of this relay has become the standard of the industry. Series 1220 and 1225 are reduced in height and cost by eliminating the radio-type plug and all the wiring between the relay and the plug. These series use the terminal panel itself as the male plug. Famous "UNI-GUARD" continuous-loop moving blades eliminate soldered connections. Cover snap-locks in place with a flush fit that guards against shorting. Universal terminals function as solder-lug, .110" quick connect, or socket plug-in. Mounting bracket for above chassis installation included with each relay. Contacts will safely switch 10 amps at 120 VAC non-inductive in most applications and are U/L approved at 7 amps.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1220-2C-24A	24AC	54	DPDT	$5.51
1220-2C-120A	120AC	1110	DPDT	5.51
1220-2C-240A	240AC	5000	DPDT	5.51
1220-3C-24A	24AC	54	3PDT	5.91
1220-3C-120A	120AC	1110	3PDT	5.91
1220-3C-240A	240AC	5000	3PDT	5.91
1225-2C-6D	6DC	18	DPDT	5.51
1225-2C-12D	12DC	75	DPDT	5.51
1225-2C-24D	24DC	300	DPDT	5.51
1225-2C-110D	110DC	6500	DPDT	5.51
1225-3C-6D	6DC	18	3PDT	5.91
1225-3C-12D	12DC	75	3PDT	5.91
1225-3C-24D	24DC	300	3PDT	5.91
1225-3C-110D	110DC	6500	3PDT	5.91

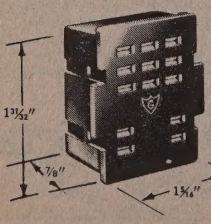
SERIES 1220M AC - 1225M DC MANUAL RESET RELAY



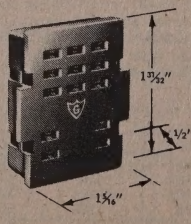
Basic size and cost advantages of the Series 1220 AC and 1225 DC are obtainable off-the-shelf in a manual reset version. Height and cost are reduced through the elimination of the radio-type octal plug and the wiring between the relay and the plug. Unit is built to meet U/L requirements and features the "UNI-GUARD" continuous-loop moving blades. Double pole double throw contacts transfer when coil is energized, locking in the transferred position without further coil energy. Lock is released and contacts re-transfer only when manual reset button is pressed.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1220M-2C-24A	24A	54	DPDT	$7.78
1220M-2C-120A	120A	1110	DPDT	7.78
1225M-2C-24D	24D	300	DPDT	7.78



SOC-1



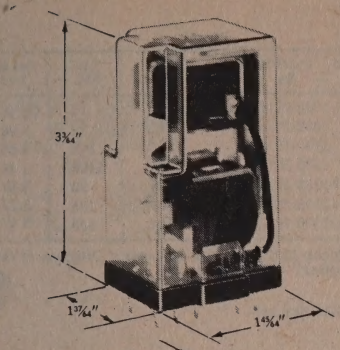
SOC-2

1220 SOCKETS

1-24 — Net 78¢ ea. 25 & up — Net 71¢ ea.

The 1220 snap-in socket has U/L component recognition when used with Guardian Relays. Socket terminal lugs can be soldered to or will accept AMP Series 110 quick connects.

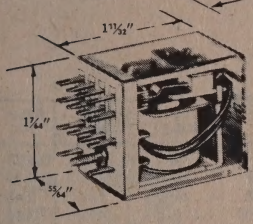
Further savings available when purchased in bulk packs.



SERIES 1220/1220 ENCLOSED INTERLOCK

For an enclosed interlock or electrical reset relay the Guardian Series 1220/1220 has all the mounting and cost advantages of the Series 1220 and Series 1225. Double pole double throw contacts on relay transfer when relay coil is energized, locking in the transferred position without further coil energy. Lock is released and contacts retransfer **only** when interlock (reset) magnet is energized. Contacts are rated for 10 amps at 120 VAC non-inductive.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1220/ 1220-2C-24A	24A	54	DPDT	$17.69
1220/ 1220-2C-120A	120A	1110	DPDT	17.69
1225/ 1225-2C-24D	24D	300	DPDT	17.69



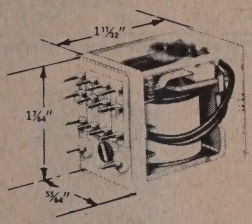
SERIES 1310 - 1315

LONG LIFE 4PDT, 5 AMPERE — MINIATURE RELAY

4PDT — 5 amp Plug-in Relay available AC or DC. Contacts rated 5 amps at 30 VDC or 120 VDC resistive. Heat resistant Lexan cover. Life in excess of 100 million operations. Weight: 1⅛ oz.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

Guardian No.	Coil Voltage	Net ea. 1-24
1310-4C-6A	6AC	$5.20
1310-4C-12A	12AC	5.20
1310-4C-24A	24AC	5.20
1310-4C-120A	120AC	5.41
1315-4C-6D	6DC	4.68
1315-4C-12D	12DC	4.68
1315-4C-24D	24DC	4.68
1315-4C-110D	110DC	5.05



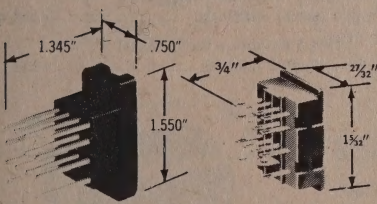
SERIES 1310P - 1315P

MINIATURE RELAY WITH PRINTED CIRCUIT TERMINATION

4PDT — 5 amp Printed Circuit Relay available AC or DC. Contacts rated 5 amps at 30 VDC or 120 VAC resistive. Heat resistant Lexan cover. Life in excess of 100 million operations. Weight: 1⅛ oz.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

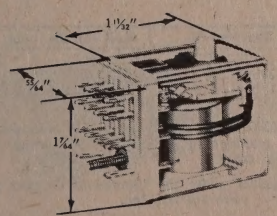
Guardian No.	Coil Voltage	Net ea. 1-24
1310P-4C-6A	6AC	$5.20
1310P-4C-12A	12AC	5.20
1310P-4C-24A	24AC	5.20
1310P-4C-120A	120AC	5.41
1315P-4C-6D	6DC	4.68
1315P-4C-12D	12DC	4.68
1315P-4C-24D	24DC	4.68
1315P-4C-110D	110DC	5.05



SERIES 1310 SOCKET

Select from four sockets for mounting the 1310-1315 series miniature relays. Choose the 1310-1 ST Series Relay Socket with solder terminals, the 1310-2 PC Relay Socket with printed circuit terminals, the 1310-3 SN Series Relay Socket snap-in socket with solder terminal, or the 1310-4 WW Series Relay Socket with wire wrap leads. Panel cutout for sockets should measure 1.015" x .858" with .025" radii at all four corners.

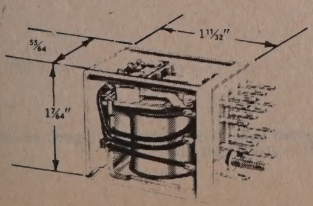
1310-1 ST Series Relay Socket (SOLDER TERMINALS) ..... 65¢ ea.
1310-2 PC Series Relay Socket (PRINTED CIRCUIT) ..... 65¢ ea.
1310-3 SN Series Relay Socket (SOLDER TERMINAL SNAP-IN) ..... 65¢ ea.
1310-4 WW Series Relay Socket (WIRE WRAP TERMINALS) ..... 85¢ ea.



SERIES 1310B - 1315B PUSH-TO-TEST RELAY

The same basic characteristics, size and cost advantages of the Series 1310-1315 relays, now available "off the shelf" in a "push-to-test" version. This 4PDT, 5 amp miniature relay is equipped with a readily accessible, insulated button which provides for checking relay and circuit performance without applying voltage to the relay coil. Weight: 1⅛ oz.

Guardian No.	Coil Voltage	Net ea. 1-24
1310B-4C-120A	120AC	$6.04
1315B-4C-24D	24DC	5.10
1315B-4C-110D	110DC	5.67

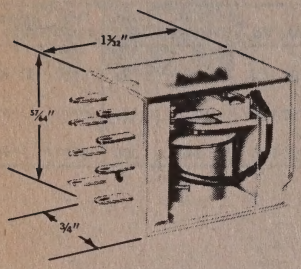


SERIES 1310N - 1315N ENCLOSED, LONG LIFE MINIATURE PLUG-IN AC OR DC RELAY WITH BUILT-IN NEON LAMP TO INDICATE CIRCUIT FAULTS

This plug-in relay utilizes a miniature neon lamp connected across the coil terminals. The lamp glows each time the coil is energized, or indicates a circuit fault when lamp fails to glow upon circuit energization. Ideal for detecting circuit faults in relay banks, mass arrangements, or where relays are visibly located at intermediate switching points of the circuitry. Precludes the use of circuit testers. Relay is 4PDT with 120 VAC operating coil.

Contacts rated at 5 amps at 30 VDC or 120 VAC resistive. Heat resistant Lexan cover. Weight: 1⅛ oz.

Guardian No.	Coil Voltage	Cont. Comb.	Net ea. 1-24
1310N-4C-120A	120AC	4PDT	$6.64
1315N-4C-24D	24DC	4PDT	5.61
1315N-4C-110D	110DC	4PDT	6.24



SERIES 1330 - 1335

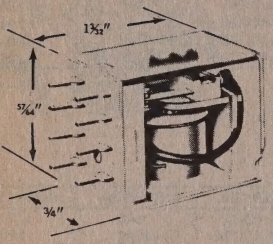
LOW COST DPDT PLUG-IN RELAYS FOR LARGE CONTROL CAPACITY IN A SMALL SIZE

Compact new DPDT . . . 5 amp Plug-In Relay available AC or DC. Ideal for circuitry found in business machines, photocopy equipment, computers, appliances . . . wherever you need reliable control with economy of space and cost. Contacts rated 5 amp at 30VDC or 120VAC resistive. Heat resistant Lexan cover. Weight: ¾oz.

Guardian No.	Coil Voltage	Coil Res.	Net ea. 1-24
1330-2C-6A	6AC	15	$3.96
1330-2C-12A	12AC	50	3.96
1330-2C-24A	24AC	245	3.96
1330-2C-120A	120AC	5400	3.96
1335-2C-6D	6DC	30	3.87
1335-2C-12D	12DC	125	3.87
1335-2C-24D	24DC	500	3.87

Recognized under the Component Program of Underwriters' Laboratories, Inc.

"Above Chassis" Snap Bracket available. Similar to Series 1220 Bracket.



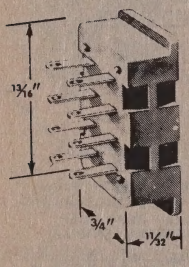
SERIES 1330P - 1335P

COMPACT, LOW COST MINIATURE RELAY WITH PRINTED CIRCUIT TERMINATION

DPDT . . . 5 amp Printed Circuit Relay available AC or DC. Contacts rated 5 amps at 30VDC or 120VAC resistive. Heat resistant Lexan cover. Weight: ¾ oz.

Guardian No.	Coil Voltage	Coil Res.	Net ea. 1-24
1330P-2C-6A	6AC	15	$3.96
1330P-2C-12A	12AC	50	3.96
1330P-2C-24A	24AC	245	3.96
1330P-2C-120A	120AC	5400	3.96
1335P-2C-6D	6DC	30	3.87
1335P-2C-12D	12DC	125	3.87
1335P-2C-24D	24DC	500	3.87

Recognized under the Component Program of Underwriters' Laboratories, Inc.

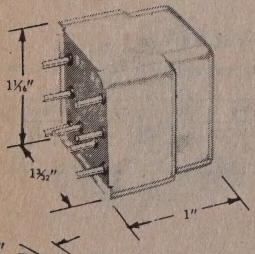


SERIES 1330 SOCKETS

Select either the 1330-1ST Series Relay Socket with solder terminals or the 1330-2PC Relay Socket with printed circuit terminals for mounting your miniature relays. Panel cutout for socket should measure .759" x .830" with .025" radii at all four corners. Recommended for .031" to .062" thick chassis.

1330-1 ST Series Relay Socket (Solder Terminals) ..... 55¢ ea.

1330-2 PC Series Relay Socket (Printed Circuit) ..... 55¢ ea.



SERIES 1360PC - 1365PC

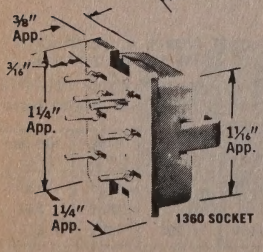
PRINTED CIRCUIT RELAYS — DPDT SWITCHING

For low power solid state circuitry. .060" dia. terminals on .1" grid spacing for standard printed circuit board. Solders right on PC board or use mating socket. 1 watt normal power . . . 3500 ohms coil resistance (120VAC-60 Hz). Mechanical life in excess of 10 million operations. 5 amp resistive 120VAC 60 Hz contact rating. DPDT switching. Weight: 1 oz.

Guardian No.	Coil Voltage	Net ea. 1-24
1360PC-2C-24A	24AC	$4.13
1360PC-2C-120A	120AC	4.13
1365PC-2C-6D	6DC	4.13
1365PC-2C-12D	12DC	4.13
1365PC-2C-24D	24DC	4.13

Also available in SPDT and SPST configurations on special order.

Recognized under the Component Program of Underwriters' Laboratories, Inc.

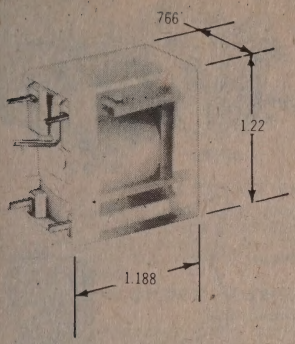


SERIES 1360 SOCKET

May be soldered directly to PC board or snapped through underside of chassis. Connections by wire wrapping may be made before or after insertion of socket into chassis. Panel cutout for socket should measure 1.265" x 1.078" with .015" radii at all four corners. .062" chassis thickness recommended.

1360-1 ..... 58¢ ea.

Recognized under the Component Program of Underwriters' Laboratories, Inc.



SERIES 1345

10 AMP RELAY IN YOUR CHOICE OF SPST-NO, SPST-NC, SPDT

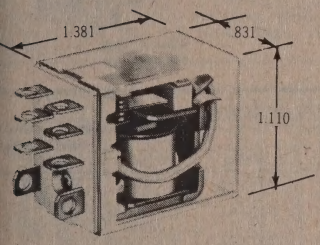
Small in size . . . but built to take hard knocks. A tough little relay that measures just over a cubic inch small, yet is specifically designed for up to 50,000 miles of maintenance-free operation in automotive controls . . . or an equally amazing trouble-free life anywhere you need small size and long life at a low price. Contact ratings:

10 amps resistive at 12VDC
7 amps resistive at 30VDC
6 amps inductive at 30VDC
3.5 amps resistive at 120VAC
2.5 amps inductive at 120VAC

Heat resistant nylon cover. Weight: 1 oz.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1345-1A-6D	6DC	350	SPST-NO	$1.55
1345-1A-12D	12DC	1400	SPST-NO	1.55
1345-1A-24D	24DC	5600	SPST-NO	1.67
1345-1B-6D	6DC	350	SPST-NC	$1.55
1345-1B-12D	12DC	1400	SPST-NC	1.55
1345-1B-24D	24DC	5600	SPST-NC	1.67
1345-1C-6D	6DC	350	SPDT	$1.80
1345-1C-12D	12DC	1400	SPDT	1.80
1345-1C-24D	24DC	5600	SPDT	1.93

Recognized under the Component Program of Underwriters' Laboratories, Inc.



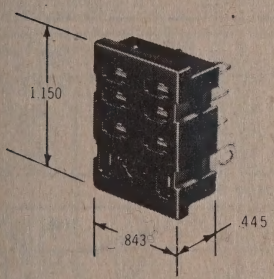
SERIES 1390-1395

SPACE-SAVING, COMPACT DPDT, 13 AMP RELAY

Here's large control capacity in a small, low cost package. Rugged construction, with mechancial life of 100 million operations and 100,000 operations minimum at rated loads. Available with plug-in socket. Contacts rated 13 amps at 28VDC or 130VAC resistive; 7.5 amps at 120VAC inductive; 1/3 hp at 120VAC. Heat resistant Lexan cover. Weight: 1.25 oz.

Guardian No.	Coil Voltage	Coil Res.	Net ea. 1-24
1390-2C-12A	12AC	45	$4.75
1390-2C-24A	24AC	160	4.75
1390-2C-120A	120AC	3900	4.85
1395-2C-6D	6DC	40	4.05
1395-2C-12D	12DC	160	4.05
1395-2C-24D	24DC	650	4.05
1395-2C-110D	110DC	11000	4.95

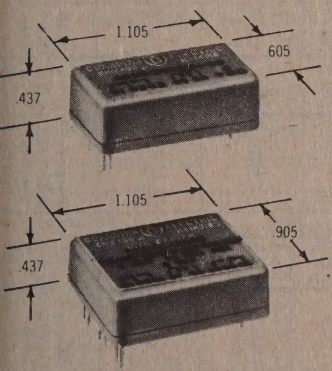
Designed to meet U/L requirements.



SERIES 1390 SOCKET

Select either the 1390-1 ST Series Relay Socket with solder terminal lugs that accept AMP Series .187 quick connects or the 1390-2 PC Series Relay Socket with printed circuit terminals. Panel cutout for socket should measure .858" x 1.015" with .025" radii at all four corners. Chassis thickness of .031" to .062" recommended.

1390-1 ST Series Relay Socket (SOLDER TERMINAL) ..... 75¢ ea.
1390-2 PC Series Relay Socket (PRINTED CIRCUIT) ..... 75¢ ea.



SERIES 1475

LOW PROFILE ELECTROMECHANICAL RELAY IN A CHOICE OF SPDT OR DPDT

Specially designed for high density packaging . . . demanding operating requirements. "Flat-Pack" design features unique multiple convoluted contacting surfaces rated at up to 3 amps AC resistive. This type construction enables the 1475 relay to outperform similar relays under heavier load conditions. PC terminals on .1" grid spacing. Sealed thermoset housing and cover construction. Contacts rated 5 amps at 6 and 12VDC; 3 amps at 24 and 28VDC; 5 amps at 6, 12 and 24VAC; 1.5 amps at 120VAC. (AC loads are resistive.) Mechanical life in excess of 10^7 operations. Weight: 10 grams SPDT; 14 grams DPDT.

Guardian No.	Coil Voltage	Coil Res.	Cont. Comb.	Net ea. 1-24
1475-1C-5D	5DC	44	SPDT	$2.70
1475-1C-6D	6DC	70	SPDT	2.70
1475-1C-12D	12DC	288	SPDT	2.70
1475-1C-24D	24DC	1152	SPDT	2.85
1475-2C-5D	5DC	41.6	DPDT	$3.50
1475-2C-6D	6DC	60	DPDT	3.50
1475-2C-12D	12DC	240	DPDT	3.50
1475-2C-24D	24DC	960	DPDT	3.60

CLASS 67 ENCLOSED PLUG-IN RELAYS

VersaPac Class 67 miniature industrial relays are UL recognized (File No. E30741). Designed for applications requiring 2 to 8 Form C contacts where space, weight and low cost are of prime importance. Single and bifurcated, crossbar contacts of silver alloy gold flashed rated 3 to 5 amps at 28 VDC or 115 VAC resistive load. All plug-in relays feature plastic dust covers and combination solder plug-in terminals with 3-48 NC stud. Voltage specified relays pull in at 75% of nominal or less for DC relays and 85% of nominal or less for AC relays at 25° C. Resistance values ±10% measured at 25° C. Sensitive versions are also available in 2 or 4 Form C contacts rated 3 amps at 28 VDC or 115 VAC resistive load. **Size:** 2 Form C, 0.734″ x 0.938″ x 1.188″; 4 Form C, 0.734″ x 1.156″ x 1.188″; 6 Form C, 0.734″ x 1.375″ x 1.188″; 8 Form C, 0.734″ x 1.592″ x 1.188″.

STANDARD ADJUSTMENT 2 FORM C

Magnecraft Number	Contact Rating	Coil Volts	Coil Ohms	Net Each 1-24*
W67CSX-1	3 amps	6	52	$3.82
W67CSX-2		12	185	3.82
W67CSX-3		24	700	3.82
W67CSX-4		48	2,500	3.82
W67CSX-5		115	15,000	6.08
W67RCSX-1	5 amps	6	52	3.98
W67RCSX-2		12	185	3.98
W67RCSX-3		24	700	3.98
W67RCSX-4		48	2,500	3.98
W67RCSX-5		115	15,000	6.23
W67TCSX-1	3* amps	6	52	4.29
W67TCSX-2		12	185	4.29
W67TCSX-3		24	700	4.29
W67TCSX-4		48	2,500	4.29
W67TCSX-5		115	15,000	6.54
W67TRCSX-1	5* amps	6	52	4.35
W67TRCSX-2		12	185	4.35
W67TRCSX-3		24	700	4.35
W67TRCSX-4		48	2,500	4.35
W67TRCSX-5		115	15,000	6.38

STANDARD ADJUSTMENT 4 FORM C

W67CSX-6	3 amps	6	52	$4.25
W67CSX-7		12	185	4.25
W67CSX-8		24	700	4.25
W67CSX-9		48	2,500	4.25
W67CSX-10		115	15,000	6.50
W67RCSX-6	5 amps	6	52	4.57
W67RCSX-7		12	185	4.57
W67RCSX-8		24	700	4.57
W67RCSX-9		48	2,500	4.57
W67RCSX-10		115	15,000	6.80
W67TCSX-6	3* amps	6	52	4.82
W67TCSX-7		12	185	4.82
W67TCSX-8		24	700	4.82
W67TCSX-9		48	2,500	4.82
W67TCSX-10		115	15,000	7.10
W67TRCSX-6	5* amps	6	52	5.22
W67TRCSX-7		12	185	5.22
W67TRCSX-8		24	700	5.22
W67TRCSX-9		48	2,500	5.22
W67TRCSX-10		115	15,000	7.25

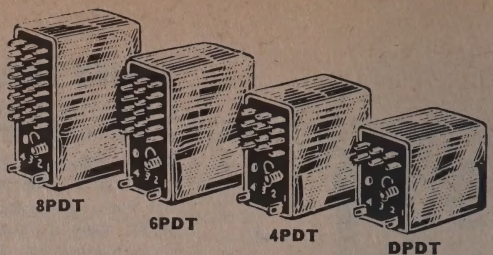
STANDARD ADJUSTMENT 6 FORM C

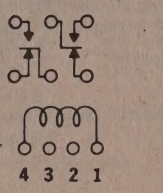
W67CSX-11	3 amps	6	25	$5.50
W67CSX-12		12	90	5.50
W67CSX-13		24	430	5.50
W67CSX-14		48	1,550	5.50
W67CSX-15		115	9,000	6.52
W67RCSX-11	5 amps	6	25	5.97
W67RCSX-12		12	90	5.97
W67RCSX-13		24	430	5.97
W67RCSX-14		48	1,550	5.97
W67RCSX-15		115	9,000	6.99
W67TCSX-11	3* amps	6	25	6.26
W67TCSX-12		12	90	6.26
W67TCSX-13		24	430	6.26
W67TCSX-14		48	1,550	6.26
W67TCSX-15		115	9,000	7.26
W67TRCSX-11	5* amps	6	25	6.63
W67TRCSX-12		12	90	6.63
W67TRCSX-13		24	430	6.63
W67TRCSX-14		48	1,550	6.63
W67TRCSX-15		115	9,000	7.71

STANDARD ADJUSTMENT 8 FORM C

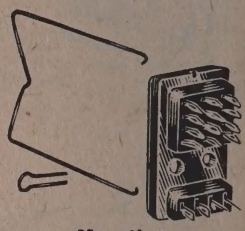
W67CSX-16	3 amps	6	20	$8.87
W67CSX-17		12	72	8.87
W67CSX-18		24	350	8.87
W67CSX-19		48	1,250	8.87
W67CSX-20		115	8,000	9.96
W67RCSX-16	5 amps	6	20	9.36
W67RCSX-17		12	72	9.36
W67RCSX-18		24	350	9.36
W67RCSX-19		48	1,250	9.36
W67RCSX-20		115	8,000	10.45
W67TCSX-16	3* amps	6	20	9.78
W67TCSX-17		12	72	9.78
W67TCSX-18		24	350	9.78
W67TCSX-19		48	1,250	9.78
W67TCSX-20		115	8,000	10.88
W67TRCSX-16	5* amps	6	20	10.02
W67TRCSX-17		12	72	10.02
W67TRCSX-18		24	350	10.02
W67TRCSX-19		48	1,250	10.02
W67TRCSX-20		115	8,000	11.12

*Bifurcated contacts.





Contact Configuration



Mounting Hardware

AC VERSIONS

Magnecraft Number	3 Amp Contacts	Coil Volts	Coil Ohms	Net Each* 1-24
W67ACSX-5	DPDT	115 AC	5000	$6.46
W67ACSX-10	4PDT	115 AC	2 x 5800	7.96
W67ACSX-15	6PDT	115 AC	2 x 5800	11.18
W67APCX-2	DPDT	115 AC	5000	6.59
W67APCX-3	4PDT	115 AC	2 x 5800	8.11
W67APCX-4	6PDT	115 AC	2 x 5800	11.40

Magnecraft Number	5 Amp Contacts	Coil Volts	Coil Ohms	Net Each* 1-24
W67ARCSX-5	DPDT	115 AC	5000	$6.60
W67ARCSX-10	4PDT	115 AC	2 x 5800	8.08
W67ARCSX-15	6PDT	115 AC	2 x 5800	11.26
W67ARPCX-1	DPDT	115 AC	5000	6.74
W67ARPCX-2	4PDT	115 AC	2 x 5800	8.25
W67ARPCX-4	6PDT	115 AC	2 x 5800	11.48

PRINTED CIRCUIT VERSIONS

Magnecraft Number	3 Amp Contacts	Coil Volts	Coil Ohms	Net Each* 1-24
W67PCX-2	DPDT	12	185	$3.84
W67PCX-3	DPDT	24	700	3.84
W67PCX-7	4PDT	12	185	4.25
W67PCX-8	4PDT	24	700	4.25
W67PCX-12	6PDT	12	90	5.50
W67PCX-13	6PDT	24	430	5.50

Magnecraft Number	5 Amp Contacts	Coil Volts	Coil Ohms	Net Each* 1-24
W67RPCX-2	DPDT	12	185	$3.99
W67RPCX-3	DPDT	24	700	3.99
W67RPCX-7	4PDT	12	185	4.70
W67RPCX-8	4PDT	24	700	4.70
W67RPCX-12	6PDT	12	90	5.97
W67RPCX-13	6PDT	24	430	5.97

ULTRA SENSITIVE ADJUSTMENT

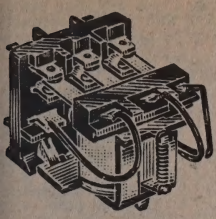
Magnecraft Number	3 Amp Contacts	Coil mA	Coil Ohms	Net Each 1-24*
W67SCSX-1	DPDT	8.5	1,000	$4.21
W67SCSX-2		5.8	2,500	4.21
W67SCSX-3		4.1	5,000	4.76
W67SCSX-4		3.1	10,000	5.22
W67SCSX-5		2.6	15,000	5.78
W67SCSX-6	4PDT	13.0	1,000	4.67
W67SCSX-7		8.4	2,500	4.67
W67SCSX-8		6.2	5,000	5.22
W67SCSX-9		4.5	10,000	5.68
W67SCSX-10		3.5	15,000	6.26

SOCKETS AND MOUNTING HARDWARE

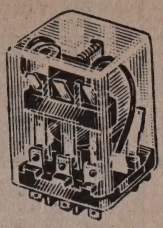
Magnecraft Number	Description	Overall Height, In.	Net Each 1-24*
70-303	2 pole solder terminal	.970	$0.64
70-304	2 pole PC terminal	.970	.64
70-305	4 pole solder terminal	1.188	.82
70-306	4 pole PC terminal	1.188	.82
70-307	6 pole solder terminal	1.406	1.10
70-308	6 pole PC terminal	1.406	1.10
70-309	8 pole solder terminal	1.625	2.00
70-310	8 pole PC terminal	1.625	2.00

★**QUANTITY DISCOUNTS: Lots of 25-49, —5%; 50-74, —10%; 75-99, —20%; 100-249, —30%; 250-499, —35%; 500 Up, —42.5%.**

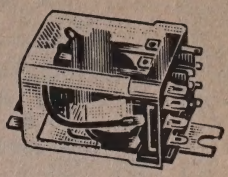
CLASS 388 GENERAL PURPOSE RELAYS
UL RECOGNIZED (FILE NO. E55458)



388 Open Type



388CP



388CQ

CONTACT RATING, ALL RELAYS THIS PAGE: SPDT-13A; DPDT-12A; 3PDT-11A.

Low cost, general purpose relay designed to meet UL and CSA standards. Coil bobbin skirt provides improved barrier of insulation between coil terminals and frame. Arc barriers between adjacent poles of the relay are molded internally and externally on the relay base.

CLASS 388 OPEN TYPE RELAYS, SPDT, DPDT, 3PDT (U.L. LISTED)

AC and DC operation. 3-way terminals, plug-in, solder, quick connect. SPDT, DPDT, 3PDT silver alloy, gold flashed contacts rated as shown at 28 VDC or 115 VAC resistive load. Dielectric withstanding voltage of 500 V rms between open contacts; 1500 V rms between all other elements. Nominal power for AC, 2.5 watts, approx.; for DC, 1.2 watts. Size, 1²³⁄₆₄″ x 1³⁄₃₂″ x 2¹⁄₆₄″, overall. Weight, 2.3 oz.

Magnecraft Number	Contacts	Coil Volts*	Coil Ohms†	Net Each, Lots of 1-9	10-24	25-49	50-99*
W388AX-1	SPDT	6 VAC	.....	$4.52	$4.29	$4.06	$3.84
W388AX-2	SPDT	12 VAC	.....	4.52	4.29	4.06	3.84
W388AX-3	SPDT	24 VAC	.....	4.52	4.29	4.06	3.84
W388AX-4	SPDT	120 VAC	.....	4.52	4.29	4.06	3.84
W388AX-5	SPDT	240 VAC	.....	5.06	4.81	4.56	4.31
W388AX-6	DPDT	6 VAC	.....	5.60	5.31	5.04	4.76
W388AX-7	DPDT	12 VAC	.....	5.60	5.31	5.04	4.76
W388AX-8	DPDT	24 VAC	.....	5.60	5.31	5.04	4.76
W388AX-9	DPDT	120 VAC	.....	5.60	5.31	5.04	4.76
W388AX-10	DPDT	240 VAC	.....	6.14	5.84	5.53	5.22
W388AX-11	3PDT	6 VAC	.....	6.33	6.02	5.70	5.39
W388AX-12	3PDT	12 VAC	.....	6.33	6.02	5.70	5.39
W388AX-13	3PDT	24 VAC	.....	6.33	6.02	5.70	5.39
W388AX-14	3PDT	120 VAC	.....	6.33	6.02	5.70	5.39
W388AX-15	3PDT	240 VAC	.....	6.89	6.54	6.20	5.86
W388X-1	SPDT	6 VDC	32	4.32	4.10	3.89	3.66
W388X-2	SPDT	12 VDC	120	4.32	4.10	3.89	3.66
W388X-3	SPDT	24 VDC	470	4.32	4.10	3.89	3.66
W388X-4	SPDT	110 VDC	10000	5.15	4.89	4.63	4.38
W388X-5	DPDT	6 VDC	32	4.96	4.70	4.46	4.21
W388X-6	DPDT	12 VDC	120	4.96	4.70	4.46	4.21
W388X-7	DPDT	24 VDC	470	4.96	4.70	4.46	4.21
W388X-8	DPDT	110 VDC	10000	5.84	5.54	5.25	4.97
W388X-9	3PDT	6 VDC	32	5.78	5.49	5.20	4.91
W388X-10	3PDT	12 VDC	120	5.78	5.49	5.20	4.91
W388X-11	3PDT	24 VDC	470	5.78	5.49	5.20	4.91
W388X-12	3PDT	110 VDC	10000	6.33	6.02	5.70	5.39

CLASS 388CP ENCLOSED PLUG-IN RELAYS (U.L. LISTED)

AC and DC operation. SPDT, DPDT, 3PDT silver alloy, gold flashed contacts rated as shown at 28 VDC or 115 VAC, resistive load. Nominal power, AC, 2.5 watts, approx.; DC, 1.2 watts. Dielectric withstanding voltage of 500 V rms between open contacts; 1500 V rms between all other elements. .187″ x .020″ quick connect terminals with solder hole. Plug-in mounting, mates with screw terminal sockets or nylon sockets, shown below. Tough, clear, crackproof cover. Size, 1¹⁷⁄₃₂″ x 1¹³⁄₃₂″ x 2³⁄₁₆″ h., overall, Weight, 3 oz.

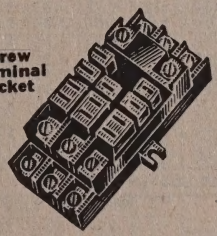
Magnecraft Number	Contacts	Coil Volts*	Coil Ohms†	Net Each, Lots of 1-9	10-24	25-49	50-99*
W388ACPX-1	SPDT	6 VAC	.....	$4.78	$4.54	$4.31	$4.06
W388ACPX-2	SPDT	12 VAC	.....	4.78	4.54	4.31	4.06
W388ACPX-3	SPDT	24 VAC	.....	4.78	4.54	4.31	4.06
W388ACPX-4	SPDT	120 VAC	.....	4.78	4.54	4.31	4.06
W388ACPX-5	SPDT	240 VAC	.....	5.36	5.09	4.82	4.56
W388ACPX-6	DPDT	6 VAC	.....	5.84	5.54	5.25	4.97
W388ACPX-7	DPDT	12 VAC	.....	5.84	5.54	5.25	4.97
W388ACPX-8	DPDT	24 VAC	.....	5.84	5.54	5.25	4.97
W388ACPX-9	DPDT	120 VAC	.....	5.84	5.54	5.25	4.97
W388ACPX-10	DPDT	240 VAC	.....	6.42	6.09	5.78	5.45
W388ACPX-11	3PDT	6 VAC	.....	6.54	6.22	5.89	5.57
W388ACPX-12	3PDT	12 VAC	.....	6.54	6.22	5.89	5.57
W388ACPX-13	3PDT	24 VAC	.....	6.54	6.22	5.89	5.57
W388ACPX-14	3PDT	120 VAC	.....	6.54	6.22	5.89	5.57
W388ACPX-15	3PDT	240 VAC	.....	7.11	6.75	6.39	6.04
W388CPX-1	SPDT	6 VDC	32	4.63	4.40	4.17	3.94
W388CPX-2	SPDT	12 VDC	120	4.63	4.40	4.17	3.94
W388CPX-3	SPDT	24 VDC	470	4.63	4.40	4.17	3.94
W388CPX-4	SPDT	110 VDC	10000	5.40	5.12	4.86	4.59
W388CPX-5	DPDT	6 VDC	32	5.28	5.02	4.76	4.49
W388CPX-6	DPDT	12 VDC	120	5.28	5.02	4.76	4.49
W388CPX-7	DPDT	24 VDC	470	5.28	5.02	4.76	4.49
W388CPX-8	DPDT	110 VDC	10000	6.07	5.76	5.46	5.16
W388CPX-9	3PDT	6 VDC	32	6.05	5.74	5.44	5.15
W388CPX-10	3PDT	12 VDC	120	6.05	5.74	5.44	5.15
W388CPX-11	3PDT	24 VDC	470	6.05	5.74	5.44	5.15
W388CPX-12	3PDT	110 VDC	10000	6.56	6.24	5.91	5.58

NEW CLASS 388CQ ENCLOSED FLANGE-MOUNT RELAYS (U.L. LISTED)

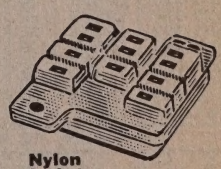
AC and DC operation. SPDT, DPDT, 3PDT silver alloy, gold flashed contacts rated as shown at 28 VDC or 115 VAC resistive load. Dielectric withstanding voltage of 500 V rms between open contacts; 1500 V rms between all other elements. Nominal power, AC, 2.5 watts, approx.; DC, 1.2 watts. Solder or .187″ quick connect terminals. Tough, clear, crackproof cover with flange mount. Size, 1¹⁷⁄₃₂″ x 1¹³⁄₃₂″ x 2²³⁄₃₂″ h., overall. Weight, 3 oz.

Magnecraft Number	Contacts	Coil Volts*	Coil Ohms†	Net Each, Lots of 1-9	10-24	25-49	50-99*
W388ACQX-1	SPDT	6 VAC	.....	$4.78	$4.54	$4.31	$4.06
W388ACQX-2	SPDT	12 VAC	.....	4.78	4.54	4.31	4.06
W388ACQX-3	SPDT	24 VAC	.....	4.78	4.54	4.31	4.06
W388ACQX-4	SPDT	120 VAC	.....	4.78	4.54	4.31	4.06
W388ACQX-5	SPDT	240 VAC	.....	5.36	5.09	4.82	4.56
W388ACQX-6	DPDT	6 VAC	.....	5.84	5.54	5.25	4.97
W388ACQX-7	DPDT	12 VAC	.....	5.84	5.54	5.25	4.97
W388ACQX-8	DPDT	24 VAC	.....	5.84	5.54	5.25	4.97
W388ACQX-9	DPDT	120 VAC	.....	5.84	5.54	5.25	4.97
W388ACQX-10	DPDT	240 VAC	.....	6.42	6.09	5.78	5.45
W388ACQX-11	3PDT	6 VAC	.....	6.54	6.22	5.89	5.57
W388ACQX-12	3PDT	12 VAC	.....	6.54	6.22	5.89	5.57
W388ACQX-13	3PDT	24 VAC	.....	6.54	6.22	5.89	5.57
W388ACQX-14	3PDT	120 VAC	.....	6.54	6.22	5.89	5.57
W388ACQX-15	3PDT	240 VAC	.....	7.11	6.75	6.39	6.04
W388CQX-1	SPDT	6 VDC	32	4.63	4.40	4.17	3.94
W388CQX-2	SPDT	12 VDC	120	4.63	4.40	4.17	3.94
W388CQX-3	SPDT	24 VDC	470	4.63	4.40	4.17	3.94
W388CQX-4	SPDT	110 VDC	10000	5.40	5.12	4.86	4.59
W388CQX-5	DPDT	6 VDC	32	5.28	5.02	4.76	4.49
W388CQX-6	DPDT	12 VDC	120	5.28	5.02	4.76	4.49
W388CQX-7	DPDT	24 VDC	470	5.28	5.02	4.76	4.49
W388CQX-8	DPDT	110 VDC	10000	6.07	5.76	5.46	5.16
W388CQX-9	3PDT	6 VDC	32	6.05	5.74	5.44	5.15
W388CQX-10	3PDT	12 VDC	120	6.05	5.74	5.44	5.15
W388CQX-11	3PDT	24 VDC	470	6.05	5.74	5.44	5.15
W388CQX-12	3PDT	110 VDC	10000	6.56	6.24	5.91	5.58

GENERAL PURPOSE RELAY SOCKETS



Screw Terminal Socket



Nylon Socket

INDUSTRIAL SCREW TERMINAL SOCKET

Heavy duty molded thermoplastic screw terminal socket rated at 10 amperes. Has closed back construction which requires no insulation. 11-pin socket accepts all Class 388 relays.

Magnecraft Number	Socket Description	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499*
70-233	Screw terminal, 11 pin	$4.44	$4.00	$3.78	$3.55	$3.34

CLASS 388 NYLON SOCKETS

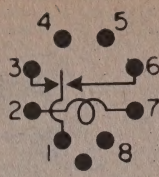
Nylon sockets rated at 10 amperes. Choice of solder, quick connec , or printed circuit terminals. Accept all Class 388 type relays.

Magnecraft Number	Socket Description	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499*
70-124-1	Nylon solder-terminal	$0.88	$0.84	$0.79	$0.74	$0.61
70-124-2	Nylon quick-connect	1.35	1.27	1.20	1.15	.93
70-178-1	Nylon printed-circuit	1.00	.94	.89	.85	.69

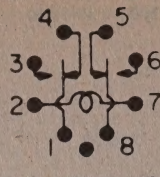
*Resistance values ±10%, measured at 25° C. †Voltage specified relays pull in at 75% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25° C.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

Class 588

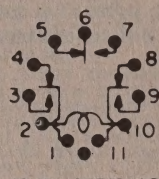


8-Pin SPDT (1C)



8-Pin DPDT (2C)

Class 588CP



11-Pin 3PDT (3C)

CLASS 588 OPEN TYPE RELAYS

Class 588 UL Recognized (File No. E31481) continuous duty general purpose relays are designed for maximum efficiency and reliable performance at lowest cost. Contacts are silver alloy, gold flashed rated 5 or 10 amps at 28 VDC or 115 VAC resistive load. Open type relays have axial type solder lugs for easy wiring. Single 6-32 tapped mounting hole with locating boss for easy mounting. Voltage specified relays operate at 75% of nominal coil power (1.2 watts) or less for DC version and 85% of nominal coil power (2 VA) for AC versions. Size, 1 7/64" x 1 7/64" x 1 47/64".

5 AMP, DC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588X-1	SPDT	6	30	$4.41	$4.19	$3.97	$3.09	$2.87
W588X-2	SPDT	12	120	4.41	4.19	3.97	3.09	2.87
W588X-3	SPDT	24	480	4.41	4.19	3.98	3.09	2.87
W588X-4	SPDT	110	10080	5.17	4.92	4.65	3.62	3.37
W588X-5	DPDT	6	30	4.83	4.59	4.35	3.38	3.14
W588X-6	DPDT	12	120	4.83	4.59	4.35	3.38	3.14
W588X-7	DPDT	24	480	4.83	4.59	4.35	3.38	3.14
W588X-8	DPDT	110	10080	5.71	5.42	5.14	3.99	3.71
W588X-9	3PDT	6	30	5.50	5.23	4.95	3.85	3.58
W588X-10	3PDT	12	120	5.50	5.23	4.95	3.85	3.58
W588X-11	3PDT	24	480	5.50	5.23	4.95	3.85	3.58
W588X-12	3PDT	48	10080	6.30	5.97	5.38	4.18	3.88

10 AMP, DC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588X-13	SPDT	6	30	$4.46	$4.24	$4.02	$3.12	$2.89
W588X-14	SPDT	12	120	4.46	4.24	4.02	3.12	2.89
W588X-15	SPDT	24	480	4.46	4.24	4.02	3.12	2.89
W588X-16	SPDT	110	10080	5.23	4.96	4.71	3.66	3.40
W588X-17	DPDT	6	30	5.02	4.76	4.51	3.51	3.26
W588X-18	DPDT	12	120	5.02	4.76	4.51	3.51	3.26
W588X-19	DPDT	24	480	5.02	4.76	4.51	3.51	3.26
W588X-20	DPDT	110	10080	5.90	5.60	5.30	4.13	3.83
W588X-21	3PDT	6	30	5.71	5.42	5.14	3.99	3.71
W588X-22	3PDT	12	120	5.71	5.42	5.14	3.99	3.71
W588X-23	3PDT	24	480	5.71	5.42	5.14	3.99	3.71
W588X-24	3PDT	110	10080	6.53	6.20	5.89	4.58	4.25

5 AMP, AC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588AX-1	SPDT	6	6	$4.55	$4.32	$4.10	$3.19	$2.96
W588AX-2	SPDT	12	24	4.55	4.32	4.10	3.19	2.96
W588AX-3	SPDT	24	96	4.55	4.32	4.10	3.19	2.96
W588AX-4	SPDT	115	2200	4.55	4.32	4.10	3.19	2.96
W588AX-5	DPDT	6	6	5.56	5.28	5.00	3.89	3.61
W588AX-6	DPDT	12	24	5.56	5.28	5.00	3.89	3.61
W588AX-7	DPDT	24	96	5.56	5.28	5.00	3.89	3.61
W588AX-8	DPDT	115	2200	5.56	5.28	5.00	3.89	3.61
W588AX-9	3PDT	6	6	6.00	5.70	5.40	4.20	3.89
W588AX-10	3PDT	12	24	6.00	5.70	5.40	4.20	3.89
W588AX-11	3PDT	24	96	6.00	5.70	5.40	4.20	3.89
W588AX-12	3PDT	115	2200	6.00	5.70	5.40	4.20	3.89

10 AMP, AC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588AX-13	SPDT	6	6	$4.61	$4.38	$4.15	$3.22	$2.99
W588AX-14	SPDT	12	24	4.61	4.38	4.15	3.22	2.99
W588AX-15	SPDT	24	96	4.61	4.38	4.15	3.22	2.99
W588AX-16	SPDT	115	2200	4.61	4.38	4.15	3.22	2.99
W588AX-17	DPDT	6	6	5.68	5.39	5.10	3.97	3.69
W588AX-18	DPDT	12	24	5.68	5.39	5.10	3.97	3.69
W588AX-19	DPDT	24	96	5.68	5.39	5.10	3.97	3.69
W588AX-20	DPDT	115	2200	5.68	5.39	5.10	3.97	3.69
W588AX-21	3PDT	6	6	6.23	5.92	5.60	4.36	4.05
W588AX-22	3PDT	12	24	6.23	5.92	5.60	4.36	4.05
W588AX-23	3PDT	24	96	6.23	5.92	5.60	4.36	4.05
W588AX-24	3PDT	115	2200	6.23	5.92	5.60	4.36	4.05

CLASS 588CP ENCLOSED PLUG-IN RELAYS

Class 588CP low cost UL Recognized (rated to 8.5 amp) continuous duty, general purpose relays are similar to Class 588, but utilize plastic dust cover and plug-in base. SPDT and DPDT contacts have 8-pin octal plug-in bases and 3PDT types use 11-pin plug-in bases. Size, 1 13/32" x 1 13/32" x 2 1/8".

5 AMP, DC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588CPX-1	SPDT	6	30	$7.54	$7.16	$6.79	$5.28	$4.90
W588CPX-2	SPDT	12	120	7.54	7.16	6.79	5.28	4.90
W588CPX-3	SPDT	24	480	7.54	7.16	6.79	5.28	4.90
W588CPX-4	SPDT	110	10080	8.58	8.15	7.72	6.00	5.58
W588CPX-5	DPDT	6	30	8.58	8.15	7.72	6.00	5.58
W588CPX-6	DPDT	12	120	8.58	8.15	7.72	6.00	5.58
W588CPX-7	DPDT	24	480	8.58	8.15	7.72	6.00	5.58
W588CPX-8	DPDT	110	10080	9.46	8.99	8.51	6.62	6.15
W588CPX-9	3PDT	6	30	10.56	10.03	9.50	7.39	6.86
W588CPX-10	3PDT	12	120	10.56	10.03	9.50	7.39	6.86
W588CPX-11	3PDT	24	480	10.56	10.03	9.50	7.39	6.86
W588CPX-12	3PDT	110	10080	11.40	10.82	10.25	7.98	7.40

10 AMP, DC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588CPX-13	SPDT	6	30	$7.68	$7.29	$6.91	$5.38	$4.99
W588CPX-14	SPDT	12	120	7.68	7.29	6.91	5.38	4.99
W588CPX-15	SPDT	24	480	7.68	7.29	6.91	5.38	4.99
W588CPX-16	SPDT	110	10080	8.56	8.13	7.70	5.98	5.57
W588CPX-17	DPDT	6	30	8.68	8.25	7.81	6.07	5.64
W588CPX-18	DPDT	12	120	8.68	8.25	7.81	6.07	5.64
W588CPX-19	DPDT	24	480	8.68	8.25	7.81	6.07	5.64
W588CPX-20	DPDT	110	10080	9.57	9.10	8.61	6.70	6.23
W588CPX-21	3PDT	6	30	10.78	10.24	9.70	7.55	7.01
W588CPX-22	3PDT	12	120	10.78	10.24	9.70	7.55	7.01
W588CPX-23	3PDT	24	480	10.78	10.24	9.70	7.55	7.01
W588CPX-24	3PDT	110	10080	11.67	11.09	10.51	8.17	7.59

5 AMP, AC VOLTAGE SPECIFIED

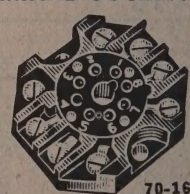
Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588ACPX-1	SPDT	6	6	$7.76	$7.37	$6.99	$5.43	$5.04
W588ACPX-2	SPDT	12	24	7.76	7.37	6.99	5.43	5.04
W588ACPX-3	SPDT	24	96	7.76	7.37	6.99	5.43	5.04
W588ACPX-4	SPDT	115	2200	7.76	7.37	6.99	5.43	5.04
W588ACPX-5	DPDT	6	6	8.64	8.21	7.78	6.05	5.61
W588ACPX-6	DPDT	12	24	8.64	8.21	7.78	6.05	5.61
W588ACPX-7	DPDT	24	96	8.64	8.21	7.78	6.05	5.61
W588ACPX-8	DPDT	115	2200	8.64	8.21	7.78	6.05	5.61
W588ACPX-9	3PDT	6	6	10.71	10.18	9.65	7.50	6.96
W588ACPX-10	3PDT	12	24	10.71	10.18	9.65	7.50	6.96
W588ACPX-11	3PDT	24	96	10.71	10.18	9.65	7.50	6.96
W588ACPX-12	3PDT	115	2200	10.71	10.18	9.65	7.50	6.96

10 AMP, AC VOLTAGE SPECIFIED

Magnecraft Number	Contacts	Coil V	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W588ACPX-13	SPDT	6	6	$7.79	$7.40	$7.01	$5.46	$5.06
W588ACPX-14	SPDT	12	24	7.79	7.40	7.01	5.46	5.06
W588ACPX-15	SPDT	24	96	7.79	7.40	7.01	5.46	5.06
W588ACPX-16	SPDT	115	2200	7.79	7.40	7.01	5.46	5.06
W588ACPX-17	DPDT	6	6	8.73	8.29	7.87	6.12	5.68
W588ACPX-18	DPDT	12	24	8.73	8.29	7.87	6.12	5.68
W588ACPX-19	DPDT	24	96	8.73	8.29	7.87	6.12	5.68
W588ACPX-20	DPDT	115	2200	8.73	8.29	7.87	6.12	5.68
W588ACPX-21	3PDT	6	6	10.85	10.31	9.76	7.59	7.05
W588ACPX-22	3PDT	12	24	10.85	10.31	9.76	7.59	7.05
W588ACPX-23	3PDT	24	96	10.85	10.31	9.76	7.59	7.05
W588ACPX-24	3PDT	115	2200	10.85	10.31	9.76	7.59	7.05

INDUSTRIAL SCREW TERMINAL SOCKETS

70-170



70-169

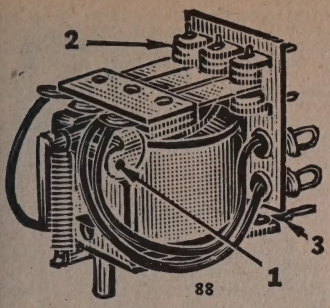
Magnecraft No. 70-169—Heavy duty molded thermoplastic 8-pin octal screw terminal socket rated at 10 amperes. Closed back construction requires no insulation. Binder head screw, 6-32 x 5/16, steel nickel plated in 8 places. Size, 2 1/4" x 2" x 5/8" thick. Mounting holes, .183" dia. Net Each..... **$2.75**

Magnecraft No. 70-170—Heavy duty molded thermoplastic 11-pin octal screw terminal socket rated at 10 amperes. Closed back construction requires no insulation. Binder head screw, 6-32 x 5/16, steel nickel plated in 11 places. Size, 2 9/16" x 2 1/2" x 5/8" thick. Mounting holes, .173" dia. Net Each..... **$4.15**

TERMINAL SOCKET QUANTITY PRICES

Magnecraft Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500
70-169	$2.75	$2.48	$2.34	$2.20	$2.06	$1.79
70-170	4.15	3.74	3.54	3.32	3.12	2.70

★LARGER QUANTITY PRICES ON REQUEST



1. Armature hinge pin is a rivet of stainless steel with oversize precision reamed bearing surfaces for stabilized adjustment and long operating life.

2. Built-in contact wipe; silver alloy contacts are riveted for greater dependability.

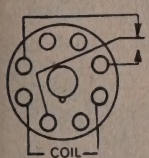
3. Molded coil bobbins with ruggedized coil terminal inserts.

88HP

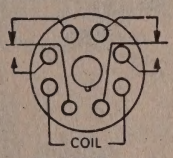
88CP

88ANCP

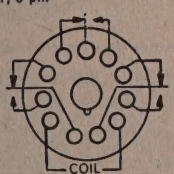
PLUG-IN HEADER WIRING DIAGRAMS



WD-1 SPDT, 8-pin



WD-2 DPDT, 8-pin



WD-3 3PDT, 11-pin

CLASS 88ANCP ENCLOSED NEON-LIGHTED RELAYS

Same as Class 88CP, but with neon light to show when coil is energized. Units listed are 115 VAC†, 3 VA nom. power. Size, 1⅜" sq. x 2⅛" h. above socket. Wt., 3 oz.

Magnecraft Number	Contacts	Net Ea., Lots of 1-9	10-24	25-49*
W88ANCPX-1	SPDT	$8.87	$8.43	$8.00
W88ANCPX-2	DPDT	9.74	9.26	8.77
W88ANCPX-3	3PDT	11.80	11.21	10.63

CLASS 88 AC-DC 10-AMP GENERAL PURPOSE RELAYS

High reliability, general purpose relay has glass melamine insulation for high dielectric strength and resistance to humidity or temperature change. Molded nylon bobbin. Contacts rated 10 amps at 115 VAC, non-inductive. Tinned solder terminals. Single 6-32 tapped mtg. hole with locating boss. Size, 1 3/16" lg. x 1 3/16" w. x 1¼" h. Weight, 2 oz.

Magnecraft No.	Contacts	Volts or Current†	Resis., Ohms	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W88AX-1	SPDT	6 VAC	.....	3 VA	$4.82	$4.58	$4.34	$4.10
W88AX-2	SPDT	12 VAC	.....	3 VA	4.82	4.58	4.34	4.10
W88AX-3	SPDT	24 VAC	.....	3 VA	4.82	4.58	4.34	4.10
W88AX-4	SPDT	115 VAC	.....	3 VA	4.82	4.58	4.34	4.10
W88AX-34	SPDT	230 VAC	.....	3 VA	5.45	5.18	4.90	4.64
W88AX-5	DPDT	6 VAC	.....	3 VA	5.64	5.36	5.07	4.79
W88AX-6	DPDT	12 VAC	.....	3 VA	5.64	5.36	5.07	4.79
W88AX-7	DPDT	24 VAC	.....	3 VA	5.64	5.36	5.07	4.79
W88AX-8	DPDT	115 VAC	.....	3 VA	5.64	5.36	5.07	4.79
W88AX-32	DPDT	230 VAC	.....	3 VA	6.25	5.93	5.63	5.31
W88AX-9	3PDT	6 VAC	.....	3 VA	6.27	5.95	5.64	5.32
W88AX-10	3PDT	12 VAC	.....	3 VA	6.27	5.95	5.64	5.32
W88AX-11	3PDT	24 VAC	.....	3 VA	6.27	5.95	5.64	5.32
W88AX-12	3PDT	115 VAC	.....	3 VA	6.27	5.95	5.64	5.32
W88AX-36	3PDT	230 VAC	.....	3 VA	6.92	6.58	6.23	5.88
W88X-2	SPDT	6 VDC	25	1.5 W	4.31	4.10	3.87	3.66
W88X-3	SPDT	12 VDC	100	1.5 W	4.31	4.10	3.87	3.66
W88X-4	SPDT	24 VDC	400	1.5 W	4.31	4.10	3.87	3.66
W88X-5	SPDT	110 VDC	8000	1.5 W	5.07	4.82	4.57	4.32
W88X-6	DPDT	6 VDC	25	1.5 W	4.99	4.74	4.49	4.24
W88X-7	DPDT	12 VDC	100	1.5 W	4.99	4.74	4.49	4.24
W88X-8	DPDT	24 VDC	400	1.5 W	4.99	4.74	4.49	4.24
W88X-9	DPDT	110 VDC	8000	1.5 W	5.75	5.47	5.18	4.89
W88X-10	3PDT	6 VDC	25	1.5 W	5.55	5.28	5.00	4.73
W88X-11	3PDT	12 VDC	100	1.5 W	5.55	5.28	5.00	4.73
W88X-12	3PDT	24 VDC	400	1.5 W	5.55	5.28	5.00	4.73
W88X-13	3PDT	110 VDC	8000	1.5 W	6.28	5.96	5.65	5.33
W88X-14*	SPDT	7.2 mA	2500	125 mW	4.96	4.70	4.46	4.21
W88X-15*	SPDT	5.0 mA	5000	125 mW	5.05	4.80	4.55	4.29
W88X-16*	SPDT	3.6 mA	10,000	125 mW	5.61	5.32	5.05	4.77
W88X-17*	DPDT	10 mA	2500	250 mW	5.29	5.03	4.77	4.49
W88X-18*	DPDT	7.2 mA	5000	250 mW	5.42	5.15	4.87	4.61
W88X-19*	DPDT	5 mA	10,000	250 mW	5.94	5.65	5.34	5.05
W88X-20*	3PDT	12.3 mA	2500	375 mW	5.85	5.55	5.26	4.97
W88X-21*	3PDT	8.7 mA	5000	375 mW	5.99	5.69	5.39	5.09
W88X-22*	3PDT	6.1 mA	10,000	375 mW	6.52	6.20	5.87	5.54

CLASS 88HP HERMETICALLY-SEALED PLUG-IN 10-AMP AC-DC RELAYS

Hermetically-sealed Class 88 relays are high reliability units. Octal 8-pin plug on DPDT; 11-pin plug on 3PDT. Silver alloy contacts rated 10 amps. Size, 1 11/16" dia. x 2 1/32" h. above socket. Weight, 5 oz.

W88AHPX-21	DPDT	6 VAC	.....	3 VA	$16.93	$16.08	$15.24	$14.39
W88AHPX-22	DPDT	12 VAC	.....	3 VA	16.93	16.08	15.24	14.39
W88AHPX-23	DPDT	24 VAC	.....	3 VA	16.93	16.08	15.24	14.39
W88AHPX-24	DPDT	115 VAC	.....	3 VA	16.93	16.08	15.24	14.39
W88AHPX-36	3PDT	115 VAC	.....	3 VA	19.43	18.45	17.48	16.51
W88HPX-32	DPDT	6 VDC	25	1.5 W	16.31	15.49	14.68	13.86
W88HPX-33	DPDT	12 VDC	100	1.5 W	16.31	15.49	14.68	13.86
W88HPX-34	DPDT	24 VDC	400	1.5 W	16.31	15.49	14.68	13.86
W88HPX-35	DPDT	110 VDC	8000	1.5 W	17.66	16.78	15.89	15.01
W88HPX-51	3PDT	24 VDC	400	1.5 W	18.78	17.84	16.91	15.96

CLASS 88CP ENCLOSED, PLUG-IN 10-AMP, AC-DC RELAYS

Three-way protection against relay down time: 1) High reliability Class 88 relay described above; 2) Polycarbonate dust cover; 3) Plug-in mounting for quick change. "See-thru" enclosed design has 8-pin octal plug on SPDT and DPDT types; 11-pin plug on 3PDT types. Silver alloy contacts rated 10 amps. Size, 1⅜" x 1⅜" x 2⅛" h., above socket. 3 oz.

W88ACPX-1	SPDT	6 VAC	.....	3 VA	$ 7.58	$ 7.19	$ 6.81	$6.44
W88ACPX-2	SPDT	12 VAC	.....	3 VA	7.58	7.19	6.81	6.44
W88ACPX-3	SPDT	24 VAC	.....	3 VA	7.58	7.19	6.81	6.44
W88ACPX-4	SPDT	115 VAC	.....	3 VA	7.58	7.19	6.81	6.44
W88ACPX-76	SPDT	230 VAC	.....	3 VA	8.43	8.01	7.59	7.17
W88ACPX-5	DPDT	6 VAC	.....	3 VA	8.45	8.03	7.61	7.18
W88ACPX-6	DPDT	12 VAC	.....	3 VA	8.45	8.03	7.61	7.18
W88ACPX-7	DPDT	24 VAC	.....	3 VA	8.45	8.03	7.61	7.18
W88ACPX-8	DPDT	115 VAC	.....	3 VA	8.45	8.03	7.61	7.18
W88ACPX-32	DPDT	230 VAC	.....	3 VA	9.33	8.87	8.40	7.94
W88ACPX-9	3PDT	6 VAC	.....	3 VA	10.55	10.03	9.50	8.97
W88ACPX-10	3PDT	12 VAC	.....	3 VA	10.55	10.03	9.50	8.97
W88ACPX-11	3PDT	24 VAC	.....	3 VA	10.55	10.03	9.50	8.97
W88ACPX-12	3PDT	115 VAC	.....	3 VA	10.55	10.03	9.50	8.97
W88ACPX-39	3PDT	230 VAC	.....	3 VA	11.38	10.82	10.25	9.68
W88CPX-1	SPDT	6 VDC	25	1.5 W	7.44	7.08	6.70	6.33
W88CPX-2	SPDT	12 VDC	100	1.5 W	7.44	7.08	6.70	6.33
W88CPX-3	SPDT	24 VDC	400	1.5 W	7.44	7.08	6.70	6.33
W88CPX-4	SPDT	110 VDC	8000	1.5 W	8.27	7.86	7.44	7.04
W88CPX-5	DPDT	6 VDC	25	1.5 W	8.40	7.98	7.56	7.14
W88CPX-6	DPDT	12 VDC	100	1.5 W	8.40	7.98	7.56	7.14
W88CPX-7	DPDT	24 VDC	400	1.5 W	8.40	7.98	7.56	7.14
W88CPX-8	DPDT	110 VDC	8000	1.5 W	9.24	8.78	8.32	7.85
W88CPX-9	3PDT	6 VDC	25	1.5 W	10.43	9.90	9.39	8.86
W88CPX-10	3PDT	12 VDC	100	1.5 W	10.43	9.90	9.39	8.86
W88CPX-11	3PDT	24 VDC	400	1.5 W	10.43	9.90	9.39	8.86
W88CPX-12	3PDT	110 VDC	8000	1.5 W	11.28	10.71	10.15	9.59
W88CPX-13*	SPDT	7.2 mA	2500	125 mW	8.04	7.64	7.23	6.84
W88CPX-14*	SPDT	5.0 mA	5000	125 mW	8.14	7.73	7.33	6.92
W88CPX-15*	SPDT	3.6 mA	10,000	125 mW	8.63	8.19	7.77	7.33
W88CPX-16*	DPDT	10 mA	2500	250 mW	8.52	8.09	7.67	7.23
W88CPX-17*	DPDT	7.2 mA	5000	250 mW	8.60	8.17	7.74	7.31
W88CPX-18*	DPDT	5 mA	10,000	250 mW	9.17	8.70	8.25	7.80
W88CPX-19*	3PDT	12.3 mA	2500	375 mW	10.50	9.98	9.45	8.93
W88CPX-20*	3PDT	8.7 mA	5000	375 mW	10.65	10.11	9.59	9.05
W88CPX-21*	3PDT	6.1 mA	10,000	375 mW	11.19	10.64	10.07	9.51

*DC current-actuated for plate circuit operation; all others voltage-actuated. †Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

GENERAL PURPOSE AND LOW COST POWER RELAYS

CLASS 88L AC AND DC OPERATED 10-AMP LATCHING RELAYS

Two Class 88 relays with interlocking latch-in levers mounted on a common base. Each armature latches when pulled in. Energizing one armature releases (resets) the other. Each relay is complete with independent operating coil. Contacts silver alloy rated 10 amps. Relay coils designed for intermittent duty. Size, 3" lg. x 1¾" w. x 1 15/16" h., max. Weight, 6½ oz.

Magnecraft Number	Contacts	Volts or Current*	Resis., Ohms*	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W88ALX-2	4PDT	6 VAC	.....	6 VA	$13.71	$13.02	$12.34	$11.65
W88ALX-3	4PDT	24 VAC	.....	6 VA	13.71	13.02	12.34	11.65
W88ALX-4	4PDT	115 VAC	.....	6 VA	13.71	13.02	12.34	11.65
W88ALX-5	6PDT	6 VAC	.....	6 VA	16.50	15.68	14.85	14.03
W88ALX-6	6PDT	24 VAC	.....	6 VA	16.50	15.68	14.85	14.03
W88ALX-7	6PDT	115 VAC	.....	6 VA	16.50	15.68	14.85	14.03
W88LX-1	4PDT	6 VDC	12	3 W	12.46	11.84	11.21	10.59
W88LX-2	4PDT	12 VDC	50	3 W	12.46	11.84	11.21	10.59
W88LX-3	4PDT	24 VDC	200	3 W	12.46	11.84	11.21	10.59
W88LX-4	4PDT	110 VDC	4000	3 W	14.08	13.38	12.67	11.97
W88LX-5	6PDT	6 VDC	12	3 W	15.14	14.38	13.63	12.87
W88LX-6	6PDT	12 VDC	50	3 W	15.14	14.38	13.63	12.87
W88LX-7	6PDT	24 VDC	200	3 W	15.14	14.38	13.63	12.87
W88LX-8	6PDT	110 VDC	4000	3 W	16.73	15.89	15.06	14.22

CLASS 88L AC AND DC 10-AMP ENCLOSED LATCHING RELAYS

Same operation and features as Class 88L above, but with enclosed dust cover plug-in construction. Clear, crackproof plastic case with molded 20-pin plug. 4PDT contacts rated 10 amps (2 Form "C" plus 2 Form "C"). Size, 2⅜" x 1¾" x 3 3/16" h. (not including plug). Mates with Amphenol 77-MIP-20 socket or equivalent. Weight, 8 oz.

Magnecraft Number	Contacts	Volts or Current*	Resis., Ohms*	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W88ALCPX-10	4PDT	6 VAC	.....	.....	$22.17	$21.07	$19.95	$18.85
W88ALCPX-11	4PDT	24 VAC	.....	.....	22.17	21.07	19.95	18.85
W88ALCPX-12	4PDT	115 VAC	.....	.....	22.17	21.07	19.95	18.85
W88LCPX-9	4PDT	6 VDC	12	.....	20.68	19.64	18.61	17.57
W88LCPX-10	4PDT	12 VDC	50	.....	20.68	19.64	18.61	17.57
W88LCPX-11	4PDT	24 VDC	200	.....	20.68	19.64	18.61	17.75
W88LCPX-12	4PDT	110 VDC	4000	.....	20.99	19.94	18.89	17.84

CLASS 88R SMALL AC AND DC 15-AMP POWER RELAYS

Extra quality, high reliability relay; 15-amp heavy-duty silver alloy contacts. Designed for industrial control applications. Tinned solder terminals. One 6-32 tapped mtg. hole and locating boss. Size, 1 7/8" lg. x 1 5/16" w. x 1 9/32" h. Weight, 3 oz.

W88ARX-2	DPDT	12 VAC	.....	3 VA	$7.83	$7.44	$7.05	$6.66
W88ARX-3	DPDT	24 VAC	.....	3 VA	7.83	7.44	7.05	6.66
W88ARX-4	DPDT	115 VAC	.....	3 VA	8.04	7.64	7.24	6.83
W88RX-2	DPDT	12 VDC	100	1.5 W	7.76	7.37	6.98	6.60
W88RX-3	DPDT	24 VDC	400	1.5 W	7.76	7.37	6.98	6.60

CLASS 88K LOW COST AC AND DC 15-AMP POWER RELAYS

Heavy duty, silver cadmium oxide SPDT contacts are gold flashed and rated 15 amps at 115 VAC or 28 VDC resistive for power switching at low cost. Contacts assembled to glass melamine insulated terminal board for high dielectric strength. Flexible moving arm gives excellent contact wipe. Terminals can be solder connected or will accept AMP Faston (or equivalent) 250 Series receptacles on contacts, 110 Series on coil. Supplied on mounting base with base/chassis insulator. Contacts are 1 Form C, standard. Size, 2 5/16" lg. x 1 3/16" w. x 1¼" h., overall.

Magnecraft Number	Contacts	Coil Data* Volts	Ohms	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W88AKX-1	SPDT	24 VAC	.....	3 VA	$6.14	$5.84	$5.53	$5.22
W88AKX-2	SPDT	115 VAC	.....	3 VA	6.14	5.84	5.53	5.22
W88AKX-3	SPDT	230 VAC	.....	3 VA	7.43	7.07	6.69	6.32
W88KX-1	SPDT	6 VDC	25	1.5 W	5.88	5.59	5.29	5.00
W88KX-2	SPDT	12 VDC	100	1.5 W	5.88	5.59	5.29	5.00
W88KX-3	SPDT	24 VDC	400	1.5 W	5.88	5.59	5.29	5.00
W88KX-4	SPDT	110 VDC	8000	1.5 W	6.80	6.47	6.12	5.79

NEW CLASS 89CQ SURFACE MOUNT DPDT 20-AMP POWER RELAYS

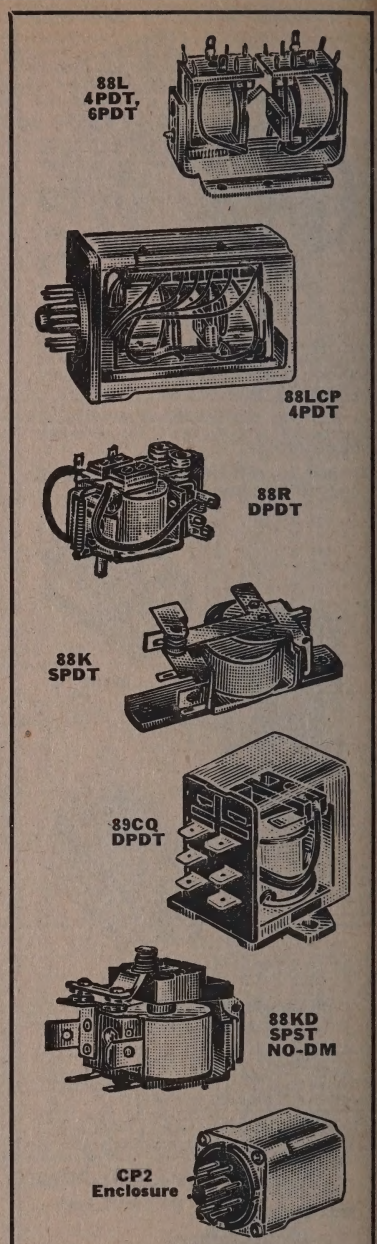
Surface mount design. AC and DC operation. DPDT contacts rated 20 amps at 115 VAC or 16 amps at 230 VAC, resistive load. ¼" quick connect terminals. Clear, polycarbonate, crackproof dust cover. Size, 1 5/16" w. x 2 3/64" d. x 1 15/16" h., overall.

W89ACQX-1	DPDT	6 VAC	.....	6 VA	$9.19	$8.72	$8.27	$7.81
W89ACQX-2	DPDT	12 VAC	.....	6 VA	9.19	8.72	8.27	7.81
W89ACQX-3	DPDT	24 VAC	.....	6 VA	8.37	7.95	7.55	7.12
W89ACQX-4	DPDT	120 VAC	.....	6 VA	8.37	7.95	7.55	7.12
W89ACQX-5	DPDT	240 VAC	.....	6 VA	8.95	8.50	8.06	7.61
W89CQX-1	DPDT	6 VDC	.....	3 W	9.06	8.61	8.16	7.70
W89CQX-2	DPDT	12 VDC	.....	3 W	9.06	8.61	8.16	7.70
W89CQX-3	DPDT	24 VDC	.....	3 W	9.06	8.61	8.16	7.70
W89CQX-4	DPDT	110 VDC	.....	3 W	9.36	8.90	8.42	7.95

CLASS 88KD AC AND DC OPERATED 50-AMP POWER RELAYS

General purpose relays offer heavy duty silver alloy, gold flashed contacts for power switching. Contacts are SPST-NO, Form X, double-make; rated 50 amps at 115 VAC or 28 VDC resistive. Stationary contacts assembled to glass melamine insulated terminal board. Movable contacts and armature assembly on molded phenolic blade for excellent wipe, high reliability. Terminals can be soldered or accept AMP Faston 250 Series receptacles on contacts, 110 Series on coil. One 6-32 mtg. hole, locating boss. Size, 1 15/16" lg. x 1½" h. x 1 1/16" w., overall. Wt., 3 oz.

Magnecraft Number	Contacts	Coil Data* Volts	Ohms	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W88KADX-1	SPST-NO	24 VAC	.....	3 VA	$6.35	$6.04	$5.73	$5.40
W88KADX-2	SPST-NO	115 VAC	.....	3 VA	6.35	6.04	5.73	5.40
W88KADX-3	SPST-NO	230 VAC	.....	3 VA	6.80	6.47	6.12	5.79
W88KDX-1	SPST-NO	6 VDC	25	1.5 W	5.64	5.36	5.07	4.79
W88KDX-2	SPST-NO	12 VDC	100	1.5 W	5.64	5.36	5.07	4.79
W88KDX-3	SPST-NO	24 VDC	400	1.5 W	5.64	5.36	5.07	4.79
W88KDX-4	SPST-NO	110 VDC	8000	1.5 W	6.69	6.35	6.02	5.69



CLASS CP2, CP3 AND CP4 PLUG-IN RELAY ENCLOSURES

Tough see-through dust cover enclosures of crackproof polycarbonate resin with high impact strength and dimensionally stable characteristics. Available in three sizes, with 8-pin or 11-pin plugs. Plug keyways oriented toward side of enclosure. Suitable for electronic assemblies. Mates with Amphenol 77-MIP-8 or -11 socket or equiv. **Size:** CP2, 1⅜" sq. x 2⅛" above socket; CP3, 1¾" x 2⅜" x 2⅞"; CP4, 1¾" x 2⅜" x 3½". Weight: CP2, 2 oz.; CP3, 3 oz.; CP4, 4 oz.

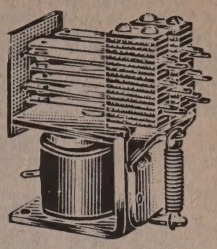
Magnecraft No.	Pins	Net Each, Lots of* 1-24	25-49	50-99	100-249
WCP2X-1	8	$0.75	$0.71	$0.68	$0.56
WCP2X-2	11	.94	.89	.85	.71
WCP3X-1	8	1.09	1.04	.98	.82
WCP3X-2	11	1.29	1.23	1.16	.97
WCP4X-1	8	1.90	1.81	1.71	1.43
WCP4X-2	11	2.48	2.36	2.23	1.86

***COIL DATA:** Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal or less for AC relays at 25° C. Resistance shown is ±10% at 25° C. **★Larger quantity prices available on request.**

CLASS 12 MULTI-POLE GENERAL PURPOSE RELAYS

lass 12 low cost general purpose relays with multiple contacts for wide use in commercial pplications. **Coil Dissipation:** 3 watts max. **Mounting:** Four 6-32 tapped holes on ¾" x 7/8" nters. **Standard Contacts:** 3/16" silver, rated 10 amp resistive at 115 VAC. **Size:** DPDT, " x 1 23/32" x 1 9/16"; 3PDT, 1" x 1 23/32" x 1 7/8"; 4PDT, 1" x 1 23/32" x 1 7/8"; 6PDT, 1" x 3/32" x 2 3/16".

lagnecraft Number	10 Amp Contacts	Coil		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-249	250 Up
12X-1	DPDT	6 VDC	17	$ 6.02	$ 5.72	$ 5.43	$ 4.23	$ 3.92
12X-3	DPDT	12 VDC	64	6.02	5.72	5.43	4.23	3.92
12X-3	DPDT	24 VDC	215	6.02	5.72	5.43	4.23	3.92
12X-4	DPDT	110 VDC	5000	6.78	6.44	6.12	4.75	4.41
12X-5	3PDT	6 VDC	17	7.37	7.01	6.63	5.16	4.79
12X-6	3PDT	12 VDC	64	7.37	7.01	6.63	5.16	4.79
12X-7	3PDT	24 VDC	215	7.37	7.01	6.63	5.16	4.79
12X-8	3PDT	110 VDC	5000	8.11	7.71	7.32	5.68	5.28
12X-9	4PDT	6 VDC	17	8.71	8.28	7.84	6.12	5.66
12X-10	4PDT	12 VDC	64	8.71	8.28	7.84	6.12	5.66
12X-11	4PDT	24 VDC	215	8.71	8.28	7.84	6.12	5.66
12X-12	4PDT	110 VDC	5000	9.45	8.98	8.52	6.62	6.16
12X-13	6PDT	6 VDC	17	11.38	10.81	10.25	7.98	7.40
12X-14	6PDT	12 VDC	64	11.38	10.81	10.25	7.98	7.40
12X-15	6PDT	24 VDC	215	11.38	10.81	10.25	7.98	7.40
12X-16	6PDT	110 VDC	5000	12.14	11.53	10.94	8.51	7.90
12AX-1	DPDT	6 VAC	1.2	6.02	5.72	5.43	4.23	3.92
12AX-2	DPDT	12 VAC	9	6.02	5.72	5.43	4.23	3.92
12AX-3	DPDT	24 VAC	19	6.02	5.72	5.43	4.23	3.92
12AX-4	DPDT	115 VAC	645	6.02	5.72	5.43	4.23	3.92
12AX-5	3PDT	6 VAC	1.2	7.37	7.01	6.63	5.16	4.79
12AX-6	3PDT	12 VAC	9	7.37	7.01	6.63	5.16	4.79
12AX-7	3PDT	24 VAC	19	7.37	7.01	6.63	5.16	4.79
12AX-8	3PDT	115 VAC	645	7.37	7.01	6.63	5.16	4.79
12AX-9	4PDT	6 VAC	1.2	8.71	8.28	7.84	6.12	5.66
12AX-10	4PDT	12 VAC	9	8.71	8.28	7.84	6.12	5.66
12AX-11	4PDT	24 VAC	19	8.71	8.28	7.84	6.12	5.66
12AX-12	4PDT	115 VAC	645	8.71	8.28	7.84	6.12	5.66
12AX-13	6PDT	6 VAC	1.2	11.38	10.81	10.25	7.98	7.40
12AX-14	6PDT	12 VAC	9	11.38	10.81	10.25	7.98	7.40
12AX-15	6PDT	24 VAC	19	11.38	10.81	10.25	7.98	7.40
12AX-16	6PDT	115 VAC	645	11.38	10.81	10.25	7.98	7.40



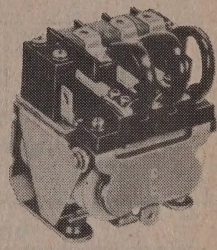
Class 12

CLASS 27 SENSITIVE POWER RELAYS

ensitive power relays with dual-coil design rated for DC operation. Contacts are rated 0 amp resistive at 28 VDC or 115 VAC.

Magnecraft Number	20 Amp Contacts	Coil Res.* (ohms)	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250-Up
W27SX-17	SPST	150	$22.64	$21.51	$20.38	$15.85	$14.72
W27SX-24	DPDT	150	25.07	23.82	22.56	17.55	16.30
W27SX-3	3PDT	150	27.04	25.69	24.34	18.93	17.58
W27SX-31	4PDT	150	29.47	28.00	26.52	20.63	19.16
W27SX-10	5PDT	150	31.67	30.09	28.50	22.17	20.59

Also available with 600, 5600, and 13,400 ohm coils.

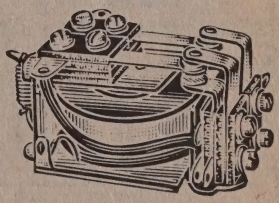


Class 27

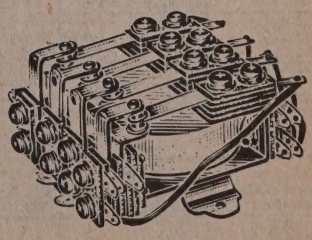
CLASS 94 POWER RELAYS

ompact and positive-acting relays for either AC or DC operation, used wherever depend-ble circuit switching is necessary. Silver contacts (¼" dia.) are rated at 15 amps resistive, amps inductive at 115 VAC or 28 VDC. Large contact surfaces are kept clean by good iping action. Two tapped holes 6-32 NC-2 on 2" centers for easy mounting. **Size:** DPDT, ¾" x 2 23/32" x 1 29/32"; 4PDT, 3 1/16" x 2 19/32" x 1 29/32". Weight, 8 oz.

lagnecraft Number	15 Amp Contacts	Coil		Net Each, Lots of				
		Volts	Ohms	1-24	25-49	50-99	100-249	250 Up
94X-1	SPDT	6 VDC	18	$ 7.13	$ 6.78	$ 6.41	$ 4.99	$ 4.63
94X-2	SPDT	12 VDC	72	7.13	6.78	6.41	4.99	4.63
94X-3	SPDT	24 VDC	288	7.13	6.78	6.41	4.99	4.63
94X-4	SPDT	110 VDC	6050	8.72	8.28	7.84	6.09	5.67
94X-5	DPDT	6 VDC	18	10.49	9.98	9.46	7.36	6.83
94X-6	DPDT	12 VDC	72	10.49	9.98	9.46	7.36	6.83
94X-7	DPDT	24 VDC	288	10.49	9.98	9.46	7.36	6.83
94X-8	DPDT	110 VDC	6050	12.10	11.50	10.89	8.48	7.87
94X-11	3PDT	6 VDC	18	15.53	14.76	13.99	10.88	10.11
94X-12	3PDT	12 VDC	72	15.53	14.76	13.99	10.88	10.11
94X-13	3PDT	24 VDC	288	15.53	14.76	13.99	10.88	10.11
94X-14	3PDT	110 VDC	6050	15.85	15.06	14.27	11.10	10.32
94X-15	4PDT	6 VDC	18	20.45	19.42	18.40	14.30	13.29
94X-16	4PDT	12 VDC	72	20.45	19.42	18.40	14.30	13.29
94X-17	4PDT	24 VDC	288	20.45	19.42	18.40	14.30	13.29
94X-18	4PDT	110 VDC	6050	22.03	20.93	19.82	15.43	14.32
94AX-1	SPDT	6 VAC	1.3	7.13	6.78	6.41	4.99	4.63
94AX-2	SPDT	12 VAC	5.3	7.13	6.78	6.41	4.99	4.63
94AX-3	SPDT	24 VAC	21	7.13	6.78	6.41	4.99	4.63
94AX-4	SPDT	115 VAC	480	7.13	6.78	6.41	4.99	4.63
94AX-5	SPDT	220 VAC	1930	8.09	7.69	7.28	5.67	5.27
94AX-6	DPDT	6 VAC	1.3	10.49	9.98	9.45	7.35	6.83
94AX-7	DPDT	12 VAC	5.3	10.49	9.98	9.45	7.35	6.83
94AX-8	DPDT	24 VAC	21	10.49	9.98	9.45	7.35	6.83
94AX-9	DPDT	115 VAC	480	10.49	9.98	9.45	7.35	6.83
94AX-10	DPDT	220 VAC	1930	11.46	10.89	10.33	8.03	7.45
94AX-11	3PDT	6 VAC	1.3	15.53	14.76	13.99	10.88	10.11
94AX-12	3PDT	12 VAC	5.3	15.53	14.76	13.99	10.88	10.11
94AX-13	3PDT	24 VAC	21	15.53	14.76	13.99	10.88	10.11
94AX-14	3PDT	115 VAC	480	15.53	14.76	13.99	10.88	10.11
94AX-15	3PDT	220 VAC	1930	16.49	15.68	14.84	11.55	10.71
94AX-16	4PDT	6 VAC	1.3	20.43	19.42	18.43	14.30	13.29
94AX-17	4PDT	12 VAC	5.3	20.43	19.42	18.43	14.30	13.29
94AX-18	4PDT	24 VAC	21	20.43	19.42	18.43	14.30	13.29
94AX-19	4PDT	115 VAC	480	20.43	19.42	18.43	14.30	13.29
94AX-20	4PDT	220 VAC	1930	21.40	20.33	19.26	14.98	13.90



Class 94 DPDT



Class 94 4PDT

CLASS 97 ENCLOSED PLUG-IN OR STUD-MOUNTING 25 AMP POWER RELAYS—UL RECOGNIZED (FILE NO. E31481)

Class 97 is a low cost 25 amp relay for 1 or 2 pole, 120/240 VAC applications. Available with socket for plug-in applications or for use with standard quick-connect terminals for simplicity and ease in wiring. Class 97 relays offer high quality, dependable performance and long life. Ideal for use in appliances, automation equipment, motor starting and heater circuits, clock controlled systems, laundry equipment, vending machines, machine tools, furnace controls, panel boards and air conditioners. Holding circuit permits sustaining operation of the relay from momentary switches, without sacrificing one of the heavy duty load contacts where the coil voltage may be different from the load circuit voltage.

STUD MOUNTING TYPE

Magnecraft Number	Coil		Wiring Diagram	Net Each, Lots of					
	Volts	Ohms		1-9	10-24	25-49	50-99	100-499	500 Up
W97ACSX-1	12 VAC	3.5	A	$12.72	$12.08	$11.45	$10.18	$8.90	$7.63
W97ACSX-2	24 VAC	13.2	A	12.60	11.98	11.34	10.08	8.82	7.56
W97ACSX-3	115 VAC	265	A	12.72	12.08	11.45	10.18	8.90	7.63
W97ACSX-4	220 VAC	920	A	12.60	11.98	11.34	10.08	8.82	7.56
W97CSX-1	12 VDC	58	A	12.41	11.78	11.17	9.92	8.69	7.44
W97CSX-2	24 VDC	220	A	12.41	11.78	11.17	9.92	8.69	7.44

PLUG-IN TYPE

W97ACPX-1	12 VAC	3.5	A	$12.41	$11.78	$11.17	$ 9.92	$8.69	$7.44
W97ACPX-2	24 VAC	13.2	A	12.17	11.56	10.96	9.73	8.52	7.30
W97ACPX-3	115 VAC	265	A	12.41	11.78	11.17	9.92	8.69	7.44
W97ACPX-4	220 VAC	920	A	12.60	11.98	11.34	10.08	8.82	7.56
W97CPX-1	12 VDC	58	A	12.17	11.56	10.96	9.73	8.52	7.30
W97CPX-2	24 VDC	220	A	12.17	11.56	10.96	9.73	8.52	7.30

HOLDING CIRCUIT (PLUG-IN)

W97ALCPX-1	115 VAC	265	B	$14.42	$13.70	$12.98	$11.54	$10.09	$8.65
W97ALCPX-2	220 VAC	920	B	14.71	13.98	13.24	11.76	10.30	8.83

SOCKETS FOR CLASS 97

Magnecraft Number	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-499	500 Up
70-311	$2.16	$2.06	$1.94	$1.73	$1.51	$1.41
70-312	2.47	2.34	2.23	1.97	1.73	1.61
70-313*	3.29	3.12	2.96	2.63	2.30	2.13
70-314†	3.34	3.17	3.00	2.67	2.34	2.17

*Use with holding circuit. †UL Recognized.

CLASS 96 GENERAL PURPOSE POWER RELAY

Continuous duty general purpose power relay available in AC or DC with DPDT (2C) and SPDT-DB-DM (1Z) contact arrangements. Excellent for general industrial power control circuits. Silver cadmium oxide contacts rated at 15 or 30 amps at 28 VDC or 115 VAC resistive. **Mounting Data:** 4 tapped holes 6-32 NC-2; ½" x 1 5/16" centers. **Size:** 1½" x 1 21/32" x 1⅞". Weight, 4.4 oz.

Magnecraft Number	Contacts		Coil		Net Each, Lots of				
	Form	Amps	Volts	Ohms	1-24	25-49	50-74	75-99	100-249
W96AX-1	DPDT	15	6 VAC	1.8	$9.94	$9.45	$8.95	$6.96	$6.47
W96AX-2	DPDT	15	24 VAC	28.8	9.94	9.45	8.95	6.96	6.47
W96AX-3	DPDT	15	115 VAC	661	9.94	9.45	8.95	6.96	6.47
W96AX-4	DPDT	15	220 VAC	2647	10.43	9.91	9.39	7.30	6.78
W96X-1	DPDT	15	6 VDC	14	9.64	9.16	8.69	6.75	6.27
W96X-2	DPDT	15	12 VDC	56	9.64	9.16	8.69	6.75	6.27
W96X-3	DPDT	15	24 VDC	230	9.64	9.16	8.69	6.75	6.27
W96X-4	SPDT-	30	6 VDC	14	10.00	9.50	9.00	7.00	6.50
W96AX-5	DB-DM	30	115 VAC	661	10.32	9.79	9.28	7.22	6.70

CLASS 93 20 AMP POWER RELAYS AC/DC OPERATION

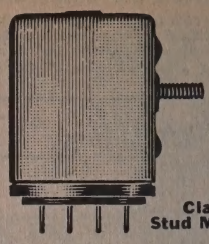
Designed and constructed with a variety of features that contribute to the sensitivity and longevity of the relay. Contacts and terminals are mounted on molded phenolic blocks with integral barriers. Movable contact blades are made of spring temper phosphor bronze for high conductivity and long life. Adjusting screws on each blade permit close adjustment. Armature pivots on machined phosphor bronze bearing pins and pivot holes are precision reamed. **Mounting Data:** 4 tapped holes 6-32 NC-2, ½" x 1 5/16" centers. **Contacts:** ¼" dia. silver, 20 amps resistive at 115 VAC or 28 VDC. **Size:** 3PDT, 2" x 1 13/16" x 2 5/16"; 5PDT, 2" x 2 5/16" x 2 5/16".

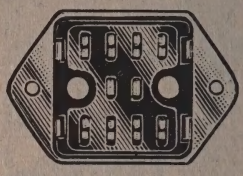
DC VOLTAGE SPECIFIED

Magnecraft Number	20 Amp Contacts	Coil		Net Each, Lots of				
		VDC	Ohms	1-24	25-49	50-99	100-249	250 Up
W93X-1	3PDT	6	14	$ 9.43	$ 8.95	$ 8.48	$6.60	$6.13
W93X-2	5PDT	6	10	13.76	13.07	12.39	9.63	8.93
W93X-3	3PDT	24	218	9.43	8.95	8.48	6.60	6.13
W93X-4	5PDT	24	164	13.76	13.07	12.39	9.63	8.93
W93X-5	3PDT	110	4580	9.80	9.32	8.82	6.86	6.38
W93X-6	5PDT	110	3430	14.14	13.43	12.73	9.90	9.20

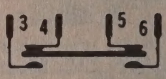
AC VOLTAGE SPECIFIED

Magnecraft Number	20 Amp Contacts	Coil		Net Each, Lots of				
		VAC	Ohms	1-24	25-49	50-99	100-249	250 Up
W93AX-1	3PDT	6	.8	$ 9.43	$ 8.95	$ 8.48	$6.60	$6.13
W93AX-2	5PDT	6	.6	13.76	13.07	12.39	9.63	8.93
W93AX-3	3PDT	24	12.5	9.43	8.95	8.48	6.60	6.13
W93AX-4	5PDT	24	9.6	13.76	13.07	12.39	9.63	8.93
W93AX-5	3PDT	115	253	9.43	8.95	8.48	6.60	6.13
W93AX-6	5PDT	115	194	13.76	13.07	12.39	9.63	8.93


Class 97 Stud Mounting


70-312, 70-313, 70-314

70-311



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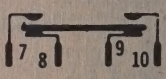

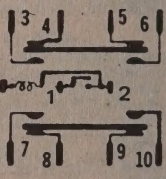

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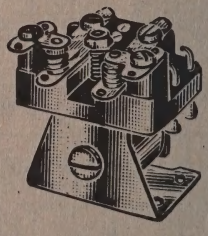
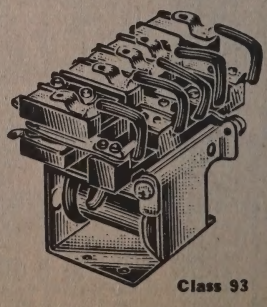

Class 96

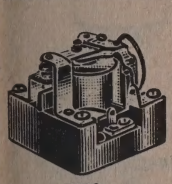

Class 93

Magnecraft® Power Relays

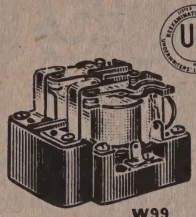
CLASS 99 HEAVY DUTY POWER RELAYS

UL LISTED FOR HEAVY DUTY INDUSTRIAL CONTROL

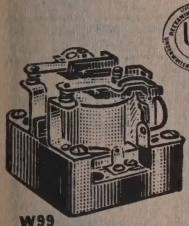
Relays illustrated with UL emblem are listed by Underwriters Laboratories under Motor Controller, Magnetic, Across The Line Starter: Open (File No. E43641). The only exception is W99AX-7, DPDT, 440 VAC relay, indicated by †.



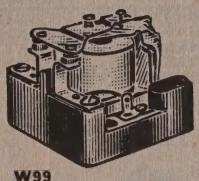
W99 SPDT



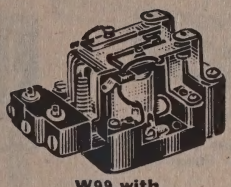
W99 DPDT



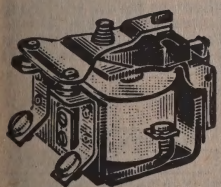
W99 DPST-NO



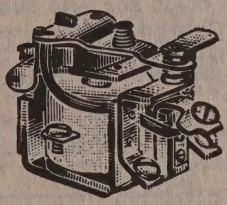
W99 SPST-NO-DM



W99 with Aux Snap Switch



W99SD SPST-NO-DM



W99S SPDT

Rugged, precision-built hinge pin armature bearings for extra long life. Lowest friction and maximum contact effectiveness. Dimensionally interchangeable with other power relays of the clapper type. Heavy duty plastic base and molded contact barrier mounted to armature for high insulation resistance. Positive contact wiping action. Heavy duty screw terminals. Molded coil bobbin. **Contacts:** Silver alloy, 5/16" dia., gold flashed. Choice of SPDT, DPDT, DPST-NO and SPST-NO double break. **Size:** SPDT 25-amp, 2 3/16" sq. x 2 1/2" h.; DPDT 25-amp, 3 3/16" w. x 2 1/2" d. x 2 3/8" h.; DPST-NO 25-amp, 2 1/2" sq. x 2 3/8" h.; SPST-NO-DM 50-amp, 2 1/2" sq. x 2 3/16" h.

Magnecraft Number	Contacts Configuration	Contacts Rating	Coil Data* Volts	Coil Data* Ohms	Net Ea., 1-9*
W99AX-1	SPDT	25 A	24 VAC	.....	$6.53
W99AX-2	SPDT	25 A	115 VAC	.....	6.56
W99AX-3	SPDT	25 A	230 VAC	.....	6.77
W99X-1	SPDT	25 A	6 VDC	18	6.43
W99X-2	SPDT	25 A	12 VDC	70	6.43
W99X-3	SPDT	25 A	24 VDC	290	6.45
W99X-4	SPDT	25 A	110 VDC	6000	6.92
W99AX-4	DPDT	25 A	24 VAC	.....	9.20
W99AX-5	DPDT	25 A	115 VAC	.....	9.20
W99AX-6	DPDT	25 A	230 VAC	.....	9.42
W99AX-7†	DPDT	25 A	440 VAC	.....	9.47
W99X-5	DPDT	25 A	6 VDC	18	9.30
W99X-6	DPDT	25 A	12 VDC	70	9.30
W99X-7	DPDT	25 A	24 VDC	290	9.32
W99X-8	DPDT	25 A	110 VDC	6000	9.77
W99AX-8	DPST	25 A	24 VAC	.....	7.19
W99AX-9	DPST	25 A	115 VAC	.....	7.21
W99AX-10	DPST	25 A	230 VAC	.....	7.41
W99X-9	DPST	25 A	6 VDC	18	7.21
W99X-10	DPST	25 A	12 VDC	70	7.21
W99X-11	DPST	25 A	24 VDC	290	7.24
W99X-12	DPST	25 A	110 VDC	6000	7.68
W99ADX-1	SPST-NO-DM	50 A	24 VAC	.....	6.22
W99ADX-2	SPST-NO-DM	50 A	115 VAC	.....	6.22
W99ADX-3	SPST-NO-DM	50 A	230 VAC	.....	6.45
W99DX-1	SPST-NO-DM	50 A	6 VDC	18	6.18
W99DX-2	SPST-NO-DM	50 A	12 VDC	70	6.18
W99DX-3	SPST-NO-DM	50 A	24 VDC	290	6.20
W99DX-4	SPST-NO-DM	50 A	110 VDC	6000	6.63

CLASS 99 DPDT RELAYS WITH SPDT AUX SNAP SWITCH

DPDT power contacts rated 25 amps or 1 hp, SPDT snap switch rated 22 amps. Nominal power, 10 VA. Size, 4 1/2" x 2 1/2" x 2 3/8" h.

W99AX-56	DPDT	25 A	115 VAC	.....	$16.51
W99AX-57	(Relay)	25 A	230 VAC	.....	16.73

CLASS 99S HEAVY DUTY POWER RELAYS

Same as Class 99, without phenolic base. **Size:** SPST-NO-DM 50-amp, 2" x 2 1/2" x 1 5/16" high; SPDT 25-amp, 2" x 2 7/8" x 1 15/16" h.

W99SADX-1	SPST-NO-DM	50 A	24 VAC	.....	$7.03
W99SADX-2	SPST-NO-DM	50 A	115 VAC	.....	7.13
W99SADX-3	SPST-NO-DM	50 A	230 VAC	.....	7.37
W99SDX-1	SPST-NO-DM	50 A	6 VDC	18	6.85
W99SDX-2	SPST-NO-DM	50 A	12 VDC	70	6.85
W99SDX-3	SPST-NO-DM	50 A	24 VDC	290	6.89
W99SDX-4	SPST-NO-DM	50 A	110 VDC	6000	7.23
W99SAX-1	SPDT	25 A	24 VAC	.....	8.26
W99SAX-2	SPDT	25 A	115 VAC	.....	8.31
W99SAX-3	SPDT	25 A	230 VAC	.....	8.56
W99SX-1	SPDT	25 A	6 VDC	18	7.99
W99SX-2	SPDT	25 A	12 VDC	70	8.00
W99SX-3	SPDT	25 A	24 VDC	290	8.04
W99SX-4	SPDT	25 A	110 VDC	6000	8.39

***COIL DATA:** Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

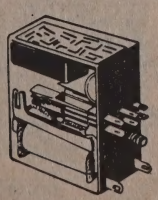
★**WRITE FOR LARGER QUANTITY PRICES**

CLASS 99B, 99DB HEAVY DUTY POWER RELAYS WITH BLOWOUT MAGNET FOR DC ARC-QUENCHING

Nominal power, AC, 10 VA; DC, 2.0 watts. Size, 99B, 3 3/16" x 2 1/2" x 2 7/16" h.; 99DB, 2 1/2" x 2 1/2" x 2 3/16" h.

Magnecraft Number	Contacts Configuration	Contacts Rating	Coil Data* Volts	Coil Data* Ohms	Net Ea., 1-9*
W99ABX-6	DPDT	10 A	115 VAC	.....	$14.87
W99ABX-7	DPDT	10 A	230 VAC	.....	15.23
W99BX-10	DPDT	10 A	110 VDC	6000	15.05
W99BX-11	DPDT	10 A	220 VDC	20000	17.72
W99ADBX-2	SPST-NO-DM	20 A	115 VAC	.....	9.94
W99ADBX-3	SPST-NO-DM	20 A	230 VAC	.....	10.31
W99DBX-5	SPST-NO-DM	20 A	110 VDC	6000	10.12
W99DBX-6	SPST-NO-DM	20 A	220 VDC	20000	12.80

CLASS 67CP MINATURE SOLID STATE TIME DELAY



Makes use of hybrid circuitry, combining a solid state for the timing function with a miniature industrial relay for up to 4PDT 5 ampere output switching. Contacts: DPDT as standard, 5 amps @ 28VDC or 115VAC resistive load; DC operation of 12 or 24VDC as standard (other voltages available on special order; ±2% Repeatability; Temperature range −10 to 55°C.

Magnecraft Number	Input VDC	Timing Range (Slow Operate)	External Resistance	Net Ea. 1-9
W67CPSOX-1	12	.1–30 sec.	Internal Potentiometer Adjusted	$21.98
W67CPSOX-2	24	.1–30 sec.		21.98
W67CPSOX-3	12	1–240 sec.		23.78
W67CPSOX-4	24	1–240 sec.		23.78
W67CPSOX-5	12	.1–30 sec.	External Resistor Needed	18.07
W67CPSOX-6	24	.1–30 sec.		17.71
W67CPSOX-7	12	1–240 sec.		19.91
W67CPSOX-8	24	1–240 sec.		19.91

TIME DELAY AND MERCURY DISPLACEMENT POWER RELAYS

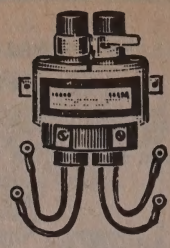
MERCURY DISPLACEMENT POWER RELAYS

STEEL TUBE MERCURY DISPLACEMENT RELAYS

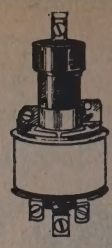
Hi-power 35 and 60 amp SPST, DPST, 3PST mercury relay with steel tube design. Hermetically sealed and pressurized with hydrogen for rapid arc suppression. Contact arrangement—mercury to metal; contact resistance—.002 ohm; temperature range— −35° to 75°C. UL Listed.

Magnecraft Number	Contacts 35 Amps	Coil Volts 50/60 Hz	Net Ea. 1–9
WM35A-120A	SPST-NO	120 VAC	$13.35
WM35B-120A	SPST-NC	120 VAC	14.39
WM35A-240A	SPST-NO	240 VAC	13.35
WM35AA-120A	DPST-NO	120 VAC	23.76
WM35AAA-120A	3PST-NO	120 VAC	35.27

Magnecraft Number	Contacts 60 Amps	Coil Volts 50/60 Hz	Net Ea. 1–24
WM60A-120A	SPST-NO	120	$21.42
WM60B-120A	SPST-NC	120	22.49
WM60A-240A	SPST-NO	240	21.42
WM60AA-120A	DPST-NO	120	38.54
WM60AAA-120A	3PST-NO	120	57.66



ASX-11



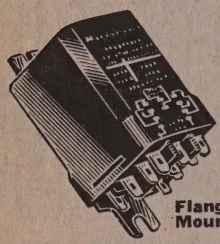
M35A

CLASS ASX 20 AMP MINIATURE ARMORED POWER RELAYS

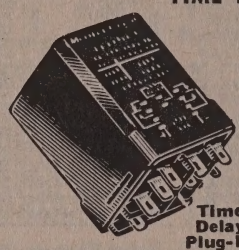
Hi-power 20 amp mercury-to-mercury relay equipped with armored, impact-protected encapsulated tubes. Size, 3″ w. x 2⅛″ d. x 3½″ h. max.

Magnecraft Number	Contacts	Coil Volts* 50/60 Hz	Net Each, Lots of 1-9	10-49	50 Up*
WASX-1	SPST-NO	120 VAC	$15.91	$13.92	$12.53
WASX-1	SPST-NO	240 VAC	16.69	14.60	13.14
WASX-2	SPST-NC	120 VAC	16.43	14.38	12.94
WASX-11	DPST-NO	120 VAC	29.35	25.68	23.11

TIME DELAY RELAYS



Flange Mount



Time Delay Plug-In

NEW CLASS 388 LOW COST SOLID STATE HYBRID, TIME DELAY RELAYS

Plug-in or flange-mount models. Immune to false operation. Repeatability, ±3% under fixed conditions, 25° C, 120 VAC; ±10% over voltage and temperature extremes. Contacts, 10 amp DPDT at 28 VDC or 115 VAC, res. Input voltage for Model Nos. W388ACPSOX-1, and -2, and W388ACQSOX-1, and -2, 120 VAC; W388CPSOX-1, and -2, and W388CQSOX-1, and -2, 24 VDC. Steady state current, 20 mA at 120 VAC, 60 mA at 24 VDC. Transient and polarity protection to twice input voltage for 8 ms. Reset and recycle time, less than 100 ms. Tough, crackproof dust cover. Size, Flange-Mount, 1 17/32″ w. x 1 13/32″ d. x 2 29/32″ h.; Plug-In, 1 17/32″ w. x 1 13/32″ d. x 1 29/32″ h., overall.

PLUG-IN MODELS

Magnecraft Number	Timing Range, Secs	External Resistor* Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99*
W388ACPSOX-1	1–10	200K	$16.32	$15.50	$14.69	$13.05
W388ACPSOX-2	1–120	2.4 megs	17.76	16.87	15.97	14.20
W388CPSOX-1	1–10	160K	18.80	17.86	16.93	15.04
W388CPSOX-2	1–120	2 megs	20.40	19.38	18.35	16.32

FLANGE-MOUNT MODELS

W388ACQSOX-1	1–10	200K	$16.32	$15.50	$14.69	$13.05
W388ACQSOX-2	1–120	2.4 megs	17.76	16.87	15.97	14.20
W388CQSOX-1	1–10	160K	18.80	17.86	16.93	15.04
W388CQSOX-2	1–120	2 megs	20.40	19.38	18.35	16.32

*Resistor not furnished.

CLASS 214CP COMPACT, PLUG-IN SOLID STATE (HYBRID) TIME DELAY RELAY

Fully adjustable time delay offers ±5% repeatability in a size equivalent to general purpose types. Time delay on operate. Contacts DPDT, rated 5 amps at 32 VDC or 115 VAC resistive. Enclosed in molded dust cover with 8-pin octal plug. **Size:** 2½″ x 1⅜″ x 1⅜″. Weight, 3 oz.

Magnecraft Number	Coil V*	Timing Secs	Net Each, Lots of 1-9	10-24	25-49	50-99*
W214ACPSOX-1	120	.300–30	$26.09	$24.79	$23.49	$20.87
W214ACPSOX-2	AC	3–240	26.09	24.79	23.49	20.87
W214CPSOX-3	24	.300–30	26.09	24.79	23.49	20.87
W214CPSOX-4	DC	3–240	26.09	24.79	23.49	20.87

***COIL DATA**

Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

Class 214CP

Class 502PCSO (1 Form A) Class 503PCSO (1 Form C)

Class 502PCSR (1 Form A) Class 503PCSR (1 Form C)

CLASS 502 AND 503 SLOW OPERATE PC TIME DELAYS

Hybrid circuitry combines monolythic silicon structure for timing function and dry reed relay for isolated circuit switching. Encapsulated, fully-protected construction has low profile for printed circuit mounting. Polarity protection is standard. **Repeatability:** ±5% accurate. **Size:** 2¼″ x 1¼″ x ¾″. Wt., approx. 2 oz.

Class 502PCSO: SPST-NO (Form A) contacts rated 1 amp at 15 VA or 250 VAC max. resistive.

Magnecraft Number	Coil V*	Timing Range	Net Each, Lots of 1-9	10-24	25-49	50-99*
W502PCSOX-2	12	100 msec	$21.96	$20.85	$19.76	$17.57
W502PCSOX-3	24	to 100 sec†	21.96	20.85	19.76	17.57
W502PCSOX-5	12	3 sec	24.66	23.43	22.20	19.74
W502PCSOX-6	24	to 5 min.‡	24.66	23.43	22.20	19.74

Class 503PCSO: SPDT (Form C) contacts rated 0.5 amp at 10 VA or 250 VAC max. resistive.

W503PCSOX-2	12	100 msec	$24.10	$22.90	$21.68	$19.28
W503PCSOX-3	24	to 100 sec†	24.10	22.90	21.68	19.28
W503PCSOX-5	12	3 sec	25.83	24.54	23.25	20.66
W503PCSOX-6	24	to 5 min.‡	25.83	24.54	23.25	20.66

External adjustment: †50K ohms/sec; ‡10K ohms/sec.

CLASS 502 AND 503 SLOW RELEASE PC TIME DELAYS

Makes use of hybrid circuitry: Monolythic silicon structure for timing function; dry reed relay performs isolated circuit switching with ±2% repeatability. Low profile design for printed circuit mounting is fully protected by encapsulation. **Size:** 2¼″ x 1¼″ x ¾″. Wt., approx. 2 oz.

Class 502PCSR: SPST-NO (Form A) contacts rated 1 amp at 15 VA or 250 VAC max. resistive.

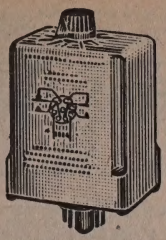
Magnecraft Number	Coil V*	Timing Range	Net Each, Lots of 1-9	10-24	25-49	50-99*
W502PCSRX-2	12	200 msec	$30.94	$29.40	$27.85	$24.76
W502PCSRX-3	24	to 100 sec†	30.94	29.40	27.85	24.76
W502PCSRX-5	12	1 sec	34.55	32.81	31.09	27.63
W502PCSRX-6	24	to 5 min.‡	34.55	32.81	31.09	27.63

Class 503PCSR: SPDT (Form C) contacts rated 0.5 amp at 10 VA or 250 VAC resistive.

W503PCSRX-2	12	200 msec	$33.10	$31.45	$29.79	$26.48
W503PCSRX-3	24	to 100 sec†	33.10	31.45	29.79	26.48
W503PCSRX-5	12	1 sec	36.70	34.87	33.03	29.36
W503PCSRX-6	24	to 5 min.‡	36.70	34.87	33.03	29.36

External adjustment: †50K ohms/sec; ‡10K ohms/sec.

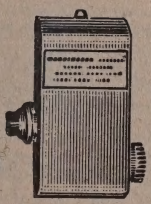
★LARGER QUANTITY PRICES ON REQUEST


211CP, 213CP

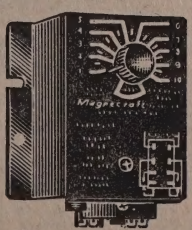
211M

112

112M


113C

218 Screw Terminals


218 Solder Terminals

*COIL DATA: Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

CLASS 211CP SOLID STATE PLUG-IN TIME DELAY RELAYS

Combines solid state circuitry for timing function, with Class 88 electromechanical relay for DPDT 10-amp output switching. Nylon dust cover, plug-in mounting. DC models are reverse polarity protected. Transient protection for twice the nominal input voltage, for a period not to exceed 8 msec. **Contacts:** DPDT, rated 10 amps. **Temperature Range:** Operate, −10° to +55° C; storage, −55° to +85° C. **Timing Repeatability:** ±5% of setting at nominal voltage at 25° C. **Size:** 1¾″ x 2⅜″ x 2⅞″ h. (not including knob). **Plug:** Operate types, 8-pin; release types, 11-pin.

For Delay On Operate				For Delay On Release			
Magnecraft Number	Coil V*	Delay Secs	Net Ea., Lots	Magnecraft Number	Coil V*	Delay Secs	Net Ea., Lots
W211ACPSOX-18		.2–1	1–9	W211ACPSRX-14		.2–1	1–9 . . . .
W211ACPSOX-5	120	1–10	$22.85	W211ACPSRX-5	120	1–10	$27.97
W211ACPSOX-7	AC	1–180	10–24 . .	W211ACPSRX-7	AC	1–180	10–24 . .
W211ACPSOX-8		2–300	$21.70	W211ACPSRX-8		2–300	$26.58
W211CPSOX-10		.2–1	25–49 . . .	W211CPSRX-9		.2–1	25–49 . . .
W211CPSOX-1	24	1–10	$22.85	W211CPSRX-1	24	1–10	$27.97
W211CPSOX-3	DC	1–180	50–99* . .	W211CPSRX-3	DC	1–180	50–99* . .
W211CPSOX-4		2–300	$21.70	W211CPSRX-4		2–300	$26.58

CLASS 213CP PRECISION SOLID STATE TIME DELAY RELAYS

Immune to false operation. Adjustable to 300 seconds. ±1% repeatability. Input voltage, 120 VAC. 10 amp DPDT output switching. Calibrated dial. Fast reset time. Transient protection against 1000 volts. Available for AC operation. Operate delay; release delay. Molded plastic enclosure for plug-in. Size, 1¾″ x 2⅜″ x 2⅞″ h.

Magnecraft Number	Time Delay, Secs	Mode of Operation	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249*
W213ACPSOX-7	1–10	Slow Operate	$49.24	$46.78	$44.32	$39.39	$36.93
W213ACPSOX-9	1–180	Slow Operate	49.24	46.78	44.32	39.39	36.93
W213ACPSOX-10	2–300	Slow Operate	49.24	46.78	44.32	39.39	36.93
W213ACPSRX-4	1–10	Slow Release	58.89	55.95	53.00	47.11	44.17
W213ACPSRX-6	1–180	Slow Release	58.89	55.95	53.00	47.11	44.17
W213ACPSRX-7	2–300	Slow Release	58.89	55.95	53.00	47.11	44.17

CLASS 211M SOLID STATE TIME DELAY RELAYS, DPDT, 10 AMP

AC, DC operation. Screw type terminals. Transient and polarity protection. 2% repeatability. Contact rated, 10 amps at 28 VDC or 115 VAC, DPDT. Four adjustable time ranges. Operate or release delay. Reset time, 100 ms average. Size, 4½″ x 1½″ x 4½″.

TIME DELAY ON OPERATE

Magnecraft No. 120 VAC	Magnecraft No. 24 VDC	Timing, Secs	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249*
W211MASOX-1	W211MSOX-1	.2–1	$32.01	$30.41	$28.82	$25.62	$24.01
W211MASOX-2	W211MSOX-2	1.0–10	32.01	30.41	28.82	25.62	24.01
W211MASOX-3	W211MSOX-3	1.0–180	32.01	30.41	28.82	25.62	24.01
W211MASOX-4	W211MSOX-4	2.0–300	32.01	30.41	28.82	25.62	24.01

TIME DELAY ON RELEASE

W211MASRX-1	W211MSRX-1	.2–1	$37.50	$35.63	$33.76	$30.00	$28.13
W211MASRX-2	W211MSRX-2	1.0–10	37.50	35.63	33.76	30.00	28.13
W211MASRX-3	W211MSRX-3	1.0–180	37.50	35.63	33.76	30.00	28.13
W211MASRX-4	W211MSRX-4	2.0–300	37.50	35.63	33.76	30.00	28.13

CLASS 112 AIR DASHPOT TIME DELAY RELAYS

Electrically actuated, with rugged enclosure and few moving parts. Solenoid assembly added to air dashpot/snap switch combination initiates time switching function. Mechanical timing function unaffected by voltage variations. Time delay adjustable, 1–150 seconds, with knob or capped Allen screw. Time repeat accuracy, ±10%. Release delay without standby power. DPDT contacts rated 10 amps. Enclosure has grommet for feed-thru wires (internally wired by user to .187″ quick-connect terminals). Mounting by two 3/16″ dia. holes on 3″ centers. Size, 1¾″ x 3 3/16″ x 4 3/16″. Weight, 20 oz.

Class 112M (W112MASOX-1 to W112MASRX-2): Same as above, but in molded, high-impact plastic enclosure with built-in screw type terminals. Flange mounting, with six 3/16″ holes spaced ½″ on 4⅛″ centers. Factory wired. Size, 1½″ x 4½″ x 4½″. Wt., 14 oz.

Magnecraft Number	"Slow" Function	Coil* Volts	Coil* Ohms	Adjustment	Net Each, Lots of 1-9	10-24	25-49	50-99*
W112ACSOX-4	Operate	120 VAC	.....	Knob	$49.17	$46.71	$44.26	$39.33
W112CSOX-3	Operate	24 VDC	80	Knob	49.17	46.71	44.26	39.33
W112ACSRX-4	Release	120 VAC	.....	Knob	49.17	46.71	44.26	39.33
W112CSRX-3	Release	24 VDC	80	Knob	49.17	46.71	44.26	39.33
W112MASOX-1	Operate	120 VAC	.....	Knob	54.88	52.14	49.39	43.91
W112MASOX-2	Operate	120 VAC	.....	Screw	54.88	52.14	49.39	43.91
W112MSOX-2	Operate	24 VDC	80	Knob	54.88	52.14	49.39	43.91
W112MSOX-3	Operate	24 VDC	80	Screw	54.88	52.14	49.39	43.91
W112MASRX-1	Release	120 VAC	.....	Knob	54.88	52.14	49.39	43.91
W112MASRX-2	Release	120 VAC	.....	Screw	54.88	52.14	49.39	43.91
W112MSRX-1	Release	24 VDC	80	Knob	54.88	52.14	49.39	43.91
W112MSRX-2	Release	24 VDC	80	Screw	54.88	52.14	49.39	43.91

CLASS 113C MANUALLY ACTIVATED TIME DELAY SWITCHES

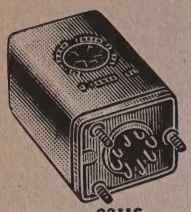
Consists of Class 113 air dashpot time delay switch built with a non-aging, low-friction graphite, precision ground tempered glass air dashpot timer. Pushing the button instantly transfers the SPDT switch; releasing initiates the timing cycle. At the end of timing period, snap contacts are instantly reset. Knob-adjustable timing range, 1–180 seconds. Metal parts are corrosion-resistant. SPDT contacts rated 10 amps up to 32 VDC or 250 VAC resistive. Size, 2 1/16″ x 1 5/32″ x 3 3/8″. Mounts in single panel hole. Wt., 8 oz

Magnecraft Number	Contact	Timing Range	Button Dia.	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249*
W113CX-1	SPDT	1–180 seconds	½″	$36.57	$34.74	$32.92	$29.26	$27.43

CLASS 218 SOLID STATE PANEL MOUNTED TIME DELAY RELAYS

Calibrated dial. Screw terminal, or solder terminal types. Contacts, 10 amp SPDT, screw terminal type; 10 amp DPDT, solder terminal type. Input, 120 VAC. ±2% repeatability under fixed conditions; ±10% under voltage and temperature extremes. Reset, recycle time, 100 ms. Three timing ranges. Time delay on operate. Size, 3 5/16″ w. x 2½″ d. x 3 13/16″ h.

Screw Terminals—10 A—SPDT Magnecraft Number	Net Each, Lots of 1-9	10-24	25-49*	Timing Delay, Secs	Solder Terminals—10A DPDT Magnecraft Number	Net Each, Lots of 1-9	10-24	25-49*
W218ACSOSX-2	$22.61	$21.47	$20.34	1–10	W218ACSOX-9	$19.65	$18.67	$17.68
W218ACSOSX-4	22.61	21.47	20.34	1–180	W218ACSOX-10	19.65	18.67	17.68
W218ACSOSX-5	22.61	21.47	20.34	2–300	W218ACSOX-11	19.65	18.67	17.68



22HS

33HS

CLASS 22HS HERMETICALLY-SEALED 5-AMP AC-DC RELAYS

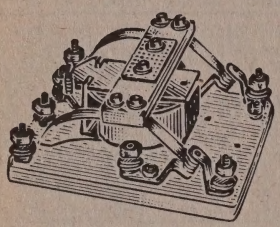
Class 22 relay in 40-158 hermetically-sealed enclosure with 14-pin, glass insulated solder terminal header. Silver alloy contacts rated 5 amps. Three 6-32 threaded mtg. studs on $^{15}/_{16}$" x $1^{3}/_{16}$" centers. Size, $1^{7}/_{16}$" x $1^{5}/_{8}$" x $2^{11}/_{16}$" h. Weight, 7 oz.

Magnecraft Number	Contacts	Volts or Current*	Resis., Ohms*	Nom. Power	Net Each, Lots of 1-9	10-24	25-49	50-99*
W22AHSX-32	4PDT	115 VAC	.....	5 VA	$22.90	$20.60	$19.45	$18.32
W22HSX-144	4PDT	6 VDC	20	2.0 W	22.49	20.24	19.12	17.99
W22HSX-145	4PDT	12 VDC	80	2.0 W	22.49	20.24	19.12	17.99
W22HSX-146	4PDT	24 VDC	375	1.5 W	22.56	20.30	19.18	18.08

CLASS 33HS HERMETICALLY-SEALED 5-AMP DC-OPERATED RELAYS

Class 33 miniature relay hermetically sealed in 40-157 enclosure; high compression glass insulated solder terminal header: 8-pin for DPDT types; 14-pin, 4PDT types. Silver alloy contacts rated 5 amps. Three 4-40 (NC-2) threaded mtg. studs on ½" x 1" centers. Size, $^{31}/_{32}$" d. x $1^{1}/_{32}$" lg. x $1^{41}/_{64}$" h. Weight, 3 oz.

W33HSX-177	DPDT	6 VDC	17	2.0 W	$17.47	$15.72	$14.86	$13.99
W33HSX-178	DPDT	12 VDC	75	2.0 W	17.47	15.72	14.86	13.99
W33HSX-179	DPDT	24 VDC	280	2.0 W	17.54	15.79	14.90	14.04
W33HSX-180	DPDT	110 VDC	6500	2.0 W	18.35	16.51	15.60	14.68
W33HSX-181	4PDT	6 VDC	17	2.0 W	22.02	19.82	18.72	17.62
W33HSX-182	4PDT	12 VDC	75	2.0 W	22.02	19.82	18.72	17.62
W33HSX-183	4PDT	24 VDC	280	2.0 W	22.10	19.90	18.79	17.68
W33HSX-184	4PDT	110 VDC	6500	2.0 W	22.97	20.68	19.54	18.37

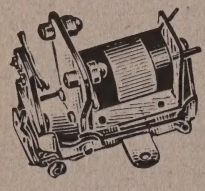


Class 155

CLASS 155 RF RELAYS 15 AMP DPDT—1 KILOWATT

Class 155 relay is designed for heavy duty radio frequency transmitter antenna changeover and high voltage switching applications. RF relay is for fixed-station usage with conservative rating of 1 kW. Ideal for switching industrial loads because of ¼" dia. silver contacts and wide contact gap. Built for easy connection to antenna lines. Insulated with ceramic steatite. Excellent wiping action of contacts assures flow of most minute currents for receiving positions. **Mounting Data:** 4 holes .157" dia.; clearance for 6-32 screws. **Size:** $1^{21}/_{32}$" x $2^{25}/_{32}$" x $3^{13}/_{32}$".

Magnecraft Number	Contacts	Coil Volts	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W155AX-1	DPDT	115 VAC	480	$26.16	$24.85	$23.54	$20.93	$18.31

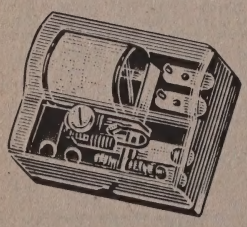


Class 158

CLASS 158 HIGH VOLTAGE RELAYS (UP TO 5000 VOLTS)

Class 158 is developed especially for making or breaking high voltage circuits of low current capacities. System of levers operating the armature provides the necessary wide gap for high voltage switching, but keeps the size of relay to a minimum. Contact assembly is mounted on ceramic to insure high insulation plus strength and low energy loss. Specially designed contact assembly provides for minimum bounce. Silver cadmium oxide contacts (¼" dia.) break up to 5000 volts rms at 200 mA. **Size:** $1^{23}/_{32}$" x $3^{1}/_{16}$" x $2^{7}/_{32}$".

Magnecraft Number	200 mA Contacts	Coil Volts	Coil Ohms	Net Each, Lots of 1-24	25-49	50-74	75-99	100-249*
W158HVX-1	SPDT DB-DM	24 VDC	120	$27.58	$26.21	$24.83	$19.31	$17.92
W158HVX-2	SPDT DB-DM	110 VDC	3000	28.58	27.14	25.73	20.00	18.57



Class 62

CLASS 62 ULTRA-SENSITIVE RELAYS—1 AMP SPDT

Ultra-sensitive, durable, dustite and fully adjustable relays for use in any DC circuit restricted to a few thousandths of a watt power consumption. Counter-balanced armature design permits excellent operation in any position. Transparent, molded plastic cover guards against dust or dirt reaching the contacts or other working parts—yet allows immediate visual inspection. Sturdy molded Bakelite® base has both screw and solder terminal connectors and convenient means of mounting is provided. Sensitivity adjusted to 5 milliwatts. Field adjustments are easily made by using the vernier screws. Silver contacts and spring tension can be accurately and permanently set, yet easily changed. **Contacts:** 1 amp resistive at 115 VAC or 28 VDC. **Mounting Data:** 2 holes $^{9}/_{64}$" dia. **Size:** $2^{1}/_{16}$" x $1^{19}/_{16}$" x $2^{5}/_{8}$".

®Reg. Bakelite trademark.

Magnecraft Number	Coil mA	Coil Ohms	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
W62SCX-1	1000	.005	$13.09	$12.43	$11.78	$ 9.16	$ 8.50
W62SCX-2	2.25	1000	13.62	12.94	12.25	9.53	8.84
W62SCX-3	1.80	1600	13.62	12.94	12.25	9.53	8.84
W62SCX-4	1.50	2200	13.62	12.94	12.25	9.53	8.84
W62SCX-5	1.20	3500	13.85	13.16	12.46	9.69	9.00
W62SCX-6	0.95	5500	14.41	13.70	12.97	10.10	9.37
W62SCX-7	0.75	8700	15.50	14.73	13.95	10.85	10.08
W62SCX-8	0.70	10000	15.50	14.73	13.95	10.85	10.08
W62SCX-9	0.60	14000	16.64	15.81	14.98	11.65	10.82
W62SCX-10	0.50	20000	18.29	17.38	16.47	12.80	11.90
W62SCX-11	0.40	30000	18.29	17.38	16.47	12.80	11.90
W62SCX-12	0.35	40000	19.57	18.58	17.61	13.70	12.72

***COIL DATA**

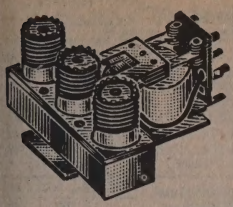
Voltage specified relays pull in at 80% of nominal or less for DC relays and 85% of nominal or less for AC relays, at 25° C. Resistance values ±10% at 25° C.

★LARGER QUANTITY PRICES ON REQUEST

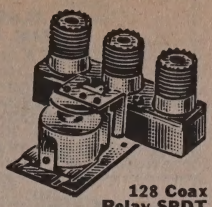
★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

COAXIAL, HYBRID POWER SOLID STATE AND REED RELAYS

CLASS 120 AND CLASS 128 COAXIAL RELAYS FOR RF SWITCHING



128 SPDT with DPDT Auxiliary Contacts



128 Coax Relay SPDT

Class 120

Compact relays combine a heavy duty coaxial relay with Class 88 relay structure. Precision-built, hinge-pin armature bearings assure consistent pull-in power with maximum reliability over long life. Coaxial contact structure is enclosed in a heavy duty, precision machined brass cavity with removable plug for convenient inspection of contacts. SPDT RF switching contacts are silver alloy, gold flashed; rated 100 watts RF. VSWR, 1.25:1 maximum, 0–500 MHz. Matches 50-ohm cable using standard UHF connectors. Operate time, 25 msec maximum. Release time, 25 msec maximum. Size, 2⅝″ x 2⅞″ x 1⅞″.

STANDARD CLASS 128 SPDT COAXIAL RELAYS

Magnecraft Number	Coil Data*		Net Each, Lots of				
	Volts	Ohms	1-9	10-24	25-49	50-99	100-249*
W128AX-7	115 VAC	.....	$23.52	$21.16	$20.00	$18.81	$17.63
W128X-9	12 VDC	100	23.09	20.78	19.62	18.47	17.31
W128X-10	24 VDC	400	23.18	20.86	19.70	18.54	17.38

CLASS 128 SPDT RELAYS WITH DPDT AUXILIARY CONTACTS

W128AX-11	115 VAC	.....	$26.54	$23.88	$22.56	$21.23	$19.91
W128X-14	12 VDC	100	25.49	22.94	21.67	20.39	19.12
W128X-15	24 VDC	400	25.56	23.01	21.73	20.45	19.17

CLASS 120 SPACE SAVING SPDT COAXIAL RELAY

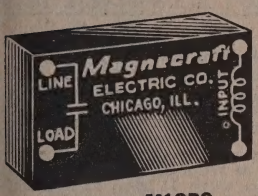
Standard coaxial cavity integrally assembled to a Class 33 relay basic structure. Impedance matched to 50 ohm cable. Size, 1 47/64″ x 4 3/64″ d. x 1 13/16″ h. Cables are RG58A/U 12″ long, unterminated.

W120X-14	12 VDC	100	$11.22	$10.10	$9.53	$8.98	$8.42

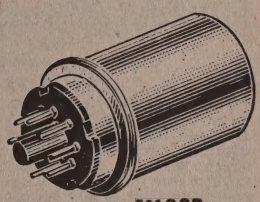
***COIL DATA:** Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal or less for AC relays at 25° C. Resistance shown is ±10% at 25° C.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

CLASS 501Q SOLID STATE HYBRID POWER RELAYS



501QPC



501QCP

Reed triggered triac assembly features the long life and isolation of a reed relay to trigger a triac capable of switching the high inrush currents of such devices as lamps, motors, capacitors and heaters. Available in printed circuit (Series 501QPC) or enclosed plug-in (Series 501QCP) versions. **Life:** Approx. 25 million operations. **Contacts:** SPST-NO (1 Form A). **Load Rating:** 3 amps (6 amps for series 501QCP) at 120 VAC rms or 200 VDC peak at 25° C. **Surge Rating:** 100 amps for 0.016 seconds. **Operate Time:** .003 seconds. **Size:** Series 501QPC, 2¼″ w. x ¾″ d. x 1¼″ h. (pins, .04″ dia. x ⅛″ h.); series 501QCP, 1 21/32″ overall dia. x 2 11/32″ height less pins. Weight, 2 oz. (3 oz. for series 501QCP).

PRINTED CIRCUIT TYPE

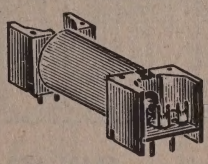
Magnecraft Number	Input			VAC Switching Capability
	Volts	Ohms	Watts	
W501QPCX-1	5 VDC	1000	40 mW	3 Amps at 120
W501QPCX-7	24 VDC	1500	400 mW	3 Amps at 120
W501QPCX-11	5 VDC	1000	40 mW	3 Amps at 240
W501QPCX-17	24 VDC	1500	400 mW	3 Amps at 240
ENCLOSED PLUG-IN TYPE				
W501QCPX-1	5 VDC	1000	40 mW	6 Amps at 120
W501QCPX-5	24 VDC	1500	400 mW	6 Amps at 120
W501QCPX-7	5 VDC	1000	40 mW	6 Amps at 240
W501QCPX-10	24 VDC	1500	400 mW	6 Amps at 240

PRICE SCHEDULE

Magnecraft Number	Net Each, Lots of					
	1-9	10-24	25-49	50-99	200-249	250-499
W501QPCX-1	$13.74	$13.06	$12.37	$11.00	$10.31	$ 9.63
W501QPCX-7	13.74	13.06	12.37	11.00	10.31	9.63
W501QPCX-11	14.36	13.65	12.94	11.49	10.77	10.06
W501QPCX-17	14.36	13.65	12.94	11.49	10.77	10.06
W501QCPX-1	18.39	17.47	16.56	14.71	13.79	12.87
W501QCPX-5	18.39	17.47	16.56	14.71	13.79	12.87
W501QCPX-7	19.21	18.25	17.29	15.37	14.40	13.44
W501QCPX-10	19.21	18.25	17.29	15.37	14.40	13.44

CLASS 101MPC AND CLASS 102MPC LOW-COST REED RELAYS

Class 101MPC



Class 102MPC

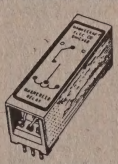
Low-cost reed relays provide optimum reliability, fast operation and low profile printed circuit mounting. One-piece, rugged reed support terminal pin is rigidly fastened to terminal board and soldered stress-free to the switch leads; assure performance and adjustment will not be affected by external stresses. **Miniature Class 101MPC:** SPST-NO (1 Form A) contacts rated 10 VA at 0.5 amp or 200 VDC max. non-inductive. Life, 5 million cycles at full load; 20 million at ½ load. Nominal power, 500 mW. Size, 1⅛″ x ⅜″ x ⅜″. Weight, approx. 1 oz.
Standard Class 102MPC: SPST-NO (1 Form A) contacts rated 15 VA at 1.0 amp or 250 VDC max. non-inductive. Life, 20 million cycles at full load; 100 million at ½ load. Nominal Power, 500 mW. Size, 2⅝″ x ⅝″ x 2 3/32″. Weight, approx. 1 oz.

Magnecraft Number	Contacts & Size	Coil Data*		Avg. msec		Net Ea., 1-24*
		Volts	Ohms	Oper.	Release	
W101MPCX-122	SPST-NO	6	70	1	0.5	$2.92
W101MPCX-123	(1 Form A)	12	300	1	0.5	2.92
W101MPCX-124	Miniature	24	1100	1	0.5	2.92
W102MPCX-145	SPST-NO	6	70	3	0.5	3.04
W102MPCX-146	(1 Form A)	12	250	3	0.5	3.04
W102MPCX-147	Standard	24	1000	3	0.5	3.04

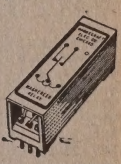
IC COMPATIBLE REED RELAYS

Class 101M (1 Form A)

Class 104M (1 Form C)



Class 101MPC (1 Form A)



Class 104MPC (1 Form C)

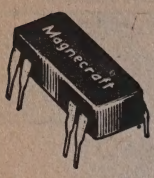
Provide the small size, low profile, printed circuit mounting and low operating power required for IC compatibility, typically 50 mW. Two package configurations available: Inline axial leads or PC mounting. **Life:** 5 million operations at rated load; longer at reduced load. **Size:** Inline axial-lead units, 1″ x 7/16″ x ½″. Printed circuit mounting types, 1⅛″ x ⅜″ x 1 3/32″.
Class 101M (Inline Axial Leads) **and 101MPC** (PC Mtg.)**:** SPST-NO (1 Form A) contacts rated 10 VA at 0.5 amp or 100 VDC max. resistive.
Class 104M (Inline Axial Leads) **and 104MPC** (PC Mtg.)**:** SPDT (1 Form C) contacts rated 3 VA at 0.25 amp or 28 VAC max. resistive.

Magnecraft Number	Contacts	Nom. Power mW	Coil Data*		Net Ea. 1-24*
			Volts	Ohms	
W101MX-41	SPST-NO	50	3	250	$2.95
W101MX-35	(1 Form A)	50	5	500	2.95
W101MPCX-104		50	5	450	4.55
W102MX-27	SPST-NO	50	5	450	3.10
W102PCX-63		50	5	500	6.09
W102MPCX-190		50	5	450	4.30
W103MX-21	SPDT	50	5	500	5.39
W103PCX-77		50	5	500	8.91
W103MPCX-124		50	5	450	7.25
W104MX-10	SPDT	50	3	250	6.84
W104MX-9	(1 Form C)	50	5	500	6.84
W104MPCX-46		50	5	300	7.91

***COIL DATA:** Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal or less for AC relays at 25° C. Resistance shown is ±10% at 25° C.

★QUANTITY DISCOUNTS: Lots: 25–49, −10%; 50–74, −15%; 75–99, −20%; 100–499, −30%; write for larger quantity discounts.

DUAL-INLINE-PACKAGED 8-PIN REED RELAYS



Epoxy-molded DIP (dual-inline package) 8-pin reed relays offer high quality at low cost, compatible with the standard packaging developed for integrated circuitry. Unique design provides the optimum in automated insertion and other economical installation techniques associated with printed circuit applications. Ideal for use in circuits where high density packaging is essential. The 5 VDC IC-compatible versions will operate directly from TTL or DTL circuits; also available in standard coil voltages of 6, 12 or 24 VDC. Class 107 and 118 relays are available with or without an internal clamping diode. **Size:** W107, .750″ x .187″ x .250″; W117 and W118, .750″ x .210″ x .260″; W171, W172 and W173, .750″ x .275″ x .260″.

CLASS 107 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .187″)

Contacts rated 3 VA at .110 amp max. or 28 VDC resistive, max. Operate time, 200 μsec, typical. Dielectric strength, 200 VDC minimum between contacts. Contact resistance, 200 milliohms, average. Life, 10 million operations typical; longer at reduced loads.

Magnecraft Number	Coil Data: Max. Pick-up Voltage	V	Ohms*	Typical Power Required	Net Ea., Lots of*: 1-24	25-49	50-74
W107DIP-1	3.8 VDC	5	500	50 mW	$4.41	$3.97	$3.75
W107DIP-2	4.5 VDC	6	500	75 mW	3.86	3.47	3.28
W107DIP-3	9.0 VDC	12	500	300 mW	3.86	3.47	3.28
W107DIP-4	18.0 VDC	24	1200	500 mW	4.14	3.73	3.52
W107DIP-5†	3.8 VDC	5	500	50 mW	5.19	4.67	4.41
W107DIP-6†	4.5 VDC	6	500	75 mW	4.63	4.17	3.94
W107DIP-7†	9.0 VDC	12	500	300 mW	4.63	4.17	3.94
W107DIP-8†	18.0 VDC	24	1200	500 mW	4.90	4.41	4.17

CLASS 117 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .210″)

Contacts rated 10 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 μsec, typical. Dielectric strength, 200 VDC minimum between contacts. Contact resistance, 150 milliohms, average. Life, 25 million operations, typical, longer at reduced loads. Higher rating up to .5 amp at reduced life.

W117DIP-1	3.8 VDC	5	200	125 mW	$3.92	$3.53	$3.33
W117DIP-2	4.5 VDC	6	200	180 mW	3.56	3.20	3.03
W117DIP-3	9.0 VDC	12	500	300 mW	3.56	3.20	3.03
W117DIP-4	18.0 VDC	24	1200	500 mW	3.78	3.40	3.21
W117DIP-5†	3.8 VDC	5	200	125 mW	4.75	4.28	4.04
W117DIP-6†	4.5 VDC	6	200	180 mW	4.33	3.90	3.68
W117DIP-7†	9.0 VDC	12	500	300 mW	4.33	3.90	3.68
W117DIP-8†	18.0 VDC	24	1200	500 mW	4.60	4.14	3.91

CLASS 171 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .275″)

Contacts rated at 10 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 μsec, typical. Contact bounce, less than 200 μsec, average. Dielectric strength, 250 VDC minimum, across open contacts; 750 VAC, coil to contact. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{11} ohms, minimum. Life, 25 million operations, typical; longer at reduced loads. Mechanical characteristics, shock, 100 g's at ½ sine wave, 11 μsec vibration, 100 g's, 10 to 2000 Hz. Temperature range, −55° C to +85° C.

W171DIP-1	3.8 VDC	5	200	125 mW	$3.09	$2.78	$2.63
W171DIP-2	3.8 VDC	5	500	50 mW	3.51	3.16	2.98
W171DIP-3	4.5 VDC	6	500	75 mW	3.09	2.78	2.63
W171DIP-4	9.0 VDC	12	500	290 mW	3.09	2.78	2.63
W171DIP-5	18.0 VDC	24	2200	270 mW	3.48	3.13	2.96
W171DIP-6†	3.8 VDC	5	200	125 mW	3.74	3.37	3.18
W171DIP-7†	3.8 VDC	5	500	50 mW	4.12	3.71	3.50
W171DIP-8†	4.5 VDC	6	500	75 mW	3.74	3.37	3.18
W171DIP-9†	9.0 VDC	12	500	290 mW	3.74	3.37	3.18
W171DIP-10†	18.0 VDC	24	2200	270 mW	4.12	3.71	3.50

CLASS 174 DIP, SPST-NO, 1 FORM A
MERCURY WETTED CONTACTS

Contacts rated 25 VA or 1.0 Amp max. or 100 VDC max. resistive. Operate time, 1.5 milliseconds, average. Contact bounce, none with diode suppressed coil. Dielectric strength, 1000 VDC min. across open contacts; 750 VAC, coil to contact. Contact resistance, 100 milliohms, average. Insulation resistance, 10^{11} ohms. Life, 40 million operations, typical, longer at reduced loads. Temperature range, −38° C to +85° C.

W174DIP-1	3.8 VDC	5	55	500 mW	$9.33	$8.40	$7.93
W174DIP-2	4.5 VDC	6	55	650 mW	8.17	7.35	6.94
W174DIP-3	9.0 VDC	12	300	500 mW	8.17	7.35	6.94
W174DIP-4	18.0 VDC	24	1100	500 mW	9.23	8.31	7.85
W174DIP-5†	3.8 VDC	5	55	500 mW	10.03	9.03	8.53
W174DIP-6†	4.5 VDC	6	55	650 mW	9.12	8.21	7.75
W174DIP-7†	9.0 VDC	12	300	500 mW	9.12	8.21	7.75
W174DIP-8†	18.0 VDC	24	1100	500 mW	10.03	9.03	8.53

CLASS 117 DIP, DPST-NO
2 FORM A (PROFILE HEIGHT .210″)

Contacts rated 3 VA at .110 amp max. or 28 VDC resistive, max. Operate time, 200 μsec, typical. Dielectric strength, 200 VDC min. between contacts. Contact resistance, 200 milliohms, average. Life, 10 million operations, typical, longer at reduced loads.

W117DIP-9	3.8 VDC	5	200	125 mW	$6.34	$5.71	$5.39
W117DIP-10	4.5 VDC	6	200	180 mW	5.82	5.24	4.95
W117DIP-11	9.0 VDC	12	500	300 mW	5.82	5.24	4.95
W117DIP-12	18.0 VDC	24	1200	500 mW	6.17	5.55	5.24

*Resistance values ±10% measured at 25° C.
†Internal clamping diode included. Diode prevents back flow of high voltage transients.

CLASS 171 DIP, DPST-NO
2 FORM A (PROFILE HEIGHT .275″)

Contacts rated 3 VA or .110 amp max. or 28 VDC resistive, max. Operate time, 700 μsec, average. Contact bounce, less than 300 μsec, average. Dielectric strength, 200 VDC min. across open contacts; coil to contact, 750 VAC; between contact, 750 VAC. Contact resistance, 200 milliohms, average. Insulation resistance 10^{10} ohms, min. Life, 10 million operations, longer at reduced loads. Mechanical characteristics, shock 100 g's, ½ sine wave, 11 μsec. Vibration 100 g's, 10 to 200 Hz. Temp. range, −55° C to +85° C.

W171DIP-21	3.8 VDC	5	200	125 mW	$5.71	$5.14	$4.85
W171DIP-22	4.5 VDC	6	200	180 mW	5.49	4.94	4.67
W171DIP-23	9.0 VDC	12	500	290 mW	5.49	4.94	4.67
W171DIP-24	18.0 VDC	24	2200	270 mW	6.51	5.86	5.53
W171DIP-25†	3.8 VDC	5	200	125 mW	6.67	6.00	5.67
W171DIP-26†	4.5 VDC	6	200	180 mW	6.56	5.90	5.58
W171DIP-27†	9.0 VDC	12	500	290 mW	6.56	5.90	5.58
W171DIP-28†	18.0 VDC	24	2200	270 mW	6.81	6.13	5.79

CLASS 117 DIP, SPST-NC
1 FORM B (PROFILE HEIGHT .210″)

Contacts rated 3 VA at .110 amp max. or 28 VDC max. resistive. Operate time, 200 μsec, typical. Dielectric strength, 100 VDC min. between contacts. Contact resistance, 200 milliohms, average. Life, 10 million operations, longer at reduced loads. Higher ratings up to .5 amp at reduced life.

W117DIP-13	3.8 VDC	5	500	50 mW	$4.80	$4.32	$4.08

CLASS 171 DIP, SPST-NC
1 FORM B (PROFILE HEIGHT .275″)

Contacts rated 10 VA or .250 amp max. or 100 VDC max. resistive. Operate time, 400 μsec average. Contact bounce, less than 100 μsec, average. Dielectric strength, 250 VDC min. across open contacts; 750 VAC coil to contact. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{11} ohms min. Life, 10 million operations, typical, longer at reduced loads. Mechanical characteristics, shock 100 g's, ½ sine wave, 11 μsec; vibration 100 g's, 10 to 2000 Hz. Temperature range, −55° C to +85° C.

W171DIP-11	3.8 VDC	5	200	125 mW	$3.95	$3.56	$3.36
W171DIP-12	3.8 VDC	5	500	50 mW	4.17	3.75	3.54
W171DIP-13	4.5 VDC	6	500	75 mW	3.95	3.56	3.36
W171DIP-14	9.0 VDC	12	500	290 mW	3.95	3.56	3.36
W171DIP-15	18.0 VDC	24	2200	270 mW	4.14	3.73	3.52
W171DIP-16†	3.8 VDC	5	200	125 mW	4.24	3.82	3.60
W171DIP-17†	3.8 VDC	5	500	50 mW	4.46	4.01	3.79
W171DIP-18†	4.5 VDC	6	500	75 mW	4.24	3.82	3.60
W171DIP-19†	9.0 VDC	12	500	290 mW	4.24	3.82	3.60
W171DIP-20†	18.0 VDC	24	2200	270 mW	4.45	4.01	3.78

CLASS 118 DIP, SPDT
1 FORM C (PROFILE HEIGHT .210″)

Contacts rated 6 VA at .250 amp max. resistive. Operate time, 500 μsec, typical. Dielectric strength, 200 VDC, min. between contacts. Contact resistance, 150 milliohms, average. Life, 5 million typical at rated load. Longer life at reduced loads. Higher rating up to .5 amp at reduced life.

W118DIP-1	3.8 VDC	5	200	125 mW	$8.60	$7.74	$7.31
W118DIP-2	4.5 VDC	6	200	180 mW	8.05	7.25	6.84
W118DIP-3	9.0 VDC	12	500	300 mW	8.05	7.25	6.84
W118DIP-4	18.0 VDC	24	1200	500 mW	8.27	7.44	7.03
W118DIP-5†	3.8 VDC	5	200	125 mW	9.38	8.44	7.97
W118DIP-6†	4.5 VDC	6	200	180 mW	8.82	7.94	7.50
W118DIP-7†	9.0 VDC	12	500	300 mW	8.82	7.94	7.50
W118DIP-8†	18.0 VDC	24	1200	500 mW	9.09	8.18	7.73

CLASS 172 DIP, SPDT
1 FORM C (PROFILE HEIGHT .275″)

Contacts rated 8 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 μsec, average. Contact bounce, less than 200 μsec, average. Dielectric strength, 250 VDC, min. across open contacts. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{10} ohms, min. Life, 10 million operations, typical longer at reduced loads. Mechanical characteristics, shock 100 g's ½ sine wave, 11 μsec; vibration 100 g's, 10 to 200 Hz. Temperature range, −55° C to +85° C.

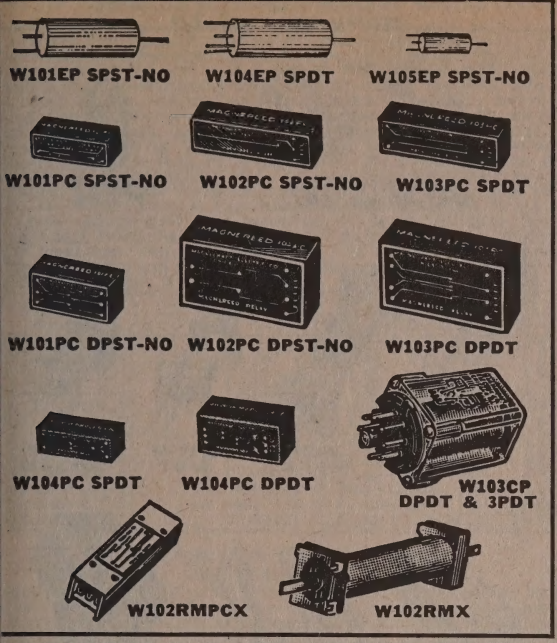
W172DIP-1	3.8 VDC	5	150	175 mW	$5.79	$5.21	$4.92
W172DIP-2	4.5 VDC	6	200	180 mW	5.48	4.93	4.66
W172DIP-3	9.0 VDC	12	500	290 mW	5.48	4.93	4.66
W172DIP-4	18.0 VDC	24	2200	270 mW	5.83	5.25	4.96
W172DIP-5†	3.8 VDC	5	150	175 mW	6.17	5.55	5.24
W172DIP-6†	4.5 VDC	6	200	180 mW	5.93	5.34	5.04
W172DIP-7†	9.0 VDC	12	500	290 mW	5.93	5.34	5.04
W172DIP-8†	18.0 VDC	24	2200	270 mW	6.29	5.66	5.35

*Resistance values ±10% measured at 25° C.
†Internal clamping diode included. Diode prevents back flow of high voltage transients.

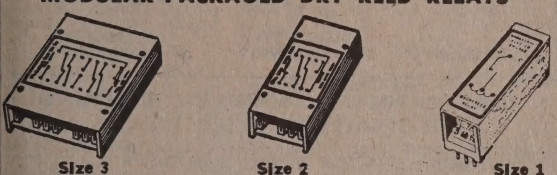
★LARGER QUANTITY DISCOUNTS

Lots of 75-99, −20%; 100-499, −30%; 500 Up, −35%. Quantities of 500 or more are bulk packed.

Magnecraft® Dry Reed Relays



MODULAR-PACKAGED DRY REED RELAYS



Modular-packaged dry reed relays ideal for printed circuit applications. Switching mechanism is hermetically sealed in glass with inert gas fill. Precious metal contacts. Unique mounting design prevents damaging stresses on reed elements. Nylon bobbin and integral mounting base mortised and rigidly riveted to epoxy resin terminal board. Snap-on metal cover provides magnetic shielding and mechanical protection. Fast acting: 2 or 3 msec, operating; 1 msec, release time. Long life: 20 million cycles at max. load; 100 million at low load. Available Form A or Form C: Form A rated 5 VA at 1 amp or 250 VAC max.; Form C rated 10 VA at ½ amp or 250 VAC max. Choice of three case sizes: **Size 1**, single Form A or C; 41/64" h. x ¾" w. x 2 5/8" lg.; requires 0.5 W DC power. **Size 2**, three Form A or two Form C; 41/64" h. x 1 5/16" w. x 2 5/8" lg.; requires .75 W DC power. **Size 3**, six Form A or four Form C; 41/64" h. x 81/64" w. x 2 5/8" lg.; requires 1.5 W DC power.

Magnecraft Number	Contacts & Size	Coil Data* mA	VDC	Ω	Av. Time, msec Operate	Release	Net Ea. 1-24*
W102MPCX-5		140	....	30	3	½	$ 3.80
W102MPCX-6		....	6	70	3	½	3.80
W102MPCX-7	SPST-NO	....	12	250	3	½	3.80
W102MPCX-8	Size 1	....	24	1000	3	½	3.80
W102MPCX-9		....	48	4000	3	½	4.00
W102MPCX-10		9	....	7000	3	½	4.80
W103MPCX-1		140	....	30	2	½	6.75
W103MPCX-2		....	6	70	2	½	6.75
W103MPCX-3	SPDT	....	12	250	2	½	6.75
W103MPCX-4	Size 1	....	24	1000	2	½	6.75
W103MPCX-5		....	48	4000	2	½	6.95
W103MPCX-6		9	....	7000	2	½	7.73
W102MPCX-48		....	6	50	3	½	6.51
W102MPCX-49	3PST-NO	....	12	175	3	½	6.51
W102MPCX-50	Size 2	....	24	750	3	½	6.68
W102MPCX-51		....	48	3000	3	½	6.91
W102MPCX-52		....	6	25	3	½	10.63
W102MPCX-53	6PST-NO	....	12	100	3	½	10.77
W102MPCX-54	Size 3	....	24	375	3	½	10.83
W102MPCX-55		....	48	1500	3	½	10.92
W103MPCX-30		....	6	50	2	½	9.65
W103MPCX-31	DPDT	....	12	175	2	½	9.65
W103MPCX-32	Size 2	....	24	750	2	½	9.80
W103MPCX-33		....	48	3000	2	½	10.04
W103MPCX-34		....	6	25	2	½	16.91
W103MPCX-35	4PDT	....	12	100	2	½	17.02
W103MPCX-36	Size 3	....	24	375	2	½	17.10
W103MPCX-37		....	48	1500	2	½	17.22

★QUANTITY DISCOUNTS

For larger quantity orders, the following discounts apply. Use price shown in tables above, and multiply with multipliers shown.

For Lots	Discount	Multiplier	For Lots	Discount	Multiplier
25-49	−10%	.90	75-99	−20%	.80
50-74	−15%	.85	100-499	−30%	.70

MAGNEREED (DRY REED) RELAYS

Stabilized contact resistance, high speed positive switching and sensitive operation; adaptable to complex logic circuits. All models have molded epoxy resin encapsulation. Pre-adjusted precious metal contacts in inert gas environment are actuated by coil around capsule. **Series W101:** 10 VA at .5 amp max. or 200 VDC max. resistive. Life, 5 million cycles at max. load; 20 million, ½-load. Cap., 1.0 pF between contacts. Size: W101EP, 1" x 7/16" dia. (Wt., 1 oz.); W101PC, SPST-NO, 1½" x ½" x 9/16" (Wt., 2 oz.); W101PC, DPST-NO, 1½" x 1 1/16" x 9/16" (Wt., 3 oz.). **Series W102:** 15 VA at 1 A max., or 250 VAC max. non-inductive. Life, 20 million cycles at max. load; 100 million ½-load. Cap., SPST, 1 pF; DPST, 1.2 pF. Size: W102PC, SPST-NO, 2¼" x 2 1/32" x 5/8" (Wt., 3 oz.); W102PC, DPST-NO, 2¼" x 1¼" x ¾" (Wt., 4 oz.). **Series W103:** 10 VA at ½ A, or 250 VAC max. non-inductive. Life, 25 million cycles at max. load; 50 million, ½-load. Cap., SPDT, 3 pF; DPDT 3.5 pF. Operation, SPDT break before make, single side stable. Size: W103PC, SPDT, 2¼" x 2 1/32" x 5/8" (Wt., 3 oz.); W103PC, DPDT, 2¼" x 1¼" x ¾" (Wt., 4 oz.). **Series W103CP:** Plug-in mounting type with non-metallic dust cover; has W103 relays with common operating coil. DPDT units are 8-pin; 3PDT units, 11-pin. Size, 1⅜" x 1⅜" x 2⅛" (Wt., 5 oz.). **Series W104:** 3 VA at .25 A max., or 28 V max. non-inductive. Life, 10 million cycles at rated load. No bias magnet. Size: W104EP, 1" x 7/16" dia. (Wt., 1 oz.); W104PC, SPDT, 1½" x ½" x 9/16" (Wt., 2 oz.); W104PC, DPDT, 1½" x 1 1/16" x 9/16" (Wt., 2 oz.). **Series W105:** 0.1 VA at 10 mA. Life, 10 million cycles at rated load. Size, 7/16" x ¼" dia. (Wt., ½ oz.).

Magnecraft Number	Contacts	Coil Data* mA	VDC	Ω	Av. Time, msec Operate	Release	Net Ea. 1-24*
W101EPX-5	SPST-NO	....	6	65	1	½	$ 3.80
W101EPX-6	SPST-NO	....	12	225	1	½	3.80
W101EPX-7	SPST-NO	....	24	1000	1	½	4.45
W101EPX-8	SPST-NO	8	....	5000	1	½	4.91
W101PCX-5	SPST-NO	....	6	65	1	½	5.64
W101PCX-6	SPST-NO	....	12	250	1	½	5.69
W101PCX-7	SPST-NO	....	24	1000	1	½	5.80
W101PCX-8	SPST-NO	8	....	5000	1	½	6.26
W101PCX-9	DPST-NO	....	6	40	1	½	7.89
W101PCX-10	DPST-NO	....	12	150	1	½	7.92
W101PCX-11	DPST-NO	....	24	650	1	½	7.98
W101PCX-12	DPST-NO	8	....	5000	1	½	8.47
W102PCX-1	SPST-NO	....	6	100	3	½	5.52
W102PCX-2	SPST-NO	....	12	400	3	½	5.59
W102PCX-3	SPST-NO	....	24	1500	3	½	5.64
W102PCX-4	SPST-NO	6.5	....	5000	3	½	6.16
W102PCX-5	DPST-NO	....	6	50	3	½	7.20
W102PCX-6	DPST-NO	....	12	200	3	½	7.27
W102PCX-7	DPST-NO	....	24	800	3	½	7.33
W102PCX-8	DPST-NO	9	....	5000	3	½	7.85
W103PCX-1	SPDT	....	6	100	2	½	8.36
W103PCX-2	SPDT	....	12	400	2	½	8.41
W103PCX-3	SPDT	....	24	1500	2	½	8.47
W103PCX-4	SPDT	6.5	....	5000	2	½	8.99
W103PCX-5	DPDT	....	6	50	2	½	12.47
W103PCX-6	DPDT	....	12	200	2	½	12.50
W103PCX-7	DPDT	....	24	800	2	½	12.55
W103PCX-8	DPDT	9	....	5000	2	½	13.09
W103CPX-7	DPDT	....	6	75	2	½	15.68
W103CPX-8	DPDT	....	12	300	2	½	15.71
W103CPX-9	DPDT	....	24	1000	2	½	15.77
W103CPX-10	DPDT	8	....	5000	2	½	16.46
W103CPX-11	3PDT	....	6	40	2	½	20.34
W103CPX-12	3PDT	....	12	150	2	½	20.41
W103CPX-13	3PDT	....	24	650	2	½	20.56
W103CPX-14	3PDT	10	....	5000	2	½	21.23
W104EPX-2	SPDT	....	6	65	1	1	7.74
W104EPX-3	SPDT	....	12	225	1	1	7.74
W104EPX-4	SPDT	....	24	1000	1	1	8.45
W104EPX-5	SPDT	8	....	5000	1	1	8.98
W104PCX-7	SPDT	....	6	65	1	1	10.57
W104PCX-8	SPDT	....	12	225	1	1	10.63
W104PCX-9	SPDT	....	24	1000	1	1	10.73
W104PCX-10	SPDT	8	....	5000	1	1	11.17
W104PCX-3	DPDT	....	6	40	1	1	15.32
W104PCX-4	DPDT	....	12	150	1	1	15.35
W104PCX-5	DPDT	....	24	650	1	1	15.41
W104PCX-6	DPDT	8	....	5000	1	1	15.89
W105EPX-1	SPST-NO	....	6	90	1	1	7.45
W105EPX-2	SPST-NO	....	12	350	1	1	7.45
W105EPX-3	SPST-NO	....	24	1300	1	1	7.30

3 AMP SPST-NO POWER DRY REED RELAYS

Low profile, printed circuit mounted relay with contact rating formerly available only in general purpose or telephone type relays. Housed in molded nylon bobbin with snap-on, steel cover for mechanical and magnetic shielding. Switch mechanism in hermetically-sealed glass capsule. **Contacts:** SPST-NO (Form A). **Rating:** 100 VA at 3 A or 250 V max. **Power:** 0.5 W nominal; 2 watts max. **Size:** 2 5/8" x 4 1/64" x ¾". Wt., 3 oz.

Magnecraft Number	Coil Data* mA	VDC	Ω	Net Each, Lots of 1-24	25-49	50-74	75-99	100-499
W102RMPCX-1	 6		70	$9.10	$8.19	$7.74	$7.29	$6.37
W102RMPCX-2	 12		250	9.10	8.19	7.74	7.29	6.37
W102RMPCX-3	 24		1000	9.19	8.27	7.80	7.34	6.43
W102RMPCX-4	 48		4000	9.47	8.53	8.05	7.57	6.63
Similar to above, but with inline leads and size: 3¼" x ½" x 1 3/32".								
W102RMX-5	 6		200	$5.07	$4.57	$4.31	$4.06	$3.54
W102RMX-6	 12		500	5.12	4.61	4.36	4.09	3.59
W102RMX-7	 24		2000	5.26	4.74	4.47	4.20	3.69
W102RMX-8	 48		5000	5.50	4.94	4.68	4.40	3.85

*COIL DATA

Current shown is pull-in at specified value or less. Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

MINIATURE PC DRY REED RELAYS

Modular, printed circuit dry reed relays are fast, reliable and compact. Hermetically sealed in glass capsule filled with inert gas. Reed support terminals rigidly anchored to molded nylon bobbin; welded to switch leads for maximum insulation. Terminal pins spaced for .1" grid centers. Magnetically shielded and mechanically protected by snap-on steel cover. **Contact Resistance:** 150 milliohms avg. **Life:** W101, 5 million cycles at rated load; W104, 10 million cycles. **Rating:** W101, 10 VA, 500 mA max. or 200 VDC max., non-inductive; W104, 3 VA, 250 mA max. or 28 V max., non-inductive. **Size 1:** Single Form A or C, ⅜" h. x 13/32" w. x 1⅛" lg.; requires 500 mWDC power. Weight, 1 oz. **Size 2:** Three form A or two Form C, ⅝" h. x 39/64" w. x 1⅛" lg.; requires 700 mWDC power. Weight, 1 oz.

Magnecraft Number	Contacts, Size & Form	Coil Data* mA	VDC	Ω	Avg. Time, msec Operate	Release	Net Ea. 1-24•
W101MPCX-1	SPST-NO	6	70	1	½		$ 3.60
W101MPCX-2	Size 1	12	300	1	½		3.60
W101MPCX-3	Form A	24	1100	1	½		3.63
W101MPCX-4		48	4300	1	½		3.77
W101MPCX-5	3PST-NO	6	50	1	½		6.75
W101MPCX-6	Size 2	12	220	1	½		6.75
W101MPCX-7	3 Form A	24	850	1	½		6.77
W101MPCX-8		48	3300	1	½		6.85
W104MPCX-1	SPDT	6	70	1	½		6.82
W104MPCX-2	Size 1	12	300	1	½		6.83
W104MPCX-3	Form C	24	1100	1	½		6.85
W104MPCX-4		48	4300	1	½		6.98
W104MPCX-5	DPDT	6	50	1	½		11.62
W104MPCX-6	Size 2	12	220	1	½		11.63
W104MPCX-7	2 Form C	24	850	1	½		11.65
W104MPCX-8		48	3300	1	½		11.73

MICRO-MINIATURE DRY REED PC RELAYS

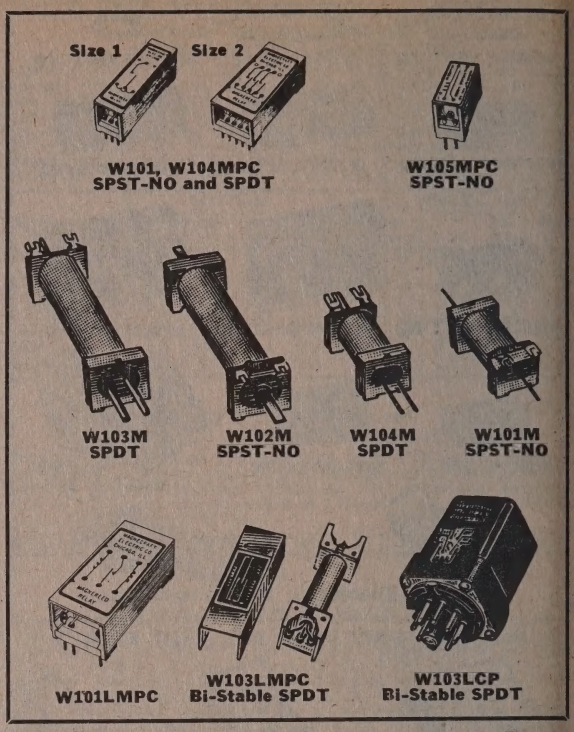
Low profile, plug-in relays for printed circuit use. Same construction as miniature types, above. **Contact Resistance:** 200 milliohms avg. **Life:** 10 million cycles at rated load. **Rating:** 110 mVA max. at 10 mA max. or 12 V max., non-inductive. **Size:** 11/32" h. x 1/16" w. x 5/8" lg. Weight, ½ oz.

W105MPCX-1	SPST-NO	6	120	½	¼	$6.31
W105MPCX-2	SPST-NO	12	500	½	¼	6.33
W105MPCX-3	SPST-NO	24	2000	½	¼	6.46

OPEN STYLE AXIAL LEAD DRY REED RELAYS

Low cost reed relays give optimum reliability and fast operation. Tinned leads are specially fastened to a molded nylon bobbin for stress relief on glass capsule during soldering. Rugged coil terminal inserts eliminate possibility of shorts. Contacts hermetically sealed with inert gas in glass capsule; free from dust contamination, moisture or tampering. Tinned terminals for circuit mounting. No. 16-265-6 clip available for clip mounting. Choice of 2 sizes; 2 contact arrangements. **Series W101MX:** Miniature; SPST-NO (1 Form A) contacts rated 10 VA max. at .5 A max. or 200 VDC max. resistive. Coil 600 mW nominal. Cap., 0.3 pF avg. between contacts. Life, 5 million operations typical. Size, 2¼" lg. x ½" w. x 1/16" h., including leads. **Series W102MX:** Standard size; SPST-NO (1 Form A) contacts rated 15 VA max. at 1 A max. or 250 VAC max. resistive. Coil, 300 mW nominal. Cap., 0.9 pF avg. between contacts. Life, 20 million operations typ. Size, 3¼" lg. (incl. leads) x 19/32" w. x ½" h. **Series W103MX:** Standard size; SPDT (1 Form C) contacts rated 10 VA max. at 0.5 A max. or 250 VAC max. resistive. Coil, 300 mW nominal. Cap., 3.0 pF avg. between contacts. Life, 25 million operations typ. Size, 3 7/16" lg. (incl. leads) x 19/32" w. x ½" h. **Series W104MX:** Miniature; SPDT (1 Form C) contacts rated 3 VA max. at 0.25 A max. or 28 VAC max. resistive. Coil, 600 mW nominal. Cap., 1.3 pF avg. across contacts. Life, 10 million operations typ. Size, 1" x 7/16" x ½" (not incl. leads).

W101MX-1	SPST-NO	6	100	1	0.5	$2.20
W101MX-2	(1 Form A)	12	250	1	0.5	2.25
W101MX-3	Min.	24	500	1	0.5	2.25
W101MX-4		9	2500	1	0.5	2.43
W102MX-1		40	100	3	0.5	2.52
W102MX-2	SPST-NO	6	200	3	0.5	2.60
W102MX-3	(1 Form A)	12	500	3	0.5	2.60
W102MX-4	Std.	24	2000	3	0.5	2.86
W102MX-5		5.5	5000	3	0.5	3.05
W104MX-1	SPDT	6	100	1	1	5.91
W104MX-2	(1 Form C)	12	250	1	1	5.96
W104MX-3	Min.	24	500	1	1	5.96
W104MX-4		9	2500	1	1	6.16
W103MX-1	SPDT	6	200	2	0.5	4.89
W103MX-2	(1 Form C)	12	500	2	0.5	4.89
W103MX-3	Std.	24	2000	2	0.5	5.15
W103MX-4		5.5	5000	2	0.5	5.34



CLASS W103LMPC MAGNETIC LATCHING (BI-STABLE) DRY REED RELAYS

Biased permanent magnet holds either contact position; no coil current required. Ideal for memory applications. Coil current polarity reversed for single wound coils; separate polarized windings on double-wound coils have individual input terminals. Modular construction and printed circuit terminals for rugged, dependable use. **Contacts:** SPDT (Form C, Bi-Stable) break-before-make. **Rating:** 10 VA, 200 V maximum or 0.2 amp maximum non-inductive. **Power:** 0.15 W nominal and 2 W max., single wound; 0.2 W nominal and 2 W max., double wound. **Average Time:** 2 msec operate and release. **Life:** Twenty-five million cycles at rated load. **Size:** 2 5/8" x 41/64" x ¾". Weight, 1 oz.

Magnecraft Number‡	Coil Data* mA	VDC	Ω	Net Each, Lots of 1-24	25-49	50-74	75-99	100-499
W103LMPCX-3	40		70	$8.57	$7.71	$7.29	$6.86	$6.00
W103LMPCX-4		6	250	8.57	7.71	7.29	6.86	6.00
W103LMPCX-5		12	1000	8.57	7.71	7.29	6.86	6.00
W103LMPCX-6		24	4000	8.80	7.92	7.48	7.05	6.16
W103LMPCX-7	4.0		7000	9.71	8.75	8.26	7.78	6.80
W103LMPCX-8	80		30†	9.97	8.98	8.48	7.98	6.97
W103LMPCX-9		6	120†	10.11	9.10	8.59	8.09	7.08
W103LMPCX-10		12	460†	10.11	9.10	8.59	8.09	7.08
W103LMPCX-11		24	1800†	10.91	9.83	9.27	8.73	7.65
W103LMPCX-12	8.0		3000†	12.18	10.96	10.35	9.74	8.53

CLASS W103LCP PLUG-IN LATCHING (BI-STABLE) REED RELAYS

Magnetic latching action; requires no coil current to hold either of two latching positions. Single wound coil (Types W103LCPX-7 to -10) switching is achieved by reversing coil current polarity. Double wound coil (-11 to -14) has separate polarized winding; switching is achieved by use of dual input. Enclosed plug-in construction. **Contacts:** SPDT. **Contact Resistance:** 150 milliohms average. **Contact Load Rating:** 10 VA at 0.2 amp maximum or 200 VDC maximum, resistive. **Typical Life:** 25 million operations (longer at reduced loads). **Operate Time:** 2 milliseconds average. **Contact Bounce:** 2 milliseconds average. **Capacitance:** 4.0 pF average, across contacts. **Size:** 1⅜" x 1⅜" x 2⅛" high. Wt., 5 oz.

W103LCPX-7		6	250	$10.08	$9.06	$8.56	$8.06	$7.05
W103LCPX-8		12	1000	10.11	9.10	8.59	8.09	7.08
W103LCPX-9		24	4000	10.40	9.36	8.83	8.32	7.28
W103LCPX-10	4		7000	10.67	9.61	9.06	8.54	7.47
W103LCPX-11		6	120†	11.97	10.77	10.18	9.57	8.37
W103LCPX-12		12	460†	12.09	10.88	10.29	9.68	8.47
W103LCPX-13		24	1800†	12.16	10.93	10.33	9.72	8.50
W103LCPX-14	8		3000†	12.52	11.28	10.64	10.01	8.77

†Ohms per coil. ‡Series W103LMPCX3-7, single wound coils; Series W103LMPCX8-12, double wound coils.

***COIL DATA:** Current shown is pull-in at specified value or less. Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nom. for AC relays at 25° C. Resistance shown is ±10% at 25° C.

• **Quantity Discounts:** Lots 25-49, −10%; 50-74, −15%; 75-99, −20%; 100-499, −30%; write for discounts on larger quantities

MERCURY-WETTED REED, HIGH VOLTAGE & LATCHING RELAYS

MODULAR PACKAGED MERCURY WETTED STANDARD SIZE RELAYS

Modular unit features nylon bobbin and integral base, epoxy resin terminal board, one piece tinned terminal supports and pins riveted into mortised position, steel cover and hermetically switch mechanism. High performance from mercury-wetted contacts: avoids contact erosion, welding, bounce and chatter. Capillary action in high pressure hydrogen atmosphere maintains mercury film on coil actuated contacts. Less than 10% variation of 50 milliohms maximum resistance for life; life exceeds one billion cycles. Operates upright, no more than 30° from vertical. No adjustments, no deterioration. Switches from 50 VA to extremely minute current and voltage. **Contacts:** Series 132, SPST-NO (Form A); Series 133, SPDT (Form C) Single Side Stable. **Rating:** Series 132, 50 VA at 3 amps max. or 400V max. noninductive; Series 133, same, but 2 amps max. **Power Requirements:** 0.5W nominal, 0.15W minimum, 2W maximum. **Temperature Range:** −38°F to +200°F. **Average Time:** Operate and release, 2 msec. **Dimensions:** 41/64″ h. x ¾″ w. x 2 5/8″ lg. Weight, 3 oz.

Magnecraft Number	Coil Data* mA	VDC	Ω	Net Each, Lots of* 1-24	25-49	50-74	75-99	100-499
W132MPCX-1	140	....	30	$6.75	$6.08	$5.73	$5.41	$4.71
W132MPCX-2	....	6	70	6.75	6.08	5.73	5.41	4.71
W132MPCX-3	....	12	250	6.75	6.08	5.73	5.41	4.71
W132MPCX-4	....	24	1000	6.75	6.08	5.73	5.41	4.71
W132MPCX-5	....	48	4000	6.95	6.25	5.91	5.55	5.86
W132MPCX-6	9	....	7000	7.73	6.96	6.57	6.18	5.42
W133MPCX-1	140	....	30	11.83	10.65	10.06	9.46	8.28
W133MPCX-2	....	6	70	11.83	10.65	10.06	9.46	8.28
W133MPCX-3	....	12	250	11.83	10.65	10.06	9.46	8.28
W133MPCX-4	....	24	1000	11.83	10.65	10.06	9.46	8.28
W133MPCX-5	....	48	4000	12.35	11.11	10.50	9.88	8.64
W133MPCX-6	9	....	7000	14.41	13.69	12.25	11.54	10.09

ENCAPSULATED MERCURY-WETTED MINIATURE RELAYS

Small, printed circuit relays. Plug-in terminal pins extending from epoxy mounting board, are soldered to rigid terminal posts; leads from capsule are soldered with capsule and coil in place to eliminate breakage, contact distortion and protect coil. Environment-proof housing provides protection from atmospheric conditions. Complete unit mounts quickly to circuit boards. No contact bounce or erosion. Operates upright, no more than 30° from vertical. **Contacts:** Series W131PCX8 thru 11, SPST-NO (Form A); Series W131PCX12 thru 15, DPST-NO (2 Form A). **Power Requirements:** Series W131PCX8 thru 11, 0.6W nominal; Series W131PCX12 thru 15, 0.9W nominal. **Temperature Range:** −38°F to +200°F. **Average Time:** Operate and release, 1 msec. **Life:** One hundred million cycles at rated load. **Dimensions:** Series W131PCX8 thru 11, ½″ h. x 5/16″ w. x 1 ½″ lg. (Wt., 2 oz.); Series W131PCX12 thru 15, 7/16″ h. x 11/16″ w. x 1 ½″ lg. (Wt., 3 oz.).

Magnecraft Number	Coil Data* mA	VDC	Ω	Net Each, Lots of* 1-24	25-49	50-74	75-99	100-499
W131PCX-8	....	6	65	$9.70	$8.74	$8.24	$7.76	$6.79
W131PCX-9	....	12	250	9.77	8.79	8.31	7.81	6.84
W131PCX-10	....	24	1000	9.90	8.90	8.41	7.92	6.93
W131PCX-11	8	....	5000	10.43	9.39	8.86	8.35	7.30
W131PCX-12	....	6	40	12.30	11.07	10.45	9.84	8.61
W131PCX-13	....	12	150	12.34	11.10	10.49	9.87	8.63
W131PCX-14	....	24	650	12.40	11.17	10.54	9.92	8.68
W131PCX-15	8	....	5000	12.98	11.68	11.03	10.38	9.08

MINIATURE MODULAR, PRINTED CIRCUIT MERCURY-WETTED REED RELAYS

Modular design for printed circuit applications. Integral nylon bobbin and base for maximum electrical insulation. Steel cover for full mechanical protection and magnetic shielding. No contact bounce. Terminal pins spaced 0.1″ for rapid assembly to PC boards. Upright operating position, not more than 30° from vertical. **Contacts:** W131MPCX-2 thru -5, SPST-NO (1 Form A); -6 thru -9 DPST-NO (2 Form A). Rated 28 VA max. at 1.0 A max. or 100 VAC max. resistive. **Coil Power:** 500 mW nom., SPST types; 700 mW nom., DPST. **Capacitance:** 1.2 pF avg. across contacts. **Life:** 25 million operations typical; longer at reduced load. **Size:** W131MPCX-2 thru -5, 13/32″ w. x 1 1/8″ lg. x 5/8″ h.; -6 thru -9, 29/64″ w. x 1 1/8″ lg. x 5/8″ h.

Magnecraft Number	Contacts	Coil Data* Volts	Ohms	Av. Time, msec Operate	Release	Net Each 1-24*
W131MPCX-2		6	70	1	1	$ 7.41
W131MPCX-3	SPST-NO	12	300	1	1	7.50
W131MPCX-4	(1 Form A)	24	1100	1	1	7.56
W131MPCX-5		48	4300	1	1	8.09
W131MPCX-6		6	50	1	1	13.36
W131MPCX-7	DPST-NO	12	220	1	1	13.41
W131MPCX-8	(2 Form A)	24	850	1	1	13.48
W131MPCX-9		48	3300	1	1	13.82

MAGNETIC LATCHING MERCURY-WETTED REED RELAYS

Bi-stable relay requires no coil current to hold either of two latching positions. Armature contact remains in last operated position until coil polarity is reversed. Ideal for printed circuit memory applications, with stress-free mounting, rigid positioning and mechanical protection. With single-wound coils, switching is achieved by reversing coil polarity; double-wound coils have separate polarized windings, switched by two separate inputs. **Contacts:** SPDT (1 Form C) break-before-make, bi-stable. **Rating:** 50 VA at 2 amps max. or 400 VDC max., resistive. **Power:** 500 mW nominal. **Average Time:** 2 msec., operate and release. **Life:** 25 million operations, typical; longer at reduced load. **Size:** 2 5/8″ x ¾″ x 41/64″.

Magnecraft Number	Coil Data* Winding	mA	VDC	Ohms	Net Ea. 1-24*
W133LMPCX-17	Single	40	.....	70	$13.06
W133LMPCX-18	Single	.....	6	250	13.06
W133LMPCX-19	Single	.....	12	1000	13.13
W133LMPCX-20	Single	.....	24	4000	13.32
W133LMPCX-21	Single	4	.....	7000	13.45
W133LMPCX-22	Double	80	.....	30/30	14.86
W133LMPCX-23	Double	.....	6	120/120	14.88
W133LMPCX-24	Double	.....	12	460/460	14.98
W133LMPCX-25	Double	.....	24	1800/1800	15.11
W133LMPCX-26	Double	8	.....	3000/3000	15.22

HIGH VOLTAGE DRY REED RELAYS

Contacts: SPST-NO (Form A), 50 VA at 3 A max. **Size:** 4½″ x 15/16″ x 7/8″. Wt., 3 oz.

Class 102V—5000 V in modular package. Contact and coil leads soldered to rigid terminal posts; widely spaced. Internally insulated. Operates in any position. **Rating:** 5 KVDC max. or 5 KVAC peak resistive. **Time:** Operate, 3.0 msec avg.; release, 0.5 msec. **Life:** 20 million cycles typical.

Class 102HV—10,000 V. Specially insulated. Contact and coil leads soldered to rigid terminal posts; widely spaced. Shock proof material. **Rating:** 10,000 V at 1 mA resistive. **Time:** Operate, 25 msec typical including bounce. **Life:** One million cycles typ.

Class 102UHV—20,000 V. Outside leads for coils. Specially insulated. **Rating:** 20,000 V peak at 1 mA resistive. **Time:** Operate, 25 msec typ. in. bounce. **Life:** One million cycles typical. Note: Observe switch polarity.

Magnecraft Number	Coil Data* mA	VDC	Ω	Net Each, Lots of* 1-24	25-49	50-74	75-99	100-499
W102VX-49	....	6	70	$20.75	$18.68	$17.64	$16.60	$14.53
W102VX-50	....	12	250	20.81	18.73	17.69	16.65	14.57
W102VX-51	....	24	1000	20.88	18.79	17.75	16.70	14.62
W102VX-52	....	48	4000	21.41	19.27	18.20	17.13	14.99
W102VX-55†	....	24	2900	25.12	22.61	21.35	20.10	17.58
W102HVX-1	....	6	25	27.23	24.51	23.15	21.78	19.06
W102HVX-2	....	12	100	27.23	24.51	23.15	21.78	19.06
W102HVX-3	....	24	400	27.23	24.51	23.15	21.78	19.06
W102UHVX-1	....	6	25	39.50	35.55	33.58	31.61	27.65
W102UHVX-2	....	12	100	39.50	35.55	33.58	31.61	27.65
W102UHVX-3	....	24	400	39.50	35.55	33.58	31.61	27.65

†SPST-NC (Form B).

MINIATURE 1000-VOLT REED RELAYS

Switches up to 1000 volts, in miniature package with reed relay reliability. Class 101VM has in-line design with reed leads fastened to molded bobbin for stress relief. The nylon bobbin has rugged coil terminal inserts to eliminate shorts. Class 101VMPC has reed leads spaced 0.3″ from coil leads for high dielectric strength, elimination of shorts. **Contacts:** SPST-NO, Form A. **Rating:** 1000 VDC at .001 amp max., resistive. **Coil Power:** W101VM, 600 mW nominal; W101VMPC, 700 mW. **Average Time:** Operate, 1 msec.; release, 0.5 msec. **Life:** Greater than 1 million operations. **Size:** W101VM, 2¼″ x ½″ x 7/16″; W101VMPC, 1⅛″ x ⅜″ x 39/64″.

Magnecraft Number	Coil Data* mA	VDC	Ω	Net Each, Lots of* 1-24	25-49	50-74	75-99	100-499
W101VMX-1	...	6	100	$12.62	$11.37	$10.73	$10.10	$8.84
W101VMX-2	...	12	250	12.65	11.39	10.75	10.12	8.86
W101VMX-3	...	24	500	12.65	11.39	10.75	10.12	8.86
W101VMX-4	9	....	2500	12.87	11.59	10.95	10.30	9.02
W101VMPCX-1	...	6	50	13.79	12.40	11.72	11.03	9.65
W101VMPCX-2	...	12	220	13.86	12.47	11.77	11.09	9.70
W101VMPCX-3	...	24	850	13.89	12.51	11.81	11.11	9.72
W101VMPCX-4	...	48	3300	14.14	12.74	12.03	11.31	9.90

*SEE PREVIOUS PAGE FOR COIL DATA. ★LARGER QUANTITY PRICES ON REQUEST.

LOW PROFILE PC BOARD RELAYS

Extremely low profile of 0.4" allows efficient space utilization in communications systems, data processing equipment, and automatic control systems. The Class 65 power relay is also useful in heating systems and automotive and consumer electronics equipment. Terminals are spaced on standard 0.1" grid.

CLASS 63, DPDT

Contacts rated 1 Amp at 24 VDC or 300 mAmp at 115 V AC/DC resistive. Operate time, 8 msec. Dielectric strength, 500 V rms between winding and frame. Life, 6 x 10^6 operations, longer at reduced loads.

Magnecraft Number	Coil Data: Nom. Volts	Max. Volts	Must Operate Volts	Ohms	Net Each 1-24
W63TPCX-1	6	11	4.2	81	$4.65
W63TPCX-2	12	22	8.3	322	4.65
W63TPCX-3	24	44	17.0	1045	4.65
W63TPCX-4	48	88	32.8	5350	4.95
W63PCX-1*	6	11	4.2	81	4.45
W63PCX-2*	12	22	8.3	322	4.45
W63PCX-3*	24	44	17.0	1045	4.45
W63PCX-4*	48	88	32.8	5350	4.75

*Single contacts; others bifurcated.

CLASS 64, 4PDT AND 6PDT

Contacts rated 1 Amp at 24 VDC or 300 mAmp at 115 V AC/DC resistive. Operate time, 8 msec. Dielectric strength, 1000 V rms between contacts. Life, 1 x 10^8 operations.

W64TPCX-1	6	12.4	3.9	50	$6.11
W64TPCX-2	12	24.0	7.8	135	6.11
W64TPCX-3	24	47.0	15.5	730	6.11
W64TPCX-4	48	88.0	32.0	2700	6.54
W64TPCX-5†	6	12.4	4.6	50	7.72
W64TPCX-6†	12	24.0	9.5	135	7.72
W64TPCX-7†	24	47.0	18.5	730	7.72
W64TPCX-8†	48	88.0	37.0	2700	8.11

†6PDT; others 4PDT.

CLASS 65 MINIATURE, SPDT

Contacts rated 8 Amps or 100 W or 500 VA. Operate time, 6 msec. Dielectric strength, 500 V between contacts. Life, 2 x 10^7 operations.

Magnecraft Number	Coil Data: Nom. Volts	Max. Volts	Must Operate Volts	Ohms	Net Each 1-24
W65RPCX-1	6	10.6	4.2	80	$3.40
W65RPCX-2	12	21.5	8.3	330	3.40
W65RPCX-3	24	40.0	16.8	1200	3.40
W65RPCX-4	48	79.0	32.8	4750	4.52
W65RPCX-5§	6	10.6	4.2	80	3.40
W65RPCX-6§	12	21.5	8.3	330	3.40
W65RPCX-7§	24	40.0	16.8	1200	3.40
W65RPCX-8§	48	79.0	32.8	4750	4.52

§Upright style; others flatpack.

CLASS 388SS AMPLIFIER DRIVEN GENERAL PURPOSE RELAY

Solid state hybrid relay allows full 10 Amp switching with only 70 microwatt input power. Combines high input impedance amplifier with the proven reliability of our Class 388 relay. An input as low as 2.4 VDC will energize the relay. Dropout occurs at 1.5 VDC or less. Operating temperature range is −10° C to +55° C. Contacts are SPDT or DPDT gold flashed silver alloy rated at 10 Amps at 28 VDC/115 VAC, resistive. Available in plug-in style or surface mount.

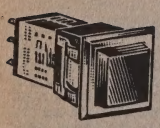
Magnecraft Number	Contacts	Control Volts	Net Each, Lots of 1-9	10-24	25-49
PLUG-IN					
W388SSCPX-1	SPDT	2.5–24	$15.11	$14.35	$13.60
W388SSCPX-2	DPDT	2.5–24	15.60	14.82	14.05
SURFACE MOUNT					
W388SSCQX-1	SPDT	2.5–24	$15.11	$14.35	$13.60
W388SSCQX-2	DPDT	2.5–24	15.60	14.82	14.05

SERIES 03 LIGHTED PUSHBUTTON SWITCHES

Ideal for matrix mounting and PC board uses. Faston (.110") quick connect terminals. **Overall Size (Including Terminals):** Bushing mount, 5/8" w. x 5/8" d. x 2 7/64" h.; snap-in bezel mount or bezel mount with barrier, .890" w. x .890" d. x 2.108" h. Series 03LPBS also available with 5/8" x 3/4" buttons, barriers and bezel mounts. Order lens caps, bezels and barriers separately.

RATED 5 AMPS AT 125/250 VAC BUSHING MOUNT

Licon No.	Unit Type	Description	List Price•
03-100010	Indicator	Bushing mt.	$1.40
03-113110*	Momentary	.....	2.05
03-123110†	Momentary	.....	2.45
03-112110	Alternate	.....	2.35
03-122110	Alternate	.....	2.75



RATED 1 AMP AT 125 VAC BUSHING MOUNT

03-113210*	Momentary	.....	$2.25
03-123210†	Momentary	.....	2.80
03-112210	Alternate	.....	2.55
03-122210	Alternate	.....	3.15

*1 pole. †2 pole.

LENS CAP

Licon Number	Button: Color	Size	List Price•
03-911*1	Solid	5/8" x 5/8"	$0.40
03-951*1	Solid	5/8" x 3/4"	.40
03-912*1	Projected	5/8" x 5/8"	.75
03-952*1	Projected	5/8" x 3/4"	.75
03-911*2†	Solid	5/8" x 5/8"	.75
03-912*2†	Projected	5/8" x 5/8"	1.05

*Substitute cap color code: 1—White; 2—Red; 3—Green; 4—Blue; 5—Yellow; 6—Amber; 7—Orange. †Insertable legend; all others permanent legend, specify when ordering.

BARRIERS AND BEZELS

Licon Number	Button Size	Description	List Price
03-600001	5/8" x 5/8"	Bezel mount housing	$0.75
03-600002	5/8" x 5/8"	Single barrier housing	.75
03-600003	5/8" x 5/8"	Double barrier housing	.75
03-600004	5/8" x 3/4"	Bezel housing	.75
03-600005	5/8" x 3/4"	Single barrier housing	.75
03-600006	5/8" x 3/4"	Double barrier housing	.75

●DISCOUNT SCHEDULE "B" SHOWN ON PREVIOUS PAGE.

TYPE 01 COMPUTER QUALITY LIGHTED PUSHBUTTON SWITCHES
(DISCOUNT SCHEDULE "B")

Switches with exclusive FROST GLO™ illumination to complement and enhance the front panel appearance of computer, computer peripheral, communications, test and measurement, office and medical electronic equipment. Switches feature solid or projected color lens caps, insertable legends, one-piece construction and front-of-panel mounting and relamping. Mounts in .855" x 1.095" cutout. Contacts are rated 10 amps, form Z, or 5 amps, form C, at 125/250VAC. Contacts are fine silver, or gold for low-level switching. Terminals mate with .110" quick-connectors. Unit accepts one T 1 3/4 flange base lamp which can be ordered separately. U.L. listed.

Licon No.	Contacts: Poles	Form	Action	List Price•
SILVER CONTACTS				
01-669111	1	C	Alternate	$5.20
01-669131	1	Z	Alternate	5.15
01-669511	1	C	Momentary	3.80
01-669531	1	Z	Momentary	3.75
01-669211	2	C	Alternate	6.00
01-669231	2	Z	Alternate	5 90
01-669611	2	C	Momentary	4.60
01-669631	2	Z	Momentary	4.50
GOLD CONTACTS				
01-669151	1	C	Alternate	$5.60
01-669171	1	Z	Alternate	5.55
01-669551	1	C	Momentary	4.05
01-669571	1	Z	Momentary	4.00
01-669251	2	C	Alternate	6.65
01-669271	2	Z	Alternate	6.55
01-669651	2	C	Momentary	5.50
01-669671	2	Z	Momentary	5.40

LENS CAPS FOR 01-669 SWITCHES ORDERING CODE

01- 9 6 9 2 1 2

A B C

A—2 = Insertable legend.
3 = Frost Glow.

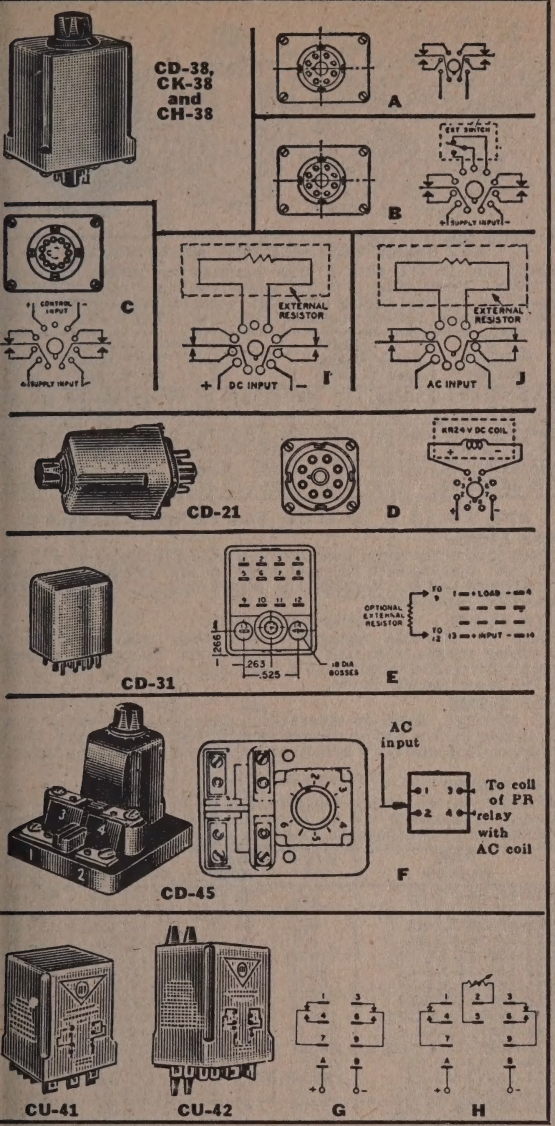
B—1 = Solid color.
2 = Projected color.*

C—1 = White.
2 = Red.
3 = Green.
4 = Blue.
5 = Yellow.
6 = Amber.*
7 = Orange.*

*Not available as Frost Glo.

Licon No. 01-96921X Lens Cap—List Price..... $0.85
Licon No. 01-96922X Lens Cap—List Price..... 1.10
Licon No. 01-96931X Lens Cap—List Price..... .95

SOLID STATE TIME DELAY RELAYS



CU SERIES LOW-COST RELAYS

vailable in three types: Fixed or knob adjustable time delay Outline Drawing G) or adjustable with external resistor (Outline rawing H). All have internal DPDT relay rated 10 amps at 120 AC. Type CU-41 has plain case, 1.531″ x 1.406″ x 1.906″; mtg. ccessories are available. Type CU-42 has slotted flange case. L Recognized (File No. E22575). Weight, 3½ oz.

P&B Number	Dwg.	Delay, Seconds	Input Voltage	Ext. Ohms*	Net 1-9*
UA41-70001	G	1	120 VAC	None	$16.35
UA41-70010	G	10	120 VAC	None	16.35
UA41-70120	G	120	120 VAC	None	18.15
UA41-30010	G	10	24 VAC	None	16.35
UC41-30010	G	10	24 VDC	None	16.35
UC41-30120	G	120	24 VDC	None	18.15
UA42-70010	G	10	120 VAC	None	16.35
UA42-70120	G	120	120 VAC	None	18.15
UA42-30010	G	10	24 VAC	None	16.35
UB51-70010	G	1.0 to 10	120 VAC	None	19.80
UB51-70120	G	1.0 to 120	120 VAC	None	20.55
UC42-30010	G	10	24 VDC	None	16.35
UC42-30120	G	120	24 VDC	None	18.15
UF41-70010	H	1.0 to 10	120 VAC	200K	17.25
UF41-70030	H	1.0 to 30	120 VAC	600K	17.85
UF41-70120	H	1.0 to 120	120 VAC	2.4 megs	18.75
UF41-30010	H	1.0 to 10	24 VAC	200K	17.25
UH41-30010	H	1.0 to 10	24 VDC	160K	17.25
UH41-30120	H	1.0 to 120	24 VDC	2 megs	18.75
UF42-70010	H	1.0 to 10	120 VAC	200K	17.25
UF42-70120	H	1.0 to 120	120 VAC	2.4 megs	18.75
UF42-30010	H	1.0 to 10	24 VAC	200K	17.25
UH42-30010	H	1.0 to 10	24 VDC	160K	17.25
UH42-30120	H	1.0 to 120	24 VDC	2 megs	18.75

Value of external resistor required for maximum delay time.

CD SERIES GENERAL PURPOSE TYPES

Dependable, accurate and flexible solid state relays. Choice of knob-adjustable with relay in same enclosure (CD-38) or with an auxiliary relay (CD-21 and CD-45) and external resistor adjustable (CD-31). Delay on operate except CDB38-70012, CDB38-70014, CDB38-70015, CDD38-30008, CDD38-30012 and CDD38-30014 are delay on release when control circuit is de-energized (supply must be energized continuously; see Outline Dwg. C). Temp. range, −40° C to +55° C. Repeatability, ±2% (CD-38, ±1%). Polarity protection. Size: **CD-38,** 1.781″ x 2.875″ x 3.562″ h.; wt., 8 oz. **CD-21,** 1.406″ sq. x 2.562″ h.; wt., 4¼ oz. **CD-31,** .859″ x 1.109″ x 1.28″ h.; wt., 2 oz. **CD-45,** 2.5″ x 3″ x 2.75″ h.; wt., 9 oz.

P&B Number	Outline Dwg.	Time Delay, Seconds	Input Voltage	Notes	Net Each 1-9*
CDA38-70012	A	1.0	120 VAC	a	$45.90
CDB38-70001	A	0.1 to 1	120 VAC	a	50.80
CDB38-70002	A	0.1 to 5	120 VAC	a	50.80
CDB38-70003	A	0.1 to 10	120 VAC	a	50.80
CDB38-70004	A	0.6 to 60	120 VAC	a	50.80
CDB38-70005	A	1.8 to 180	120 VAC	a	50.80
CDB38-30001	A	0.1 to 10	24 VAC	a	50.80
CDB38-30002	A	0.6 to 6	24 VAC	a	50.80
CDD38-30003	A	0.1 to 10	24 VDC	a	48.20
CDD38-30004	A	0.6 to 60	24 VDC	a	48.20
CDD38-30005	A	1.8 to 180	24 VDC	a	48.20
CDD38-40002	A	0.6 to 60	48 VDC	a	48.20
CDB38-70012	C	0.6 to 60	120 VAC	a, g	60.70
CDB38-70014	C	0.1 to 10	120 VAC	a, g	60.70
CDB38-70015	C	1.8 to 180	120 VAC	a, g	60.70
CDD38-30008	C	1.8 to 180	24 VDC	a, g	57.30
CDD38-30012	C	0.6 to 60	24 VDC	a, g	57.30
CDD38-30014	C	0.1 to 10	24 VDC	a, g	57.30
CDF31-70003	E	10 max.	120 VAC	k, m	45.15
CDF38-70001	I	1 max.	120 VAC	a, h	47.25
CDF38-70002	I	5 max.	120 VAC	a, i	47.25
CDF38-70003	I	10 max.	120 VAC	a, k	47.25
CDB21-70003	D	0.1 to 10	120 VAC	b	44.90
CDB21-70001	D	1.8 to 180	120 VAC	b	44.55
CDD21-30003	D	0.1 to 10	24 VDC	c	44.55
CDD21-30001	D	1.8 to 180	24 VDC	c	45.15
CDH31-30005	E	180 max.	24 VDC	d, e	43.85
CDB45-70002	F	0.6 to 60	120 VAC	f	43.05

CH SERIES LOW-COST TYPES

Engineered for a wide range of industrial applications where not-too-critical performance suffices and where economy is more important than precision timing accuracy. Enclosed in a molded white nylon dust cover. Knob-adjustable (except CHA38-70001, fixed delay and CHD38-30021 interval-on) and have plug-in octal terminals. Repeatability, ±2%. Reset time, 125 msec. Operating temp., −10° C to +55° C. Dial setting, reference scale. Polarity protection. Size, 1.781″ x 2.406″ x 3.562″ h., max. Weight, 4 oz.

CHA38-70001	A	10	120 VAC	a	$21.75
CHB38-30001	B	1.0 to 10	24 VAC	a	22.90
CHB38-30003	B	1.0 to 180	24 VAC	a	22.90
CHB38-30011	B	1.0 to 10	24 VAC	a, g	28.60
CHB38-70001	B	1.0 to 10	120 VAC	a	22.90
CHB38-70002	B	1.0 to 60	120 VAC	a	22.90
CHB38-70003	B	1.0 to 180	120 VAC	a	22.90
CHB38-70012	B	1.0 to 60	120 VAC	a, g	29.35
CHB38-70021	B	1.0 to 10	120 VAC	a, j	27.55
CHB38-70022	B	1.0 to 60	120 VAC	a	29.00
CHB38-70023	B	1.0 to 180	120 VAC	a	27.45
CHB38-80001	B	1.0 to 10	240 VAC	a	24.15
CHD38-30001	A	1.0 to 10	24 VDC	a	21.80
CHD38-30003	A	1.0 to 180	24 VDC	a	21.80
CHD38-30021	B	1.0 to 10	24 VDC	a	28.90
CHB38-70011	B	1.0 to 10	120 VAC	a, g	28.05
CHB38-70013	B	1.0 to 180	120 VAC	a, g	27.85
CHD38-30011	B	1.0 to 10	24 VDC	a, g	29.40
CHD38-30013	B	1.0 to 180	24 VDC	a, g	29.35

CK SERIES

Available in three types: Fixed, resistor adjustable and knob adjustable for delay on operate applications. Enclosed in white nylon dust cover for compact and convenient assembly. Does not false operate and will time as low as 0.1 sec. For AC or DC applications where false operation cannot be tolerated. Knob adjustable except CKA, CKC, fixed delay; CKF, CKH, resistor adjustable. Equipped with plug-in octal type terminals. Polarity protection. Size, 2.875″ x 1.781″ x 3.562″ h. max. Weight, 4 oz.

CKA38-70010	A	10	120 VAC	a	$25.20
CKF38-70010	J	.1 to 10	120 VAC	a, l	25.35
CKH38-30010	I	.1 to 10	24 VDC	a, l	24.20
CKB38-30010	A	.1 to 10	24 VAC	a	26.35
CKB38-70010	A	.1 to 10	120 VAC	a	26.35
CKB38-70060	A	.6 to 60	120 VAC	a	26.35
CKB38-70120	A	1.2 to 120	120 VAC	a	26.35
CKD38-20010	A	.1 to 10	12 VDC	a	25.25

Notes: a, Has internal relay with DPDT contacts rated at 10 amps, 120 VAC. **b,** Use with P&B Type KRP5AG, KRP11AG or KRP14AG, 120 VAC relays. **c,** Use with P&B Type KRP5DG, KRP11DG or KRP14DG, 24 VDC relays. **d,** Use with P&B Type KHP17D11, 24 VDC relay. **e,** As supplied, unit has fixed time delay of 180 secs; adjustable to 1.8 sec, with external resistor (not furnished). **f,** Use with P&B Type PR11AY, 120 VAC relay. **g,** Provides delay on release: all other types have delay on operate. **h,** Use 33K external resistor for ½ max. time. **i,** Use 200K external resistor for ½ max. time. **j,** Provides interval on operation. **k,** Use 400K resistor for ½ max. time. **l,** Use 750K resistor for max. time. **m,** Use P & B type KHP17A11-120 VAC relay. **n,** Use 1.6 meg resistor for ½ max. time.

See another P&B page for accessories.

★QUANTITY PRICES AVAILABLE ON REQUEST

SOLID STATE FIXED AND ADJUSTABLE TIME DELAY RELAYS

CL SERIES FIXED AND ADJUSTABLE RELAYS

For applications where false operation cannot be tolerated. Designed for delay on operate. Similar to CU Series except do not false operate when timing interval is interrupted. Includes internally mounted DPDT 10-amp relay enclosed in yellow polycarbonate dust cover. Available in fixed, resistor-adjustable or knob-adjustable types. Reset time 150 msec. Plug-in type terminals and various enclosure styles available. Types CLA and CLC, fixed; Types CLF and CLH, resistor adjustable; Type CLB, adjustable knob with reference scale. Size, 1.531″ x 1.406″ x 1.906″ max. except CLB style, 1.531″ x 1.406″ x 2.782″ max. including knob. Weight, 3.5 oz.

P&B Number	Out-Line Dwg.	Time Delay, Seconds	Input Voltage	Ext. Resis. Ohms*	Net Each 1-9*
CLA41-70010	A	10	120 VAC	None	$19.95
CLF41-70010	B	.1 to 10	120 VAC	200K	21.70
CLH41-30010	B	.1 to 10	24 VDC	160K	21.70
CLB51-30010	B	.1 to 10	24 VAC	None	22.80
CLB51-70010	B	.1 to 10	120 VAC	None	23.05
CLB51-70120	B	1.2 to 120	120 VAC	None	24.45
CLF42-70010	B	.1 to 10	120 VAC	200K	21.70

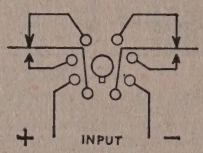
CUB SERIES KNOB-ADJUSTABLE RELAYS

Designed for delay on operate, DPDT relay and solid state delay circuit are assembled in a slightly taller case than other CU types. Timing intervals adjustable over 1 to 10 and 1 to 120 seconds. Repeatability ±3%. For 120 VAC operation. Size, 1.531″ x 1.406″ x 2.782″ max. including knob. Weight, 3.5 oz.

CUB51-70010	A	1 to 10	120 VAC	None	$18.75
CUB51-70120	A	1 to 120	120 VAC	None	20.55

*Value of external resistor required for maximum delay time.

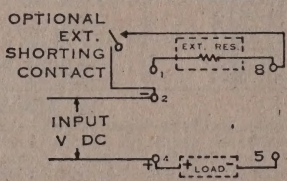
CR SERIES
KNOB-ADJUSTABLE RECYCLE TIMER



CR series recycle timer has two independent control knobs for adjusting On and Off delays from 1.8 to 180 seconds. The recycling sequence is initiated by applying power to the terminals. **Size:** 2.375″ x 3.50″ x 1.750″.

P&B Number	Time Delay Seconds	Input Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
CRB48-30180	1.8 to 180	24 VAC	$49.65	$47.17	$44.69	$39.72
CRB48-70180	1.8 to 180	120 VAC	49.65	47.17	44.69	39.72
CRD48-30180	1.8 to 180	24 VDC	43.40	41.23	39.06	34.72

JT SERIES
HERMETICALLY SEALED ADJUSTABLE RELAYS



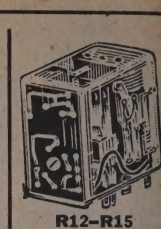
JT series measures .350″ high and is hermetically sealed in epoxy. Reset is accomplished by removal of input voltage. **Size:** 1.250″ x 1.300″ x .350″.

P&B Number	Time Delay Seconds	Input Voltage	Ext. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99
JTC55-30010	10	24 VDC	None	$11.20	$10.64	$10.08	$8.96
JTH55-30010	.1 to 10	24 VDC	887K	12.10	11.50	10.89	9.68

CS SERIES SOLID STATE VOLTAGE SENSORS

CS series voltage sensor is designed to energize and de-energize its internal relay at predetermined voltages. Desired values are either fixed or knob adjustable. Fixed sensors are factory set—cannot be changed; knob-adjustable versions allow the levels to be varied over a selected range. Voltage sensors consist of sensing circuit that turns on or off a solid state switch, energizing or de-energizing the internal relay. Both the solid state switch and DPDT relay are enclosed in molded nylon dust cover. Reverse polarity protection on DC types. Octal mounting plug. **Load Switching Relay:** 2 Form C (DPDT) rated 10 amps at 28 VDC resistive or 120 VAC resistive. **Temp. Range:** −10° C to +55° C. **Temp. Coefficient:** 0.16%/° C max. **Repeatability:** ±1% max. **Size:** 2.406″ x 1.781″ x 4.035″ (including knob and mounting plug). Weight, 8 oz. approx.

P&B Number	Pick-Up Volts	Drop-Out Volts	Type Voltage	Net 1-9*
CSJ38-30010	20–30	18–28	AC (50/60 Hz)	$34.65
CSJ38-70010	92–140	90–138	AC (50/60 Hz)	37.85
CSL38-30010	20–30	18–28	DC	30.25
CSL38-60010	92–140	90–138	DC	34.65
CSJ38-71010	105	90–103	AC (50/60 Hz)	33.55
CSL38-31010	22	16–21	DC	26.55



R12 SERIES VARIABLE TIME DELAY RELAYS

Small size DPDT with 5 amp contacts and silicon transistor circuitry. Delay time .1 to 120 seconds in three ranges; no false operation. Critical timing capacitor meets military specifications; high resolution 15-turn potentiometer. Size, 1.508″ x .735″ x 1.187″.

P&B Number R12-	Delay Sec	Coil Volts DC	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999*
2-12-X2-E1	0.1 to	12	$22.50	$20.25	$18.00	$15.75	$14.63
2-24-X2-E1	2.0	24	22.50	20.25	18.00	15.75	14.63
30-12-X2-E1	1.0 to	12	23.10	20.79	18.48	16.17	15.02
30-24-X2-E1	30	24	23.10	20.79	18.48	16.17	15.02
120-12-X2-E1	5.0 to	12	24.95	22.46	19.96	17.47	16.22
120-24-X2-E1	120	24	24.95	22.46	19.96	17.47	16.22

R13, 14, 15 & 16 FIXED AND ADJUSTABLE RELAYS

R13 SERIES
Fixed time delay relays available in 6 timing ranges from 1 to 300 seconds. Operate with 180 mW of DC power. Designed for delay on operate and fast recycle time. Shock rated at 10 g. operating and 25 g. mechanical.

R14 SERIES
Fixed or externally adjustable time delay relay available in 6 timing ranges from 0.25 to 600 seconds. The coil is polarity protected. Shock rated at 15 g. operating and 30 g. mechanical. R14A is an interval timer.

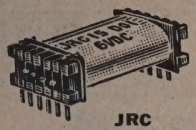
R15 SERIES
AC operated, fixed or externally adjustable time delay relay available in five timing ranges from 0.5 to 300 seconds. Shock rated at 15 g. operating and 30 g. mechanical. R15A is an interval timer.

R16 SERIES
Available in the timing range from 2 to 30 seconds. Relay and timing components are mounted on glass epoxy circuit board having quick-connect termination.

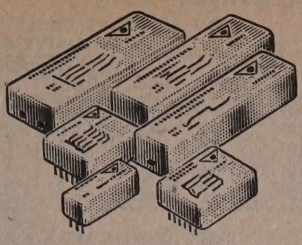
P&B Number	Delay Sec.	Input Volts	Contacts*	Net Ea. 1-9
R13-1F-24-X2-E1	1.0	24 DC	DPDT-5A	$13.45
R13-1F-24-X4-E1	1.0	24 DC	4PDT-5A	15.10
R13-5F-24-X2-E1	5.0	24 DC	DPDT-5A	13.45
R13-5F-24-X4-E1	5.0	24 DC	4PDT-5A	15.10
R13-10F-12-X4-E1	10.0	12 DC	4PDT-5A	15.10
R13-10F-24-X2-E1	10.0	24 DC	DPDT-5A	13.45
R13-10F-24-X4-E1	10.0	24 DC	4PDT-5A	15.10
R13-60F-48-Y2-E1	60.0	48 DC	DPDT-2A	15.15
R13-120F-12-X4-E1	120.0	12 DC	4PDT-5A	17.65
R13-300F-12-X4-E1	300.0	12 DC	4PDT-5A	18.85
R13-300F-24-X4-E1	300.0	24 DC	4PDT-5A	18.85
R14-2A-12-X2-E1	.25–2	12 DC	DPDT-5A	18.05
R14-2A-12-X4-E1	.25–2	12 DC	4PDT-5A	19.50
R14-30A-24-X2-E1	.5–30	24 DC	DPDT-5A	18.95
R14-30A-24-X4-E1	.5–30	24 DC	4PDT-5A	20.45
R14-120A-24-X2-E1	5–120	24 DC	DPDT-5A	19.90
R14-120A-24-X4-E1	5–120	24 DC	4PDT-5A	21.30
R14A-30A-24-X4-E1	.5–30	24 DC	4PDT-5A	21.55
R14A-300A-12-X4-E1	10–300	12 DC	4PDT-5A	23.70
R14A-300A-24-X4-E1	10–300	24 DC	4PDT-5A	23.70
R14A-600A-24-X4-E1	30–600	24 DC	4PDT-5A	24.90
R15-10A-24-W2-E1	.5–10	24 DC	DPDT-10A	20.50
R15-10A-24-W4-E1	.5–10	24 DC	4PDT-10A	22.40
R15-30A-115-X2-E1	.5–30	115 AC	DPDT-5A	20.55
R15-30A-115-X4-E1	.5–30	115 AC	4PDT-5A	21.90
R15-60A-115-Y2-E1	1–60	115 AC	DPDT-2A	20.40
R15-60A-115-Y4-E1	1–60	115 AC	4PDT-2A	21.60
R15A-30A-24-X4-E1	.5–30	24 DC	4PDT-5A	23.00
R15A-300A-115-X4-E1	10–300	115 AC	4PDT-5A	26.10
R16-30A-24A-Y2	2–30	24 AC	DPDT-2A	10.80
R16-30A-120A-Y2	2–30	120 AC	DPDT-2A	10.80

Write for quantity discount prices. *At 28 VDC or 115 VAC, resistive.

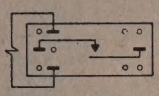
★LARGER QUANTITY PRICES ON REQUEST (SEE ANOTHER P&B PAGE FOR ACCESSORIES)



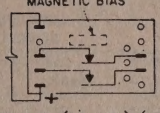
JRC



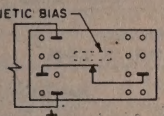
JR, JRL and JRM



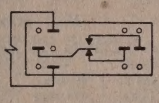
FORM A (SPST, NO)



FORM C (A+B) (SPDT)

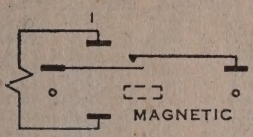


FORM B (SPST, NC)

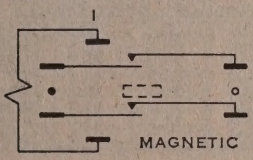


FORM C (SPDT)

JR and JRM Series



JRL 1A
SINGLE WOUND LATCH



JRL 2A
SINGLE WOUND LATCH

JRL Series

JR AND JRM SERIES DRY REED RELAYS

Fast response, reliable performance, high sensitivity and long life are characteristic of JR standard and JRM miniature relays. Specially suited for data processing applications, computer equipment, logic circuitry and various other sophisticated control circuits. Both JR and JRM relays have reed switches with either Form A (SPST-NO) or Form C (SPDT) contact configuration. Biasing with a permanent magnet changes Form A to a Form B (SPST-NC); arrangement requires that coil polarity is observed. Combining one Form A with one Form B results in a single Form C (SPDT) break-before-make. A "true" Form C (SPDT) uses a reed switch with two stationary and one movable contact (movable contact is normally closed until the coil is energized). **Size:** 2.718" l. x 0.656" h. max. (JR); 1.125" l. x 0.468" h. max. (JRM).

JR STANDARD SERIES				JRM MINIATURE SERIES			
Cavity		Coil		Cavity		Coil	
No.	Width, Inches	Power/ Capsule	Wt., Oz.	No.	Width, Inches	Power/ Capsule	Wt., Oz.
1	.687	240 mW	1.5	1	.437	180 mW	.366
2	.890	360 mW	2.0	2	.562	275 mW	.395
3	1.094	720 mW	2.5	3	.703	420 mW	.530
4	1.297	960 mW	3.0	4	.813	540 mW	.620
5	1.516	1.5 W	3.5	5	.968	720 mW	.781

JR STANDARD SERIES

P&B No.	No. Cavities	Coil Nom. V	Coil Res. Ohms	Contacts Arrangement	Contacts Rating	Net Each, Lots of* 1-9	10-24	25-99
JR1000	1	6	150	1A	15 W	$ 4.20	$3.13	$2.67
JR1001	2	6	100	2A	15 W	5.65	4.21	3.59
JR1020	1	6	150	1A	50 W	5.65	4.21	3.59
JR1040	1	6	150	1C*	10 W	9.45	7.05	6.00
JR1041	2	6	100	2C*	10 W	10.15	7.57	6.45
JR1005	1	12	600	1A	15 W	4.40	3.28	2.79
JR1006	2	12	400	2A	15 W	5.70	4.25	3.62
JR1008	4	12	150	4A	15 W	8.80	6.56	5.59
JR1025	1	12	600	1A	50 W	5.85	4.36	3.71
JR1045	1	12	600	1C*	10 W	9.45	7.05	6.00
JR1046	2	12	400	2C*	10 W	12.40	9.25	7.87
JR1063	2	12	400	1B	15 W	5.40	4.03	3.43
JR1086	3	12	200	1A+1B	15 W	7.55	5.63	4.79
JR1010	1	24	2400	1A	15 W	4.80	3.58	3.05
JR1011	2	24	1600	2A	15 W	5.95	4.44	3.78
JR1013	4	24	600	4A	15 W	8.95	6.68	5.68
JR1030	1	24	2400	1A	50 W	6.25	4.66	3.97
JR1031	2	24	1600	2A	50 W	8.85	6.60	5.62
JR1050	1	24	2400	1C*	10 W	9.40	7.01	5.97
JR1051	2	24	1600	2C*	10 W	10.50	7.83	6.67
JR1066	2	24	1600	1B	15 W	5.85	4.36	3.71
JR1088	3	24	800	1A+1B	15 W	7.70	5.74	4.89

*True Form C.

JRM MINIATURE SERIES

P&B No.	No. Cavities	Coil Nom. V	Coil Res. Ohms	Contacts Arrangement	Contacts Rating	Net Each, Lots of* 1-9	10-24	25-99
JRM1000	1	6	200	1A	10 W	$ 4.15	$3.10	$2.64
JRM1001	2	6	130	2A	10 W	5.95	4.44	3.78
JRM1003	4	6	67	4A	10 W	9.45	7.05	6.00
JRM1036	2	6	130	1B	10 W	5.30	3.95	3.37
JRM1048	3	6	86	1A+1B	10 W	6.75	5.04	4.29
JRM1006	1	12	800	1A	10 W	4.20	3.13	2.67
JRM1007	2	12	520	2A	10 W	5.95	4.44	3.78
JRM1009	4	12	268	4A	10 W	9.45	7.05	6.00
JRM1040	2	12	520	1B	10 W	5.35	3.99	3.40
JRM1041	3	12	344	2B	10 W	7.10	5.30	4.51
JRM1050	3	12	344	1A+1B	10 W	6.80	5.07	4.32
JRM1051	5	12	200	2A+2B	10 W	10.80	8.06	6.86
JRM1012	1	24	3200	1A	10 W	4.65	3.47	2.95
JRM1013	2	24	2080	2A	10 W	6.15	4.59	3.91
JRM1015	4	24	1072	4A	10 W	9.55	7.12	6.06
JRM1044	2	24	2080	1B	10 W	5.45	4.07	3.46
JRM1045	3	24	1376	2B	10 W	7.25	5.41	4.60
JRM1052	3	24	1376	1A+1B	10 W	6.90	5.15	4.38
JRM1053	5	24	800	2A+2B	10 W	10.80	8.06	6.86

MINIATURE OPEN STYLE DRY REED RELAYS

JRC SERIES

PC terminals arranged on 0.100" x 1.00" grid layout. Rhodium contacts rated 10 watts max.; 0.5 amp max. and 125 V max. for DC resistive loads. Operate speed of 1 msec typ. including bounce for pick-up; 0.5 msec for drop-out. Contact protection is recommended to assure long operating life. **Size:** 1.14" l. x .360" h. max. Wt., 0.3 to 1.0 oz. approx.

P&B No.*	Cavity No.	Cavity Width, In.	Coil Nom. V	Coil Resis. Ohms	Contact Arrangement	Net Ea., Lots of* 1-24	25-49	50-74
JRC1DA1	1	.375	6	240	1A	$5.00	$4.50	$4.25
			12	960	1A	5.00	4.50	4.25
			24	3840	1A	5.00	4.50	4.25
JRC2DB1	2	.460	12	625	1B	5.90	5.31	5.02
			24	2500	1B	5.90	5.31	5.02
JRC7DB1	2	.460	6	155	2A	6.05	5.45	5.14
			12	625	2A	6.05	5.45	5.14
			24	2500	2A	6.05	5.45	5.14
JRC15DD1	4	.660	12	320	4A	8.45	7.61	7.18
			24	1280	4A	8.45	7.61	7.18
JRC50DD1	4	.660	12	320	1A+1B	7.10	6.39	6.04
			24	1280	1A+1B	7.10	6.39	6.04

*Specify coil voltage when ordering.

JRL SERIES DRY REED LATCHING RELAYS

Reliable bi-stable relays designed for memory work. Single-wound coils switch contacts on polarity reversal. Needs no coil current to maintain contact in either position. Can be mounted on PC boards in any position; not position sensitive. **Contact Arrangement:** 1 Form A and 2 Form A rated 15 watts resistive. **Operate Time:** 1.0 msec at 25° C including bounce. **Size:** Same as JR standard series above. Weight, same as JR standard series above.

P&B No.	No. Cavities	Coil Nom. VDC	Coil Res. Ohms	Contacts Arrangement	Contacts Rating	Net Each, Lots of* 1-9	10-24	25-99
JRL1000	2	6	400	1 A	15 W	$5.90	$4.40	$3.75
JRL1001	2	12	1600	1 A	15 W	6.05	4.51	3.84
JRL1002	2	24	6400	1 A	15 W	6.20	4.63	3.94
JRL1012	3	6	300	2 A	15 W	7.70	5.74	4.89
JRL1013	3	12	1200	2 A	15 W	7.80	5.82	4.95

★LARGER QUANTITY PRICES ON REQUEST

JM SERIES MERCURY-WETTED CONTACT RELAYS

JM1 119 11

JMS 5040 62

Reservoir of mercury and contact assembly are hermetically sealed under high pressure hydrogen atmosphere to do away with contact chatter and bounce. Make or break is positive every time. Capsule used in JMF, JMF2 (2 capsules), JML and JMS relays has a SPDT, break-before-make (Form C), non-bridging contact arrangement. Each capsule used in JM1–JM4, JMD and JMP relays has a SPDT, make-before-break (Form D), bridging contact arrangement. JMF, JMF2, JML, JMP and JMS series achieve a high rate of sensitivity by factory-adjusted magnet biasing. Upright mounting required, but deviation from upright up to 30° causes only minor deviation in operating characteristics. **Contact Ratings:** JMF, JMF2, JML and JMS 500 volts max. and 2 amps max., with contact protection unless in a low level circuit. Details of a simple protection circuit consisting of resistor and capacitor in series are included with each relay. JM1 thru JM4, JMD and JMP 500 volts max. and 5 amps max., 250 VA max. Octal style mounting except Fig. 41, 14-pin miniature plug; JMD, JMF, JMF2 and JMS are designed for printed circuit board mounting on 0.200″ grid spacing. Sizes given are overall.

P&B Capsule	Size, Inches Dia. x H.	P&B Capsule	Size, Inches W. x D. x H.
JM1	1.105 x 3.196	JMD	0.750 x 0.750 x 3.190
JM2, JM3	1.531 x 3.937	JMF	0.625 x 0.625 x 2.062
JM4	1.687 x 3.562	JMF2	1.120 x 0.78 x 2.07
JML	1.234 x 3.218	JMS	0.625 x 0.625 x 2.062
JMP	1.110 x 3.665		

JMS SENSITIVE SERIES IN PC MODULE
40 mW SINGLE-SIDE-STABLE, SINGLE-WOUND COIL

Capsule	Coil and Terminal*	Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JMS	1070 61	34	32	7.7	$15.20	$11.34	$9.65
JMS	1130 61	620	7	33	15.25	11.38	9.68
JMS	1160 61	2430	3.6	65	15.45	11.53	9.81

JML SENSITIVE SERIES
SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JML	1061 81	40	9.75	1.68	$16.45	$12.27	$10.45
JML	1110 81	350	3.56	.61	16.45	12.27	10.45
JML	1160 81	1000	2.21	.38	16.45	12.27	10.45
JML	1190 81	2500	1.43	.17	17.55	13.09	11.14
JML	1200 81	4000	1.25	.25	17.55	13.09	11.14
JML	1240 81	11000	.72	.12	17.55	13.09	11.14
JML	1260 81	25000	.52	.09	18.35	13.69	11.65

BI-STABLE

Capsule	Coil and Terminal*	Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JML	5200 81	4000	+0.53	−0.53	$17.55	$13.09	$11.14
JML	5430 82	(1) 1100 (2) 1100	+1.76	−1.76	18.30	13.65	11.62

JMF SENSITIVE SERIES IN PC MODULE
SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JMF	1070 61	450	12.9	2.1	$13.30	$ 9.92	$8.45
JMF	1080 61	675	11.6	1.9	13.30	9.92	8.45
JMF	1120 61	1425	8.4	1.4	13.30	9.92	8.45
JMF	1150 61	2400	7.8	1.3	13.30	9.92	8.45
JMF	1160 61	4000	4.0	.67	13.95	10.41	8.86

JMF2 DUAL-CAPSULE SENSITIVE SERIES
SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JMF2	1000 71	130	3 VDC	.5 VDC	$25.45	$18.99	$16.16
JMF2	1001 71	520	6 VDC	1 VDC	25.45	18.99	16.16
JMF2	1002 71	2200	12 VDC	2 VDC	25.45	18.99	16.16

JMP POLARIZED SERIES
SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JMP	1160 11	1000	5.60	.40	$21.55	$16.08	$13.68
JMP	1200 11	4000	2.96	.24	23.10	17.23	14.67

JMD SERIES IN PC MODULE
SINGLE CAPSULE, SPDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Max. Volts at 35° C	Net Each, Lots of 1-9	10-24	25-99
JMD	1090 63	450	33.5	30	$15.95	$11.90	$10.13

JM1 TO JM4 SERIES
SINGLE CAPSULE, SPDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JM1	106 12	40	67.7	9.0	$19.85	$14.81	$12.60
JM1	109 12	130	38.8	16.1	19.85	14.81	12.60
JM1	112 11	500	20.1	31.6	19.85	14.81	12.60
JM1	114 11	700	20.0	37.4	19.85	14.81	12.60
JM1	114 12	700	20.0	37.4	19.85	14.81	12.60
JM1	118 11	2500	10.1	70.7	20.20	15.07	12.83
JM1	119 11	4000	8.1	89.5	10.10	10.10	10.10
JM1	120 11	7000	6.0	117.0	20.95	15.63	13.30
JM1	121 11	11K	5.0	148.0	20.95	15.63	13.30
JM1	123 11	25K	3.6	224.0	20.95	15.63	13.30

TWO CAPSULES, DPDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JM2	104 22	50	110.0	12.25	$32.25	$24.06	$20.48
JM2	106 21	140	66.5	20.5	32.25	24.06	20.48
JM2	109 22	315	44.0	30.7	32.25	24.06	20.48
JM2	110 22	500	34.8	38.7	32.25	24.06	20.48
JM2	111 22	700	30.5	45.8	32.25	24.06	20.48
JM2	112 22	1250	22.1	61.2	32.25	24.06	20.48
JM2	115 21	5000	11.3	122.0	32.25	24.06	20.48
JM2	115 22	5000	11.3	122.0	32.25	24.06	20.48

THREE CAPSULES, 3PDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JM3	109 31	315	44.0	30.7	$41.70	$31.11	$26.48
JM3	110 31	500	34.8	38.7	41.70	31.11	26.48
JM3	115 31	5000	11.3	122.0	41.70	31.11	26.48

FOUR CAPSULES, 4PDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics: Resis., Ohms (± 10%)	Must Operate mADC	Must Release mADC	Net Each, Lots of 1-9	10-24	25-99
JM4	110 41	390	42.0	37.0	$53.70	$40.06	$34.10

*Last two digits indicate termination diagram figure, e.g., JML 1061 **81**, see Figure 81; JM1 106 **12**, see Figure 12.

TERMINATION DIAGRAMS

Figure 11

Figure 12

Figure 21

Figure 22

Figure 61

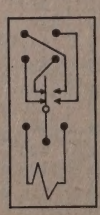


Figure 63

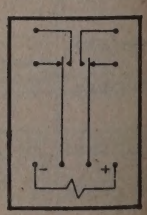


Figure 71

Figure 31

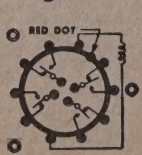


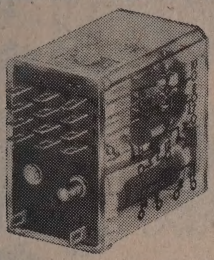
Figure 41

Figure 81

Figure 82

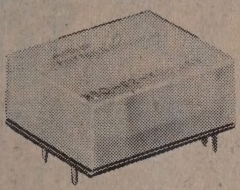
GENERAL PURPOSE RELAYS

R10S Series relays are very sensitive, current-actuated DC relays for direct drive by CMOS, DTL, TTL, ECL, and HTL. U.L. and CSA approvals are pending. Available in solder (E1) and PC board (E2) terminations. Weight is .8 to 1.4 oz.



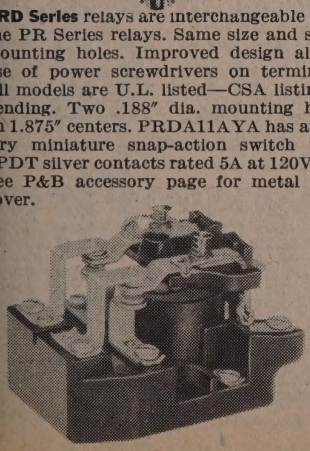
R10-E6 Series is a standard R10-E1 (solder terminals) fitted with a bracket on the narrow side of the case for chassis mounting. The bracket has one #6-32 x .375″ stud and one locating tab on .437″ centers.

R50-Y1 and Y2 Series relays seat .425″ high for use on printed-circuit boards spaced as close as 0.6″ center-to-center. Pickup is at approximately 75% of rated coil voltage; dropout is 5% minimum. All models have a molded polyester case and gold-plated PC terminals spaced on a .1″ grid.



CG Series: Relays combined with a CMOS integrated circuit for delay on operate or interval on. Relay has DPDT contacts rated 10A at 120VAC or 5A at 240VAC resistive. Knob adjustable delay time provided by the IC network is not normally affected by voltage transients encountered in industrial applications. Contacts will not transfer if timing cycle is momentarily interrupted. Weight is approximately 8 oz. Measures 1.781″ x 2.406″ x 2.937″ h.

PRD Series relays are interchangeable with the PR Series relays. Same size and same mounting holes. Improved design allows use of power screwdrivers on terminals. All models are U.L. listed—CSA listing is pending. Two .188″ dia. mounting holes on 1.875″ centers. PRDA11AYA has auxiliary miniature snap-action switch with SPDT silver contacts rated 5A at 120VAC. See P&B accessory page for metal dust cover.



SENSITIVE RELAY—1 AMP TYP. (2 AMPS MAX.)

P&B Number	Contacts	Coil	Net Each 1-9	10-49	50-99	100-499
R10S-E1-Y1-JJ1.0K	SPDT	1.0K, 2.3 mA	$4.60	$4.14	$3.68	$3.22
-JJ2.5K	SPDT	2.5K, 1.4 mA	4.60	4.14	3.68	3.22
-JJ5.0K	SPDT	5.0K, 1.0 mA	5.60	5.04	4.48	3.92
R10S-E1-Y2-JJ1.0K	2PDT	1.0K, 3.1 mA	4.60	4.14	3.68	3.22
-JJ2.5K	2PDT	2.5K, 2.0 mA	4.60	4.14	3.68	3.22
-JJ5.0K	2PDT	5.0K, 1.4 mA	5.60	5.04	4.48	3.92
R10S-E1-Y4-JJ1.0K	4PDT	1.0K, 4.5 mA	5.00	4.50	4.00	3.50
R10S-E2-Y1-JJ1.0K	SPDT	1.0K, 2.3 mA	4.60	4.14	3.68	3.22
-JJ2.5K	SPDT	2.5K, 1.4 mA	4.60	4.14	3.68	3.22
-JJ5.0K	SPDT	5.0K, 1.0 mA	5.60	5.04	4.48	3.92
R10S-E2-X2-JJ2.5K	2PDT	2.5K, 2.0 mA	4.60	4.14	3.68	3.22
R10S-E2-Y4-JJ1.0K	4PDT	1.0K, 4.5 mA	5.00	4.50	4.00	3.50

5 AMPS TYP. (7.5 AMPS MAX.)

R10-E6-X2-V52	2PDT	6 VDC	$4.40	$3.96	$3.52	$3.08
-V185	2PDT	12 VDC	4.40	3.96	3.52	3.08
-V700	2PDT	24 VDC	4.40	3.96	3.52	3.08
-115V	2PDT	115 VAC	7.00	6.30	5.60	4.90
-X4-V185	4PDT	12 VDC	4.95	4.46	3.96	3.47
-V700	4PDT	24 VDC	4.95	4.46	3.96	3.47
-115V	4PDT	115 VAC	8.45	7.61	6.76	5.92

2 AMPS TYP. (3 AMPS MAX.)

R10-E6-Y2-V185	2PDT	12 VDC	$4.25	$3.83	$3.40	$2.98
-V700	2PDT	24 VDC	4.25	3.83	3.40	2.98
-Y4-V185	4PDT	12 VDC	4.65	4.19	3.72	3.26
-V700	4PDT	24 VDC	4.65	4.19	3.72	3.26
R50-E2-Y1	SPDT	6, 12 VDC	$2.80	$2.52	$2.24	$1.96
		24 VDC	2.95	2.66	2.36	2.07
R50-E2-Y2	DPDT	5, 6, 12 VDC	3.70	3.33	2.96	2.59
		24 VDC	3.80	3.42	3.04	2.66
R50-E2-X1	SPDT	5, 6, 12 VDC	3.30	2.97	2.64	2.31
		24 VDC	3.45	3.11	2.76	2.42
R50S-E2-Y1	SPDT	5, 6, 12 VDC	2.70	2.43	2.14	1.86
		24 VDC	2.85	2.57	2.26	1.97
R50S-E2-Y2	DPDT	5, 6, 12 VDC	3.50	3.15	2.77	2.41
		24 VDC	3.60	3.24	2.85	2.47

DELAY ON OPERATE

P&B Number	Delay Minutes	Input Volts	Net Each 1-9	10-24	25-49	50-99
CGD38-30010M	1–10	24 DC	$55.40	$53.63	$49.86	$44.32
CGD38-30050M	5–50	24 DC	55.40	52.63	49.86	44.32
CGD38-30100M	10–100	24 DC	55.40	52.63	49.86	44.32

INTERVAL ON

CGB38-79010M	1–10	120 AC	$58.40	$55.48	$52.56	$46.72
CGB38-79050M	5–50	120 AC	58.40	55.48	52.56	46.72
CGB38-79100M	10–100	120 AC	58.40	55.48	52.56	46.72
CGD38-39010M	1–10	24 DC	55.40	52.63	49.86	44.32
CGD38-39050M	5–50	24 DC	55.40	52.63	49.86	44.32
CGD38-39100M	10–100	24 DC	55.40	52.63	49.86	44.32

AC RELAYS

P&B Number	Contacts	6, 12, 24, or 120 VAC Net Each 1-24	25-50	51-99	100-249	240 VAC Net Each 1-24	25-50	51-99	100-249
PRD1AYO*	SPST-NO	$5.60	$5.32	$5.04	$4.20	.....	.....	.....	.....
PRD3AYO§	SPST-NO-DM	5.70	5.42	5.13	4.28	$6.30	$5.99	$5.67	$4.73
PRD5AYO§	SPDT	5.95	5.65	5.36	4.46	6.60	6.27	5.94	4.95
PRD7AGO#	DPST-NO	7.05	6.70	6.35	5.29	.....	.....	.....	.....
PRD7AYO§•	DPST-NO	6.70	6.37	6.03	5.03	7.30	6.94	6.57	5.48
PRD11AGO#	DPDT	9.20	8.74	8.28	6.90	.....	.....	.....	.....
PRD11AYO§	DPDT	8.80	8.36	7.92	6.60	9.40	8.93	8.46	7.05
PRDA11AYA†	DPDT & SPDT	12.45	11.83	11.21	9.34	13.10	12.45	11.79	9.83

DC RELAYS

		6, 12, or 24 VDC				110 VDC			
PRD3DYO	SPST-NO-DM	$5.70	$5.42	$5.13	$4.28	$6.55	$6.22	$5.90	$4.91
PRD5DYO	SPDT	5.95	5.65	5.36	4.46	6.80	6.46	6.12	5.10
PRD7DYO	DPST-NO	6.75	6.41	6.08	5.06	9.20	8.74	8.28	6.90
PRD11DYO	DPDT	8.80	8.36	7.92	6.60	9.60	9.12	8.64	7.20

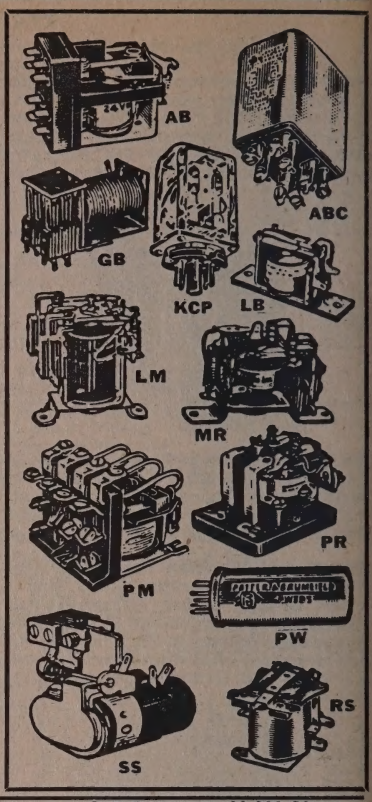
*24 VAC & 120 VAC models only. †No 6 VAC model. §208 VAC model also available; same price as 240 VAC model. #120 VAC model only. •Also available as 480 VAC model; request prices.

SENSITIVE RELAYS

PW Series: Precision, lightweight, hermetically sealed relay for aircraft, missile applications. Withstand 10G vibration to 500 Hz. Rated 2 amps. Sensitivity, 180 mW for voltage actuated, 40 mW for current actuated models. Standard 7-pin miniature tube base mounting. Size, $1^{11}/_{16}$" x .765" dia. Weight, 1 oz.

RS Series: Small, low cost, sensitive relay for radio-sonde, light dimmer and model uses. Voltage and current actuated (60 mW sensitivity) models. Two 4-40 mtg. holes on ¾" x ⅝" diagonal centers. Bar palladium contacts rated 2 amps. Size, 1" x $1^{11}/_{16}$" x $1^{5}/_{16}$". Weight, 1½ oz.

SS Series: Ultra-sensitive, precision relay has dual series-connected coils with balanced armature on needle-point bearings for low energy circuits. May be used as a differential relay by connecting the two coils in separate circuits. Sensitivity 10 mW. Silver contacts rated 2 amps. Two 6-32 mtg. holes on $2^{1}/_{8}$" centers. Size, $1^{5}/_{16}$" x 1¾" x $1^{11}/_{16}$". Weight, 3½ oz.



P & B Number*	Contacts	Coil Voltages or Current	Net Each, Lots of* 1-24	25-50	51-99	100-249
PW5DS	SPDT	6, 12 or 24 VDC	$17.75	$16.86	$15.98	$13.31
PW5LS	SPDT	2.8 mA at 5,000 ohms	18.15	17.24	16.34	13.61
PW5LS	SPDT	2.0 mA at 10,000 ohms	19.00	18.05	17.10	14.25
RS5D	SPDT	6 VDC	6.20	5.89	5.58	4.65
RS5D	SPDT	12 VDC	6.20	5.89	5.58	4.65
RS5D	SPDT	5 mA at 2,500 ohms	6.25	5.94	5.63	4.69
RS5D	SPDT	3.5 mA at 5,000 ohms	6.55	6.22	5.90	4.91
RS5D	SPDT	2.5 mA at 10,000 ohms	7.10	6.75	6.39	5.33
SS5D	SPDT	1 mA at 10,000 ohms	26.30	24.99	23.67	19.73

*Specify coil voltage or resistance when ordering.

KCP Series: Low cost relay in clear polycarbonate case. Gold-flashed, silver contacts rated 2 amps. Sensitivity 125 mW for SP, 250 mW for DP and 375 mW for 3P models. Standard octal plug-in mount: 8-pin for KCP5 and KCP11; 11-pin for KCP14. Size, $1^{13}/_{32}$" x $1^{13}/_{32}$" x 2". Weight, 3 oz.

LB Series: Top performance, long life at low cost. Factory adjusted coil for minimum current. Silver contacts rated 5 amps. Sensitivity, 200 mW. Two 3/16" mtg. holes on $2^{7}/_{32}$" centers. Size, 1¼" x $2^{21}/_{32}$" x $1^{3}/_{8}$". Weight, 2 oz.

LM Series: Medium cost but high quality. Sensitivity 100 mW for SP, 200 mW for DP models. Tail spring adjusting screw for pull-in. Gold-flash silver contacts rated 5 amps. Two 6-32 mtg. holes on $1^{13}/_{16}$" centers. Size, $2^{3}/_{16}$" x $2^{3}/_{16}$" x 2¼". Weight, 5 oz.

P & B Number*	Contacts	Coil Resistance 2,500 Ohms Input mADC	Net Each, Lots of* 1-24	25-50	51-99	100-249	Coil Resistance 5,000 Ohms Input mADC	Net Each, Lots of* 1-24	25-50	51-99	100-249	Coil Resistance 10,000 Ohms Input mADC	Net Each, Lots of* 1-24	25-50	51-99	100-249
KCP5	SPDT	7.2	$ 8.15	$ 7.74	$7.34	$6.11	5.0	$ 8.25	$ 7.84	$7.43	$6.19	3.6	$ 8.75	$ 8.31	$ 7.88	$6.56
KCP11	DPDT	10.0	8.65	8.22	7.79	6.49	7.2	8.75	8.31	7.88	6.56	5.0	9.35	8.88	8.42	7.01
KCP14	3PDT	12.3	10.65	10.12	9.59	7.99	8.7	10.80	10.26	9.72	8.10	6.1	11.35	10.78	10.22	8.51
LB5	SPDT	9.0	5.00	4.75	4.50	3.75	6.3	5.40	5.13	4.86	4.05	4.5	5.80	5.51	5.22	4.35
LM5	SPDT	6.3	7.25	6.89	6.53	5.44	4.5	7.35	6.98	6.62	5.51	3.2	8.20	7.79	7.38	6.15
LM11	DPDT	9.0	10.50	9.98	9.45	7.88	6.3	10.60	10.07	9.54	7.95	4.5	11.50	10.93	10.35	8.63

*Specify coil resistance when ordering.

AB Series: For appliance and general purpose usage where rugged construction, long life and quiet operation are required. UL recognized and CSA listed. Silver contacts rated 10 amps. Two 8-32 mtg. holes on 1¼" ctrs. Size, $1^{15}/_{16}$" x 3" x $1^{13}/_{32}$". Weight, 5 oz.

ABC Series: Medium duty relay. With dust cover; terminals fit snap-on connectors or may be used in printed circuits using dip soldering; snap-on screw adapters are supplied. UL recognized and CSA listed. Silver contacts rated 10 amps. One 8-32 mtg. stud, ⅜" lg. and locating tab on 9/16" centers. Size, $1^{15}/_{32}$" x $2^{25}/_{32}$" x $2^{3}/_{32}$", less terminals. Weight, 7 oz.

MR Series: Medium duty relay handles small motors, transmitters, etc. Silver contacts rated 8 amps, except SPST-NO-DM models rated 10 amps. Two 5/32" dia. holes on 2¼" ctrs. for MR3 and MR11; on 2⅝" ctrs. for MR5 and MR14. Size, $2^{31}/_{32}$" x 2" x $2^{3}/_{16}$". Weight, 4 oz.

PR Series: Heavy duty with industrial screw terminals. Carry UL (File #E22575) and CSA listing; PRA11AYA, UL Component Program recognition. Silver contacts rated 25 amps except 7AG and 11AG rated 30 amps. PRA11AYA has auxiliary snap-action switch with SPDT silver contacts rated 5 amps at 120 VAC; will not fit inside cover. Use only metal dust cover #35D013. Two .188" dia. mtg. holes on 1.875" centers. Size, 2.531" x 3.375" x 2.5". Wt., 11 oz. max.

PM Series: Compact, heavy duty 4PDT type for long, dependable polyphase and heavy switching use. Screw terminals staked to phenolic front section. Silver cadmium-oxide contacts rated 25 amps at 240 VAC, 50/60 Hz resistive; 1 hp per movable arm at 120 or 240 VAC, single phase. UL and CSA listed except 480 V. Front key-hole and 2 rear-channel slots for 8-32 screws on 2" x 2½" triangular ctrs. Size, $2^{21}/_{32}$" x $3^{23}/_{64}$" x $2^{23}/_{32}$". Weight, 14 oz.

See another P & B page for accessories.

★LARGER QUANTITY PRICES ON REQUEST

POWER TYPE RELAYS

60-Hz AC RELAYS

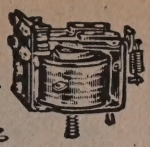
P & B Number*	Contacts	6, 12, 24 or 120 VAC Net Each, Lots of* 1-24	25-50	51-99	100-249	240 VAC Net Each, Lots of* 1-24	25-50	51-99	100-249
AB11AH†	DPDT	$ 8.15	$ 7.74	$ 7.34	$ 6.11	$ 8.70	$ 8.27	$ 7.83	$ 6.53
AB11AY†•	DPDT	7.85	7.46	7.07	5.89	8.40	7.98	7.56	6.30
ABC11AH†	DPDT	8.95	8.50	8.06	6.71	9.40	8.93	8.46	7.05
ABC11AY†•	DPDT	8.65	8.22	7.79	6.49	9.10	8.65	8.19	6.83
MR3A†•	SPST-NO-DM	6.55	6.22	5.90	4.91	.....	.....	.....	.....
MR5A	SPDT	5.85	5.56	5.27	4.39	6.55	6.22	5.90	4.91
MR11A	DPDT	7.85	7.46	7.07	5.98	8.55	8.12	7.70	6.41
MR14A	3PDT	10.30	9.79	9.27	7.73	11.00	10.45	9.90	8.25
PR1AYO*	SPST-NO	6.10	5.80	5.49	4.58	.....	.....	.....	.....
PR3AYO§	SPST-NO-DM	6.20	5.89	5.58	4.65	6.80	6.46	6.12	5.10
PR5AYO§	SPDT	6.45	6.13	5.81	4.84	7.10	6.75	6.39	5.33
PR7AGO#	DPST-NO	7.55	7.17	6.80	5.66	.....	.....	.....	.....
PR7AYO§	DPST-NO	7.20	6.84	6.48	5.40	7.80	7.41	7.02	5.85
PR11AGO#	DPDT	9.70	9.22	8.73	7.28	.....	.....	.....	.....
PRA11AYA•	DPDT-SPDT	12.95	12.30	11.66	9.71	13.60	12.92	12.24	10.20
PR11AYO§	DPDT	9.20	8.74	8.28	6.90	9.90	9.41	8.91	7.43
PR11AYO	DPDT 480 V	11.05	10.50	9.95	8.29	.....	.....	.....	.....
PM17AY	4PDT	18.40	17.48	16.56	13.80	18.50	17.58	16.65	13.88
PM17A	4PDT 480 V	19.80	18.81	17.82	14.85	.....	.....	.....	.....

DC RELAYS

P & B Number*	Contacts	6, 12 or 24 VDC Net Each, Lots of* 1-24	25-50	51-99	100-249	110 VDC Net Each, Lots of* 1-24	25-50	51-99	100-249
AB11DH‡	DPDT	$ 8.60	$ 8.17	$ 7.74	$ 6.45	$ 9.25	$ 8.79	$ 8.33	$ 6.94
AB11DY‡	DPDT	8.30	7.89	7.47	6.23	8.95	8.50	8.06	6.71
ABC11DH	DPDT	9.40	8.93	8.46	7.05	10.00	9.50	9.00	7.50
ABC11DY‡	DPDT	9.10	8.65	8.19	6.83	.....	.....	.....	.....
MR3D‡	SPST-NO-DM	6.65	6.32	5.99	4.99	.....	.....	.....	.....
MR5D	SPDT	5.75	5.46	5.18	4.31	6.65	6.32	5.99	4.99
MR11D	DPDT	7.80	7.41	7.02	5.85	8.65	8.22	7.79	6.49
MR14D‡	3PDT	10.20	9.69	9.18	7.65	11.05	10.50	9.95	8.29
PR3DYO	SPST-NO-DM	6.20	5.89	5.58	4.65	7.05	6.70	6.35	5.29
PR5DYO	SPDT	6.45	6.13	5.81	4.84	7.30	6.94	6.57	5.48
PR7DYO	DPST-NO	7.25	6.89	6.53	5.44	8.05	7.65	7.25	6.04
PR11DYO	DPDT	9.30	8.84	8.37	6.98	10.10	9.60	9.09	7.58
PM17DY	4PDT	15.85	15.06	14.27	11.89	17.30	16.44	15.57	12.98

*24 VAC and 120 VAC models only. †No 12 VAC model. ‡No 6 VDC model. §208 VAC also available; same price as 240 V models. #120 VAC model only. •No 6 VAC model.
*Specify coil voltage when ordering.

KB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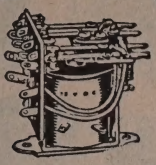
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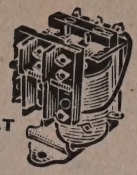
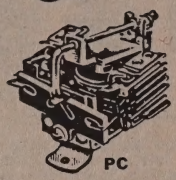

KLT

KBP

KDP

KM


PC

KUL

P & B Number*	Contacts	Coil Voltages	Net Each, Lots of* 1-24	25-50	51-99	109-249
KB17AG	4PDT	6, 12, 24 or 120 VAC	$14.45	$13.73	$13.01	$10.84
KB17AG	4PDT	240 VAC	15.50	14.73	13.95	11.63
KB23AG	6PDT	24 or 120 VAC	17.45	16.58	15.71	13.09
KB17AY	4PDT	6, 12, 24 or 120 VAC	13.80	13.11	12.42	10.35
KB17AY	4PDT	240 VAC	15.40	14.63	13.86	11.55
KB23AY	6PDT	24 or 120 VAC	17.10	16.25	15.39	12.83
KB17D	4PDT	6, 12 or 24 VDC	13.40	12.73	12.06	10.05
KB17D	4PDT	110 VDC	14.00	13.30	12.60	10.50
KB23D	6PDT	24 VDC	16.55	15.72	14.90	12.41
KB17DG	4PDT	6, 12 or 24 VDC	13.70	13.02	12.33	10.28
KB17DG	4PDT	110 VDC	14.25	13.54	12.83	10.69
KB23DG	6PDT	24 VDC	16.95	16.10	15.26	12.71
KB23DG	6PDT	110 VDC	17.50	16.63	15.75	13.13
KBP17A	4PDT	120 VAC	22.65	21.52	20.39	16.99
KBP17AG	4PDT	120 VAC	22.95	21.80	20.66	17.21
KBP17D	4PDT	24 VDC	22.65	21.52	20.39	16.99
KBP17DG	4PDT	12 or 24 VDC	23.10	21.95	20.79	17.33
KBP20A	5PDT	120 VAC	26.15	24.84	23.54	19.61
KBP20AG	5PDT	120 VAC	26.45	25.13	23.81	19.84
KBP20DG	5PDT	12 or 24 VDC	26.20	24.89	23.58	19.65
KM5D	SPDT	6, 12 or 24 VDC	7.35	6.98	6.62	5.51
KM11D	DPDT	6, 12 or 24 VDC	8.65	8.22	7.79	6.49
KM14D	3PDT	6, 12 or 24 VDC	10.55	10.02	9.50	7.91
KT11A	DPDT	6 or 120 VAC	5.50	5.23	4.95	4.13
KT11D	DPDT	6 or 12 VDC	5.35	5.08	4.82	4.01
KUL5A15S	SPDT	120 VAC	8.20	7.79	7.38	6.15
KUL5D15S	SPDT	24 VDC	6.45	6.13	5.81	4.84
KUL11A15S	DPDT	12, 24 or 120 VAC*	9.15	8.69	8.24	6.86
KUL11D15S	DPDT	12 or 24 VDC	7.15	6.79	6.44	5.36
PC11A	DPDT	6, 12, 24 or 120 VAC	8.95	8.50	8.06	6.71
PC17A	4PDT	24 or 120 VAC	15.70	14.92	14.13	11.78
PC11D	DPDT	6, 12 or 24 VDC	8.50	8.08	7.65	6.38
PC17D	4PDT	24 VDC	14.50	13.78	13.05	10.88

*Diodes included inside clear polycarbonate dust cover. *Specify coil voltage when ordering.

SPECIAL PURPOSE RELAYS

KB (Open) and KBP (Enclosed) Series: Latching relay with release and trip coils at same voltage. One sets the latch and the other releases. Operates on momentary impulse to either coil. Silver contacts are rated 5 amps; suffix "G" indicates silver-cadmium contacts on movables rated at 10 amps. AC open relays with 5 amp contacts are recognized under UL Component Program and CSA listed. Type **KB** are open relays with two .156" dia. holes on 1.375" centers. Size, 1.812" x 3.22" x 2.13". Wt., 6 oz. **Type KBP** enclosed in polypropylene dust cover with 20-pin octal-type plugs for socket mounting. UL component recognition does not apply. Size, 1.781" x 2.406" x 3.56". Weight, 4 oz.

KM Series: Subminiature relay for use where size and weight are critical factors. Silver contacts rated 2 amps. Solder lug terminals. Has 2-56 tapped hole and locating half-punch for mtg. Size, 1 1/16" x 1 1/8" x 5 3/4". Weight, .58 oz.

KT Series: Antenna switching relay has glass base insulation for minimum RF loss to switch 300-ohm line. Gold-flashed silver contacts rated 5 amps. Single 6-32 mtg. stud. Size, 1 15/16" x 1 3/16" x 1 1/16". Wt., 1 1/2 oz.

KUL Series: Small magnetic latching relay; continuous duty for applications requiring memory stability such as machine tools, process controls, etc. Recognized under UL Component Program and CSA approved. Silver cadmium contacts rated 10 amps at 28 VDC resis. or 120 VAC, 80% PF. Use KU sockets for mtg. Size, 1.406" x 1.531" x 2.156". Weight, 3.4 oz.

PC Series: Single coil impulse latching relay for on-off and current reversal switching on alternate pulses. Gold-flashed silver cadmium oxide contacts rated 5.0 amps. Two 5/32" mtg. holes on 2 5/8" centers. Size, 2 3/64" x 2 1/16" x 2 31/32". Weight, 5 oz.

GENERAL PURPOSE TELEPHONE RELAYS

KHP

KHS

KHU

P & B Number*	Coil Voltages	Net Each, Lots of* 1-24	25-50	51-99	100-249
KHP17A11	6, 12, 24 VAC	$ 6.50	$ 6.18	$ 5.85	$ 4.88
KHP17A11	120 VAC	7.05	6.70	6.35	5.29
KHP17A12	120 VAC	7.25	6.89	6.53	5.44
KHP17A13	120 VAC	18.20	17.29	16.38	13.65
KHP17D11	6, 12, 24 VDC	5.90	5.61	5.31	4.43
KHP17D11	48 VDC	6.15	5.84	5.54	4.61
KHP17D11	90, 110 VDC	6.90	6.56	6.21	5.18
KHP17D12	12, 24 VDC	6.10	5.80	5.49	4.58
KHP17D12	48 VDC	6.30	5.99	5.67	4.73
KHP17D12	110 VDC	7.05	6.70	6.35	5.29
KHP17D13	24 VDC	17.05	16.20	15.35	12.79
KHP17D13	48 VDC	17.25	16.39	15.53	12.94
KHP17D16	12, 24 VDC	8.40	7.98	7.56	6.30
KHS17A11	6, 12, 24 VAC	11.60	11.02	10.44	8.70
KHS17A11	120 VAC	11.75	11.16	10.58	8.81
KHS17A12	120 VAC	11.80	11.21	10.62	8.85
KHS17D11	6, 12, 24 VDC	19.75	18.76	17.78	14.81
KHS17D11	110 VDC	10.40	9.88	9.36	7.80
KHS17D12	24 VDC	11.55	10.97	10.40	8.66
KHS17D13	24 VDC	10.40	9.88	9.36	7 80
KHU17A11	6, 12, 24 VAC	18.40	17.48	16.56	13.80
KHU17A11	120 VAC	6.50	6.18	5.85	4.88
KHU17D11	6, 12, 24 VDC	7.05	6.70	6.35	5.29
KHU17D11	48 VDC	5.90	5.61	5.31	4.43
KHU17D11	90, 110 VDC	6.15	5.84	5.54	4.61
KHU17A12	120 VAC	6.90	6.56	6.21	5.18
KHU17D12	24 VDC	6.10	5.80	5.49	4.58
KHU17D12	110 VDC	7.05	6.70	6.35	5.29
KHU17D16	12, 24 VDC	8.45	8.03	7.61	6.34

*Specify coil voltage when ordering.

SERIES KHP, KHS (SEALED) AND KHU (ENCLOSED) TYPES

Small, rugged 4PDT, AC and DC relays. KHU, clear polycarbonate and KHP has nylon dust cover; KHS is hermetically sealed in metal enclosure. For data processing and computer applications. Contacts available: Suffix **11** denotes gold-flashed silver rated 3 amps, 30 VDC or 120 VAC, resistive; suffix **12** denotes silver-cadmium oxide rated 3 amps; suffix **13** gold alloy contacts for low level to 1.0 amp applications; suffix **16** gold overlay on silver, bifurcated contacts rated 1 amp at 30 VDC, resistive, or 120 VAC. Mount by solder terminals and 3-48 stud 5/16" lg. Adaptable to sockets (listed on another page). Type KHU is recognized under UL Component Program. KHS relays should not have frames grounded without consulting P & B.

See another P & B page for accessories.

★LARGER QUANTITY PRICES ON REQUEST

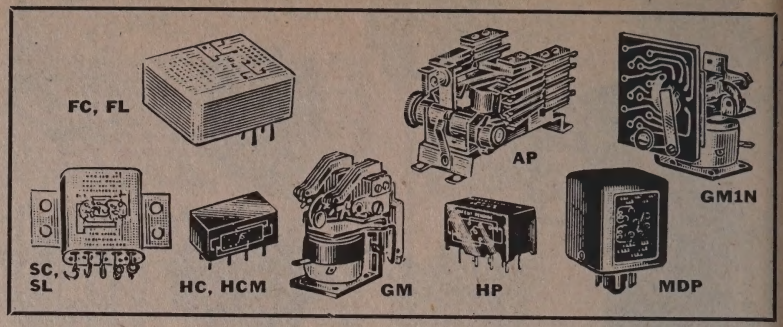
HIGH-RELIABILITY MINIATURE RELAYS

Temperature Range, −65° C to +125° C.

FC Series: Conventional, miniature relay lies flat on printed circuit board. Takes 150G shock, 400G linear acceleration, and 30G vibration to 2000 Hz. Hermetically welded; bifurcated contacts. Plug-in terminals on 0.2″ grid. Meets MIL-R-5757, and also MSFC-SPEC-339. Size, 1.1″ x .925″ x .485″ h. Contacts, 3 amps. Weight, .75 oz.

FL Series: Dual coil, miniature latching type. Same as above except in operation. Each coil pulses alternately (per polarity), or from a reversing (polarized) source connecting the coils in series. Stays latched without coil power to reduce drain.

SC Series: Miniature permanent magnet relay has high shock and vibration resistance. Features single coil action and conforms to standard min. coil operation except polarized connections because of magnetic circuit. Positive terminal marked with red dot. Contacts rated at 2 amps. Size, .795″ x .359″ x 1.1″. Mounting: —D, plug-in terminals for printed circuit or receptacle; —DA shoulder flanges with two .104″ x .136″ holes on 1.062″ ctrs.; —DB, welded bracket with four .125″ holes on 1.062″ x .281″ ctrs.; —DC, two 4-40 NC-2A threaded studs on .488″ x .220″ diagonal ctrs.; —DD, plain case. All except —D have hook-end solder terminal headers. SCG11D has plug-in terminals on .2″ grid. Wt., ¾ oz.



SL Series: Dual coil, miniature magnetic latching relay for low power, high shock and vibration resistance. Requires connections to both coils; may be connected in series for polar operation, reverse polarity to reset. Operates on 1 watt, 3 msec pulse to either coil. Size, .795″ x .359″ x 1.1″. Mtg. type and dimensions same as SC Series. Contacts rated at 2 amps. Weight, 2 oz.

HC Series: Miniature, non-polarized, non-latching relay hermetically welded in half-size crystal case. High-torque motor structure and bifurcated, gold-plated silver DPDT contacts offer positive performance in low-level applications. Contacts rated dry circuit to 2 amps at 28 VDC resistive. Meets or exceeds applicable sections of MIL-R-5757, and complies with MSFC-SPEC-339. HC11D has plug-in, plain case; HC11DA has hook-end solder terminals and shoulder brackets; HC11DB has hook-end solder terminals and flat mounting plate with two holes. Size (plain case), 0.8″ x 0.4″ sq., seated. Wt., ½ oz.

HCM Series: Military version of HC Series. Meets or exceeds appropriate sections of MIL-R-5757. Designed for hostile environments found in aircraft applications and for ground support equipment. Straight pins or hook solder terminals. Wt., ½ oz. without bracket.

HP Series: Non-polarized, non-latching half-size relay. Same structure, contact material as HC Series but enclosed in high impact dust cover. Terminals on .200″ grid for plug-in or PC board. Ideal for TV cameras, desk-top computers, dictating, etc. DPDT contacts rated low level to 2 amps. Continuous duty coils rated 5 msec operate, 3 msec release max. Size, .49″ x .88″ x .48″ max. Wt., 0.3 oz.

HPS Series: Hermetically sealed version of HP; uses standard HP socket. For reliable performance in logic circuit applications or where prolonged submersion of PC boards in cleaning solvents may be required. Size, .810″ x .410″ x .410″. Wt., ¼ oz.

P & B Number*	Contacts	Coil Voltages	Net Each, Lots of* 1-24	25-50	51-99	100-249
AP11A	DPDT	6, 12, 24 or 120 VAC	$16.20	$15.39	$14.58	$12.15
AP11A	DPDT	240 VAC	16.30	15.49	14.67	12.23
AP17A	4PDT	24 or 120 VAC	22.00	20.90	19.80	16.50
AP11D	DPDT	6, 12 or 24 VDC	16.05	15.25	14.45	12.04
AP11D	DPDT	110 VDC	16.45	15.63	14.81	12.34
AP17D	4PDT	12 or 24 VDC	21.10	20.05	18.99	15.83
AP17D	4PDT	110 VDC	21.50	20.43	19.35	16.13
FC11D	DPDT	6, 12 or 24 VDC	30.25	28.74	27.23	22.69
FL11D	DPDT	6, 12 or 24 VDC	30.70	29.17	27.63	23.03
SC11D	DPDT	6, 12 or 24 VDC	30.65	29.12	27.59	22.99
SC11DA	DPDT	12 or 24 VDC	31.75	30.16	28.58	23.81
SC11DB	DPDT	6, 12 or 24 VDC	31.40	29.83	28.26	23.55
SC11DC	DPDT	24 VDC	31.65	30.07	28.49	23.74
SC11DD	DPDT	24 VDC	30.90	29.36	27.81	23.18
SCG11D	DPDT	24 VDC	35.30	33.54	31.77	26.48
SC7141	DPDT	26.5 VDC*	36.40	34.58	32.76	27.30
SL11D	DPDT	12 or 24 VDC	32.10	30.50	28.89	24.08
SL11DA	DPDT	24 VDC	33.05	31.40	29.75	24.79
SL11DB	DPDT	6, 12 or 24 VDC	32.70	31.07	29.43	24.53
SL11DC	DPDT	24 VDC	32.95	31.30	29.66	24.71
SLG11D	DPDT	24 VDC	33.30	31.64	29.97	24.98
GM11A	DPDT	24 or 120 VAC	15.60	14.82	14.04	11.70
GM11AL11	DPDT/DPDT	120 VAC	19.50	18.53	17.55	14.63
GM11D	DPDT	12 or 24 VDC	14.80	14.06	13.32	11.10
GM11D	DPDT	110 VDC	15.00	14.25	13.50	11.25
GM1N10A	SP-10 pos.	120 VAC	13.85	13.16	12.47	10.39
GM1N12A	SP-12 pos.	120 VAC	13.25	12.59	11.93	9.94
GM1N10D	SP-10 pos.	24 VDC	13.80	13.11	12.42	10.35
GM1N12D	SP-12 pos.	24 VDC	13.00	12.35	11.70	9.75
HC11D	DPDT	24 VDC	29.75	28.26	26.78	22.31
HC11DA	DPDT	24 VDC	30.85	29.31	27.77	23.14
HC11DB	DPDT	24 VDC	30.85	29.31	27.77	23.14
HCM11D	DPDT	24 VDC	22.60	21.47	20.34	16.95
HCM11DA	DPDT	24 VDC	23.60	22.42	21.24	17.70
HCM11DB	DPDT	24 VDC	23.60	22.42	21.24	17.70
HP11D	DPDT	6, 12 or 24 VDC	9.80	9.31	8.82	7.35
HP11D	DPDT	48 VDC	10.45	9.93	9.41	7.84
HPS11D	DPDT	12 or 24 VDC	11.85	11.26	10.67	8.89

*MIL-R-5757/10C-141 or RY4NA3B3L01. **"Specify coil voltage when ordering.**

SPECIAL PURPOSE RELAYS

AP Series: Ratchet, impulse relay for reliability in on-off or reversing action for alternate operations of the control lead. Positive ratchet at all speeds on impulses as short as 60 milliseconds. Intermittent operation only. Silver contacts rated 5 amps. Three ⅛″ mtg. holes on 3⅜″ x 1⅛″ triangular ctrs.; 2⅛″ x 3¾″ x 2¼″; 7 oz.

GM Series: Versatile impulse/sequencing relay for single-coil latching applications. The 2 Form C contact arrangement is switched alternately by cams. Positive switching is by indirect action during drop-out of the armature. Can also be furnished with additional 2 Form C auxiliary contacts, suffix "L", operated directly by the armature. Contacts rated at 3 amps. Available with AC or DC coils. AC version operates on a 50% coil duty cycle (5 min. max.). Mounting: 8-32 tapped core with a locating boss. Size, 1.437″ x 2.03″ x 2.07″ max. Wt., with aux contacts, 4¾ oz.; without, 4 oz.

GM1N Series: Relays employing basic structure of GM Series with unidirectional printed circuit boards in choice of 10 or 12 steps. Board is attached to ratchet shaft extension. Movable contact arm advances one position each time armature drops out. Contacts rated at .25 amp. Size, 1.875″ x 2″ x 2.312″. Wt., approx. 4 oz.

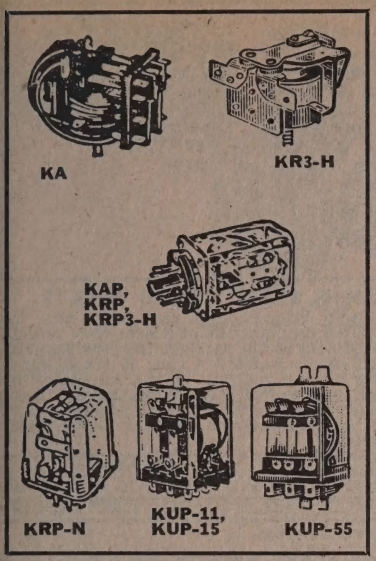
See another P & B page for accessories

T10 SERIES PC RELAY

Printed circuit board mounting on 0.5″ centers. Has permissive-made contacts for low bounce and long life. Operate and release times are 15ms, including bounce. Size: 1.52″ x 1.46″ x .375″ height. Weight: 1 oz. approx.

P & B No.	Coils Input	Coils Res.	Contacts Power	Contacts Arrang.	Contacts Amp*	Net Each, Lots of 1-9	10-49	50-99
T10-E2-Y4	6 VDC	48	750 mW	4PDT	3	$4.50	$4.05	$3.60
T10-E2-Y4	12 VDC	190	760 mW	4PDT	3	4.50	4.05	3.60
T10-E2-Y4	24 VDC	769	750 mW	4PDT	3	4.50	4.05	3.60
T10-E2-Y4	48 VDC	3050	750 mW	4PDT	3	5.10	4.59	4.08

*At 30 VDC, resistive.



KA and KAP Series: Small, low cost, highly efficient relay for light power loads. All KA and KAP relays with "Y" suffix bear CSA listing and carry UL Component Recognition (File No. E22575). Continuous duty. Mechanical life 10 million operations. Contacts: Suffix **Y**, movable gold-flashed silver; stationary, silver overlay; rated 5 amps. Suffix **G**, movable contacts silver-cadmium-oxide rated 10 amps. Size and Mounting: KA, 1 15/32" x 1 11/16" x 1 27/32" with 6-32 thd. stud and locating tab on 7/16" ctrs.; wt., 2 oz. KAP, enclosed in clear polycarbonate dust cover 1 17/32" x 1 7/16" x 2 9/32" with 8- or 11-pin plug terminals; wt., 3 oz.

KR3-H Series: Small size, heavy-duty relay. Open only, SPST-NO-DM contacts. Movable carrier has twin silver-cadmium-oxide contacts rated 20 A, 120 VAC 60 Hz resis. or 28 VDC; 1 hp at 120/240 V 60 Hz. Terminals: 1/4" quick connect or solder for contacts; coil, solder only. One 6-32 mtg. stud on 7/16" ctr. Size, 1 39/64" x 1 43/64" x 1 33/64"; seated, 1 7/32" h. Weight, 2 oz.

KRP3-H Series: Same electrical specifications as KR3-H, but enclosed in clear, polycarbonate dust cover with octal plug-in base. Size, 1 17/32" x 1 7/16" x 2 9/32" h. above plug. Weight, approx. 3 oz.

KRP Series: Multi-contact arrangements in clear polycarbonate dust cover. Mounts by standard octal 8-pin plug on KRP5 and KRP11 models; 11-pin on KRP14. Gold-flashed silver contacts rated 5 amps. Size, 1 13/32" x 1 13/32" x 2" above plug. Wt., 3 oz. Suffix **G** means silver-cadmium oxide contacts on movables, rated 10 amps.

KRP-N Indicator Lamp Relay: General purpose, incorporating a lamp to indicate current or voltage in power circuit. Clear polycarbonate dust cover. Std. octal plug. Silver cadmium-oxide contacts, rated at 10 amps. Size, 1 13/32" x 1 13/32" x 2". Wt., 3 oz.

KUP Series with Suffix 15: Reliable 10-amp relay for industrial control applications. Has .187" quick connect/solder-type terminals. Enclosed in clear polycarbonate dust cover. Silver cadmium-oxide contacts assure long life. Continuous operation. Max. size, 1.531" x 1.406" x 1.906" h. seated; terminals, .316" lg.

KUP Series with Suffix 11: Same as 15 Series except silver contacts rated 5 amps.

KUP Series with Suffix 55: Same as 15 Series but has slotted flange case for direct-to-chassis mounting. Identical electrically and mechanically, except not suitable for socket mounting. Rated at 10 amps. Has .187" quick connect/solder-type terminals; .156" wide slots are on 2.90" max. mounting centers. Wt., 3 oz. All KUP Series are recognized under UL Component Program (File No. E22575).

See another P & B page for accessories.

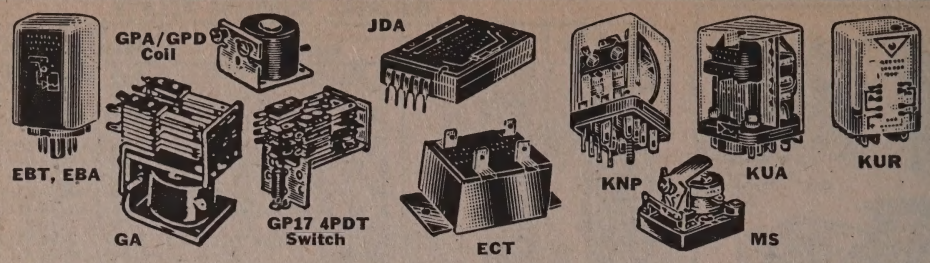
★LARGER QUANTITY PRICES ON REQUEST

GENERAL PURPOSE RELAYS

P & B Number*	Contacts	Coil Voltages	Net Each, Lots of* 1-24	25-50	51-99	100-249
KA5AG	SPDT	6, 12, 24 or 120 VAC	$ 4.50	$ 4.38	$4.05	$3.38
KA5AG	SPDT	240 VAC	5.05	4.80	4.55	3.79
KA5AY	SPDT	6, 12, 24 or 120 VAC	4.45	4.23	4.01	3.34
KA5AY	SPDT	240 VAC	5.00	4.75	4.50	3.75
KA11AG	DPDT	6, 12, 24 or 120 VAC	5.50	5.23	4.95	4.13
KA11AG	DPDT	240 VAC	5.95	5.65	5.36	4.46
KA11AY	DPDT	6, 12, 24 or 120 VAC	5.40	5.13	4.86	4.05
KA11AY	DPDT	240 VAC	5.85	5.56	5.27	4.39
KA11DY	DPDT	48 VDC	4.95	4.70	4.46	3.71
KA14AG	3PDT	6, 12, 24 or 120 VAC	6.05	5.75	5.45	4.54
KA14AG	3PDT	240 VAC	6.70	6.37	6.03	5.03
KA14AY	3PDT	6, 12, 24 or 120 VAC	5.85	5.56	5.27	4.39
KA14AY	3PDT	240 VAC	6.40	6.08	5.76	4.80
KA5DG	SPDT	6, 12 or 24 VDC	4.35	4.13	3.92	3.26
KA5DG	SPDT	110 VDC	5.10	4.85	4.59	3.83
KA5DY	SPDT	6, 12 or 24 VDC	4.30	4.09	3.87	3.23
KA5DY	SPDT	110 VDC	5.05	4.80	4.55	3.79
KA11DG	DPDT	6, 12 or 24 VDC	4.90	4.66	4.41	3.68
KA11DG	DPDT	110 VDC	5.70	5.42	5.13	4.28
KA11DY	DPDT	6, 12 or 24 VDC	4.70	4.47	4.23	3.53
KA11DY	DPDT	110 VDC	5.55	5.27	5.00	4.16
KA14DG	3PDT	6, 12 or 24 VDC	5.55	5.27	5.00	4.16
KA14DG	3PDT	110 VDC	6.35	6.03	5.72	4.76
KA14DY	3PDT	6, 12 or 24 VDC	5.35	5.08	4.82	4.01
KA14DY	3PDT	110 VDC	6.15	5.84	5.54	4.61
KAP5AG	SPDT	24 or 120 VAC	7.60	7.22	6.84	5.70
KAP11AG	DPDT	6, 24 or 120 VAC	8.50	8.08	7.65	6.38
KAP11AY	DPDT	24 or 120 VAC	8.35	7.93	7.52	6.26
KAP11AY	DPDT	240 VAC	8.85	8.41	7.97	6.64
KAP14AG	3PDT	24 or 120 VAC	10.50	9.98	9.45	7.88
KAP14AY	3PDT	24 or 120 VAC	10.35	9.83	9.32	7.76
KAP14AY	3PDT	240 VAC	10.80	10.26	9.72	8.10
KAP5DG	SPDT	24 VDC	7.45	7.08	6.71	5.59
KAP5DG	SPDT	110 VDC	8.35	7.93	7.52	6.26
KAP11DG	DPDT	24 VDC	8.45	8.03	7.61	6.34
KAP11DG	DPDT	110 VDC	9.30	8.84	8.37	6.98
KAP11DY	DPDT	12 or 24 VDC	8.30	7.89	7.47	6.23
KAP11DY	DPDT	110 VDC	9.15	8.69	8.24	6.86
KAP14DG	3PDT	24 VDC	10.45	9.93	9.41	7.84
KAP14DG	3PDT	110 VDC	11.30	10.74	10.17	8.48
KAP14DY	3PDT	12 or 24 VDC	10.25	9.74	9.23	7.69
KAP14DY	3PDT	110 VDC	11.00	10.45	9.90	8.25
KR3AH	SPST-NO-DM	12, 24 or 120 VAC	5.45	5.18	4.91	4.09
KR3DH	SPST-NO-DM	12 or 24 VDC	5.15	4.89	4.64	3.86
KR3DH	SPST-NO-DM	110 VDC	6.10	5.80	5.49	4.58
KRP3AH	SPST-NO-DM	12, 24 or 120 VAC	8.70	8.27	7.83	6.53
KRP3DH	SPST-NO-DM	12 or 24 VDC	8.45	8.03	7.61	6.34
KRP3DH	SPST-NO-DB	110 VDC	9.30	8.84	8.37	6.98
KRP5A	SPDT	6, 12, 24 or 120 VAC	7.45	7.08	6.71	5.59
KRP5AG	SPDT	6, 12, 24 or 120 VAC	7.70	7.32	6.93	5.78
KRP11A	DPDT	6, 12, 24 or 120 VAC	8.30	7.89	7.47	6.23
KRP11A	DPDT	240 VAC	8.85	8.41	7.97	6.64
KRP11AG	DPDT	6, 12, 24 or 120 VAC	8.60	8.17	7.74	6.45
KRP11AG	DPDT	240 VAC	9.15	8.69	8.24	6.86
KRP11AN	DPDT	6, 12, 24 or 120 VAC	9.85	9.36	8.87	7.39
KRP11AN	DPDT	240 VAC	10.40	9.88	9.36	7.80
KRP14A	3PDT	6, 12, 24 or 120 VAC	10.35	9.83	9.32	7.76
KRP14A	3PDT	240 VAC	10.85	10.31	9.77	8.14
KRP14AG	3PDT	6, 12, 24 or 120 VAC	10.70	10.17	9.63	8.03
KRP14AG	3PDT	240 VDC	11.30	10.74	10.17	8.48
KRP14AN	3PDT	6, 12, 24 or 120 VAC	12.00	11.40	10.80	9.00
KRP14AN	3PDT	240 VAC	12.50	11.88	51.25	9.38
KRP5D	SPDT	6, 12 or 24 VDC	7.40	7.03	6.66	5.55
KRP5D	SPDT	110 VDC	8.25	7.84	7.43	6.19
KRP5DG	SPDT	6, 12 or 24 VDC	7.60	7.22	6.84	5.70
KRP5DG	SPDT	110 VDC	8.45	8.03	7.61	6.34
KRP11D	DPDT	6, 12 or 24 VDC	8.25	7.84	7.43	6.19
KRP11D	DPDT	48 VDC	8.70	8.27	7.83	6.53
KRP11D	DPDT	110 VDC	9.10	8.65	8.19	6.83
KRP11DG	DPDT	6, 12 or 24 VDC	8.55	8.12	7.70	6.41
KRP11DG	DPDT	48 VDC	9.05	8.60	8.15	6.79
KRP11DG	DPDT	110 VDC	9.40	8.93	8.46	7.05
KRP11DN	DPDT	6, 12 or 24 VDC	9.70	9.22	8.73	7.28
KRP11DN	DPDT	110 VDC	10.60	10.07	9.54	7.95
KRP14D	3PDT	6, 12 or 24 VDC	10.25	9.74	9.23	7.69
KRP14D	3PDT	48 VDC	10.65	10.12	9.59	7.99
KRP14D	3PDT	110 VDC	11.00	10.45	9.90	8.25
KRP14DG	3PDT	6, 12 or 24 VDC	10.60	10.07	9.54	7.95
KRP14DG	3PDT	48 VDC	11.10	10.55	9.99	8.33
KRP14DG	3PDT	110 VDC	11.45	10.88	10.31	8.59
KRP14DN	3PDT	24 VDC	11.85	11.26	10.67	8.89
KUP5A15	SPDT	6, 12, 24 or 120 VAC	4.85	4.61	4.37	3.64
KUP5A15	SPDT	240 VAC	5.40	5.13	4.86	4.05
KUP5D15	SPDT	6, 12 or 24 VDC	4.65	4.42	4.19	3.49
KUP5D15	SPDT	110 VDC	5.45	5.18	4.91	4.09
KUP11A11	DPDT	120 VAC	5.70	5.42	5.13	4.28
KUP11A15	DPDT	6, 12, 24 or 120 VAC	5.90	5.61	5.31	4.43
KUP11A15	DPDT	240 VAC	6.45	6.13	5.81	4.84
KUP11D11	DPDT	24 VDC	5.15	4.89	4.64	3.86
KUP11D15	DPDT	6, 12 or 24 VDC	5.35	5.08	4.82	4.01
KUP11D15	DPDT	110 VDC	6.15	5.84	5.54	4.61
KUP14A11	3PDT	120 VAC	6.35	6.03	5.72	4.76
KUP14A15	3PDT	6, 12, 24 or 120 VAC	6.60	6.27	5.94	4.95
KUP14A15	3PDT	240 VAC	7.15	6.79	6.44	5.36
KUP14D15	3PDT	6, 12 or 24 VDC	6.10	5.80	5.49	4.58
KUP14D15	3PDT	110 VDC	6.60	6.27	5.94	4.95
KUP5A55	SPDT	120 VAC	4.85	4.61	4.37	3.64
KUP11A55	DPDT	24 or 120 VAC	5.90	5.61	5.31	4.43
KUP14A55	3PDT	6, 12, 24 or 120 VAC	6.60	6.27	5.94	4.95
KUP14A55	3PDT	240 VAC	7.15	6.79	6.44	5.36
KUP5D55	SPDT	24 VDC	4.65	4.42	4.19	3.49
KUP11D55	DPDT	6, 12 or 24 VDC	5.35	5.08	4.82	4.01
KUP11D55	DPDT	110 VDC	6.15	5.84	5.54	4.61
KUP14D55	3PDT	6, 12 or 24 VDC	6.10	5.80	5.49	4.58
KUP14D55	3PDT	110 VDC	6.60	6.27	5.94	4.95

*Specify coil voltage when ordering.

AMF | POTTER & BRUMFIELD Relays



GENERAL PURPOSE RELAYS

GA Series: Multiple-contact, voltage switching relay designed for industrial control applications. Silver contacts rated 5 A; tinned, pierced solder terminals. Mounts on 8-32 tapped core with locating boss. Size, 1.063″ x 1.719″ x 1.781″. Weight, 3½ oz.

KNP Series: Small relay designed for economizing chassis space. Recognized under UL Component Program and CSA listing for 1/10 hp at 120 VAC; 3 A at 32 VDC resistive or 3 A at 240 VAC, 80% PF. Fine silver cross bar contacts. Terminals are .110″ quick-connect/solder; sockets available separately. May be chassis mounted by 3-48 stud. In clear polycarbonate dust cover. Size, 0.980″ x 1.000″ x 1.450″ seated. Weight, 1.4 oz. approximate.

KUMP Series relays are U.L. recognized, and CSA listing is pending. The KUMP relays are identical to the KUP Series except that the contacts are silver-cadmium-oxide rated 15 A at 28 VDC or 277 VAC, 80% PF; ¼ HP, 120 VAC; ⅓ HP., 240 VAC.

POWER RELAYS

GF Series: Medium duty for industrial control applications. Similar to GA series except long contact arms have silver contacts rated 10 A at 120 VAC or 28 VDC resistive; excellent wipe or self-cleaning action. Tinned, pierced solder terminals; 8-32 tapped core with locating boss mtg. Size, 1.016″ x 2.531″ x 2.093″ max. Weight, 4.75 oz.

MOTOR STARTING

MS Series: For starting capacitor start, induction-run motors. Operates on back EMF of start winding. Armature gap can be altered to change pick-up. Recognized under UL Component Program. Two .156″ dia. mounting holes on 1.563″ centers. Contacts rated ¾ hp, fine silver; 3 hp, silver cadmium. Size, 2.063″ x 3.063″ x 2.125″. Weight, 5 oz. maximum.

SPECIAL PURPOSE

GP Series: Separate AC and DC coils to match with 2PDT or 4PDT switches. Silver contacts rated 5 amps.

P & B No.*	Contacts	Coil Voltages or Current	Net Ea., Lots of* 1-24	25-50	51-99
GA11A	DPDT	6, 12, 24 or 120 VAC	$6.15	$5.84	$5.54
GA11D	DPDT	6, 12 or 24 VDC	5.90	5.61	5.31
GA11D	DPDT	110 VDC	6.45	6.13	5.81
GA14A	3PDT	24 or 120 VAC	7.50	7.13	6.75
GA17A	4PDT	6, 12, 24 or 120 VAC	8.65	8.22	7.79
GA17A	4PDT	240 VAC	8.85	8.41	7.97
GA17D	4PDT	6, 12 or 24 VDC	7.95	7.55	7.16
GA17D	4PDT	110 VDC	8.50	8.08	7.65
GF17A	4PDT	12, 24 or 120 VAC	8.70	8.27	7.83
GF17A	4PDT	240 VAC	9.15	8.69	8.24
GF17D	4PDT	6, 12 or 24 VDC	8.70	8.27	7.83
GF17D	4PDT	110 VDC	9.30	8.84	8.37
GPA	.....	6, 12, 24 or 120 VAC	2.35	2.23	2.12
GPA	.....	240 VAC	2.85	2.71	2.57
GPD	.....	6, 12 or 24 VDC	2.85	2.71	2.57
GPD	.....	110 VDC	4.25	4.04	3.83
GPD	.....	2500 ohm coil	2.15	2.04	1.94
GPD	.....	5000 ohm coil	2.45	2.33	2.21
GPD	.....	10K ohm coil	2.85	2.71	2.57
GP11	DPDT	Switch assembly	2.40	2.28	2.16
GP17	4PDT	Switch assembly	4.05	3.85	3.65
KNP5A21	SPDT	12, 24 or 120 VAC	5.90	5.61	5.31
KNP5D21	SPDT	6, 12 or 24 VDC	4.95	4.70	4.46
KNP5D21	SPDT	110 VDC	5.90	5.61	5.31
KNP11A21	DPDT	12, 24 or 120 VAC	6.85	6.51	6.17
KNP11D21	DPDT	6, 12 or 24 VDC	5.75	5.46	5.18
KNP11D21	DPDT	48 VDC	6.00	5.70	5.40
KNP14A21	3PDT	12, 24 or 120 VAC	7.75	7.36	6.98
KNP14D21	3PDT	12 or 24 VDC	6.70	6.37	6.03
MS2AY	SPST-NC	120 VAC, ¾ hp motor	7.30	6.94	6.57
MS2AY	SPST-NC	240 VAC, ¾ hp motor	7.50	7.13	6.75
MS4AY	SPST-NC-DB	120 VAC, 3 hp motor	8.10	7.70	7.29
MS4AY	SPST-NC-DB	240 VAC, 3 hp motor	8.25	7.84	7.43

P & B Number*	Contacts	Coil	Net Each 1-24	25-50	51-99	100-249
KUMP11A18	DPDT	6, 12, 24, 120 VAC	$6.35	$6.03	$5.72	$4.76
KUMP11A18	DPDT	240 VAC	6.90	6.56	6.21	5.18
KUMP11D18	DPDT	6, 12, 24 VDC	5.80	5.51	5.22	4.35
KUMP11D18	DPDT	120 VDC	6.60	6.27	5.94	4.95

*Specify coil voltage or resistance when ordering.

EBT SERIES SOLID STATE HYBRID RELAYS

Combines the input/output isolation of a reed relay with the inrush switching capabilities and long life of a solid state switch. EBT relays switch 7 A, 60 Hz at 25° ambient temperature with nominal load voltage of 120 V. Rated 5 A rms, 60 Hz at 55° C ambient. Min. operating current, 200 mA, 60 Hz. Expected life, greater than 10 million bounce-free operations. Operate time, 2 msec max.; release time, 10 msec max. Typical "closed contact" voltage drop, 1.1 V. Octal terminals for standard 8-pin socket. Weight, approximately 5.5 oz.

P & B No.*	Nominal Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
EBT1DA52	12, 24 VDC	$17.50	$16.63	$15.75	$14.00

*Specify coil voltage when ordering.

EBA SOLID STATE HYBRID RELAY

Has all the output switching characteristics, package and mounting of EBT, but includes a control signal amplifier. Designed to operate from current source output mode of DTL and TTL logic circuits; 60 μW signal will switch a 7 A load. Must operate voltage, 2.4 VDC at approx. 25 μA with 24 VDC supply. Max. input, 30 VDC or 1 mA; releases when voltage is reduced to .5 VDC or less. Control voltage change rate must exceed 1 V/msec. Polarity protection provided for control input and supply voltage terminals.

P & B No.	Nominal Voltage	Operate Time	Net Each, Lots of 1-9	10-24	25-49	50-99
EBA1GA52	24 VDC	2 msec	$24.60	$23.37	$22.14	$19.68

ECT SOLID STATE HYBRID RELAYS

ECT series is a medium power triac controlled and isolated by a reed relay. Input power is 290 mW for a 120 VAC, 50/60 Hz line. Expected life is in excess of 10 million operations. Operate time is 2 msec max.; release time, 10 msec max. at 25° C. **Size:** 2.64″ x 1.50″ x 1.52″.

P & B Number	Contacts	Nom. Volts	Net Each, Lots of 1-9	10-24	25-49	50-99
ECT1DC72	SPST-NO	5	$15.05	$14.30	$13.55	$12.04
ECT1DB44	SPST-NO	24	14.80	14.06	13.32	11.84

JDA AMPLIFIER-DRIVEN JDT REED RELAY

Sensitive reed relay features same design as JDT Series. Control signal is amplified by solid state driver circuit with 100 μW sensitivity. Control signals between 24 VDC and 30 VDC will operate JDA when specified supply voltage is applied. Releases when control signal is reduced to .5 VDC or less. Designed for control voltage change rate exceeding 1 V/msec. Contacts rated 10 watts max. resistive per contact, 50 VDC or .5 amp max. Terminals spaced on .1″ grid centers. Weight, 4 oz., approximate.

P & B No.	Contacts	Nominal Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
JDA7GB1	DPDT-NO	24 VDC	$11.65	$11.07	$10.49	$9.32

KUA SOLID STATE AMPLIFIER-DRIVEN RELAY

Amplifier driven KUP relay operates from low power signals associated with IC circuits. Input sensitivity of 60 μW. Control signal of 24 VDC at 25 μA approx. operates relay at specified voltage. Control signal 30 VDC or 1 mA max. Must release control voltage 0.5 VDC at specified supply voltage. Polarity protection. Gold-flashed fine silver contacts switch 5 A at 28 VDC resis. or 120 V, 60 Hz, 80% PF. Clear polycarbonate case; .187″ quick-connect/solder terminals fit KU sockets. Weight, 3.5 oz. approx.

P & B No.	Contacts	Nominal Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
KUA5G11	SPDT	24 VDC	$14.45	$13.73	$13.01	$11.56
KUA11G11	DPDT	24 VDC	14.90	14.16	13.41	11.92

KUR SERIES SOLID STATE HYBRID RELAYS

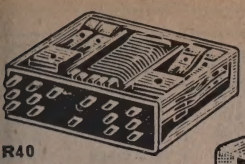
KUR direct action impulse relays for applications requiring on-off operation or alternate energizing of two loads. Solid state flip-flop circuit precedes permanent magnet latching relay; allows relay to remain latched during complete power loss. Requires 25 msec min. pulse width; up to 1200 pulses per minute repetition rate. Gold-flashed fine silver contacts rated 5 amps at 28 VDC or 120 VAC, 80% PF. Terminals are .187″ quick-connect/solder type and fit standard KU sockets. Yellow plastic cover. Weight, 3½ oz. approx.

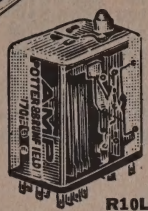
KUR11D11	DPDT	24 VDC	$21.80	$20.71	$19.62	$16.35

See another P & B page for accessories.

★LARGER QUANTITY PRICES ON REQUEST

AMF | POTTER & BRUMFIELD Relays


R40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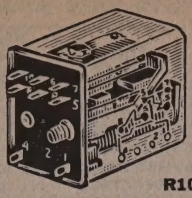

R10

R10 Series: Dependable and versatile, a fine choice for switching loads from dry circuit to 5 amps. Sensitivities to 20 mW/pole available. Operating temp., −55° C to +72° C. Transparent enclosure. Three styles of contacts available: UL File No. E42810. Type R10-**E1** has plug-in solder terminals and mounting stud (sockets optional, see P&B Accessory Page); R10-**E2** has printed circuit terminals, no stud mounting. Final suffix signifies coil ohms.
R10L Series: Has light emitting diode (LED) indicator; produces highly visible red light when relay coil is energized. Other operating characteristics same as standard R10 Series.
R40 Series Slimline® 4PDT Relays: For PC boards; allows .6″ board mtg. centers. Many contacts available with wide range of coil voltages; only .43″ thick for low profile designs. Switching range from true dry circuit to 5 A; pull-in power, 720 mW. Size, 1.20″ x 1.40″ x .43″. Final suffix signifies coil ohms. Type R40-**E1** has solder terminals or plug-in socket mtg.; R40-**E2** has PC pin for vertical mtg. less socket; R40-**E3** has PC pins for flat mtg. less socket.
R10 and R40 Series recognized under UL Component Program and CSA Component Program (File 32074) except R10-E1-X8-115VAC.

2 AMPS TYP. (3 AMPS MAX.)

P&B Number R10-	Contacts	DC Coil Volts	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999*
E1-Y2-V52	DPDT	6	$3.90	$3.51	$3.12	$2.73	$2.54
E1-Y2-V185	DPDT	12	3.90	3.51	3.12	2.73	2.54
E2-Y2-V185	DPDT	12	3.90	3.51	3.12	2.73	2.54
E1-Y2-V700	DPDT	24	3.90	3.51	3.12	2.73	2.54
E2-Y2-V700	DPDT	24	3.90	3.51	3.12	2.73	2.54
E1-Y2-V2.5K	DPDT	48	3.90	3.51	3.12	2.73	2.54
E1-Y2-V15.0K	DPDT	115	6.15	5.54	4.92	4.31	4.00
E1-Y4-V52	4PDT	6	4.30	3.87	3.44	3.01	2.80
E1-Y4-V185	4PDT	12	4.30	3.87	3.44	3.01	2.80
E2-Y4-V185	4PDT	12	4.30	3.87	3.44	3.01	2.80
E1-Y4-V700	4PDT	24	4.30	3.87	3.44	3.01	2.80
E2-Y4-V700	4PDT	24	4.30	3.87	3.44	3.01	2.80
E1-Y4-V2.5K	4PDT	48	4.30	3.87	3.44	3.01	2.80
E1-Y4-V15.0K	4PDT	115	6.55	5.90	5.24	4.59	4.26
E1-Y6-V25	6PDT	6	5.55	5.00	4.44	3.89	3.61
E1-Y6-V90	6PDT	12	5.55	5.00	4.44	3.89	3.61
E2-Y6-V90	6PDT	12	5.55	5.00	4.44	3.89	3.61
E1-Y6-V430	6PDT	24	5.55	5.00	4.44	3.89	3.61
E2-Y6-V430	6PDT	24	5.55	5.00	4.44	3.89	3.61
E1-Y6-V1.5K	6PDT	48	5.55	5.00	4.44	3.89	3.61
E2-Y6-V1.5K	6PDT	48	5.55	5.00	4.44	3.89	3.61
E1-Y6-V9.0K	6PDT	115	6.55	5.90	5.24	4.59	4.26

5 AMPS TYP. (7½ AMPS MAX.)

E1-X2-V52	DPDT	6	$4.05	$3.65	$3.24	$2.84	$2.63
E1-X2-V185	DPDT	12	4.05	3.65	3.24	2.84	2.63
E1-X2-V700	DPDT	24	4.05	3.65	3.24	2.84	2.63
E2-X2-V700	DPDT	24	4.05	3.65	3.24	2.84	2.63
E1-X2-V2.5K	DPDT	48	4.05	3.65	3.24	2.84	2.63
E1-X2-V15.0K	DPDT	115	6.30	5.67	5.04	4.41	4.10
E1-X4-V52	4PDT	6	4.60	4.14	3.68	3.22	2.99
E1-X4-V185	4PDT	12	4.60	4.14	3.68	3.22	2.99
E1-X4-V700	4PDT	24	4.60	4.14	3.68	3.22	2.99
E1-X4-V2.5K	4PDT	48	4.60	4.14	3.68	3.22	2.99
E1-X4-V15.0K	4PDT	115	6.85	6.17	5.48	4.80	4.45
E1-X6-V25	6PDT	6	6.00	5.40	4.80	4.20	3.90
E1-X6-V90	6PDT	12	6.00	5.40	4.80	4.20	3.90
E1-X6-V430	6PDT	24	6.00	5.40	4.80	4.20	3.90
E1-X6-V1.5K	6PDT	48	6.00	5.40	4.80	4.20	3.90
E1-X6-V9.0K	6PDT	115	7.00	6.30	5.60	4.90	4.55

100 mA TYP. (2 AMPS MAX.)— BIFURCATED LOW LEVEL CONTACTS

E1-Z2-V52	DPDT	6	$4.35	$3.92	$3.48	$3.05	$2.83
E1-Z2-V185	DPDT	12	4.35	3.92	3.48	3.05	2.83
E1-Z2-V700	DPDT	24	4.35	3.92	3.48	3.05	2.83
E1-Z2-V2.5K	DPDT	48	4.35	3.92	3.48	3.05	2.83
E1-Z2-V15.0K	DPDT	115	6.60	5.94	5.28	4.62	4.29
E1-Z4-V52	4PDT	6	4.90	4.41	3.92	3.43	3.19
E1-Z4-V185	4PDT	12	4.90	4.41	3.92	3.43	3.19
E2-Z4-V185	4PDT	12	4.90	4.41	3.92	3.43	3.19
E1-Z4-V700	4PDT	24	4.90	4.41	3.92	3.43	3.19
E2-Z4-V700	4PDT	24	4.90	4.41	3.92	3.43	3.19
E1-Z4-V2.5K	4PDT	48	4.90	4.41	3.92	3.43	3.19
E1-Z4-V15.0K	4PDT	115	7.15	6.44	5.72	5.01	4.65
E1-Z6-V25	6PDT	6	6.30	5.67	5.04	4.41	4.10
E1-Z6-V90	6PDT	12	6.30	5.67	5.04	4.41	4.10
E2-Z6-V90	6PDT	12	6.30	5.67	5.04	4.41	4.10
E1-Z6-V430	6PDT	24	6.30	5.67	5.04	4.41	4.10
E2-Z6-V430	6PDT	24	6.30	5.67	5.04	4.41	4.10
E1-Z6-V1.5K	6PDT	48	6.30	5.67	5.04	4.41	4.10
E2-Z6-V1.5K	6PDT	48	6.30	5.67	5.04	4.41	4.10
E1-Z6-V9.0K	6PDT	115	7.30	6.57	5.84	5.11	4.75

SENSITIVE CURRENT (J ADJUSTMENT)

2 AMPS TYP. (3 AMPS MAX.)

E1-Y2-J2.5K	DPDT	5.8*	$4.25	$3.83	$3.40	$2.98	$2.76
E1-Y2-J5.0K	85 mW	4.1*	4.80	4.32	3.84	3.36	3.12
E1-Y2-J10.0K		3.1*	5.20	4.68	4.16	3.64	3.38
E1-Y4-J2.5K	4PDT	8.4*	4.70	4.23	3.76	3.29	3.06
E1-Y4-J5.0K	175 mW	6.2*	5.25	4.73	4.20	3.68	3.41
E1-Y4-J10.0K		4.5*	5.70	5.13	4.56	3.99	3.71

100 mA TYP. (2 AMPS MAX.)

E1-Z4-J1.0K	4PDT	13.0*	$5.30	$4.77	$4.24	$3.71	$3.45
E1-Z4-J2.5K	175 mW	8.4*	5.30	4.77	4.24	3.71	3.45
E2-Z4-J2.5K		8.4*	5.30	4.77	4.24	3.71	3.45
E1-Z4-J5.0K		6.2*	5.85	5.27	4.68	4.10	3.80
E2-Z4-J5.0K		6.2*	5.85	5.27	4.68	4.10	3.80

*mA.

★LARGER QUANTITY PRICES ON REQUEST

7½ AMPS TYP. (10 AMPS MAX.)

P&B Number R10-	Contacts	DC Coil Volts	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999*
E1-W2-V185	DPDT	12	$4.65	$4.19	$3.72	$3.26	$3.02
E1-W2-V700	DPDT	24	4.65	4.19	3.72	3.26	3.02

5 AMPS TYP. (7½ AMPS MAX.)—AC

E1-X2-115VAC	DPDT	115	$6.65	$5.99	$5.32	$4.66	$4.32
E1-X4-115VAC	4PDT	115	8.10	7.29	6.48	5.67	5.27
E1-X6-115VAC	6PDT	115	11.25	10.13	9.00	7.88	7.31
E1-X8-115VAC	8PDT	115	13.55	12.20	10.84	9.49	8.81

2 AMPS TYP. (3 AMPS MAX.)

P&B Number R10L-	Contacts	DC Coil Volts	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999*
E1-Y2-V52	DPDT	6	$7.60	$6.84	$6.08	$5.32	$4.94
E1-Y2-V185	DPDT	12	7.60	6.84	6.08	5.32	4.94
E2-Y2-V185	DPDT	12	7.60	6.84	6.08	5.32	4.94
E1-Y2-V700	DPDT	24	7.60	6.84	6.08	5.32	4.94
E1-Y2-V2.5K	DPDT	48	7.60	6.84	6.08	5.32	4.94
E1-Y4-V52	4PDT	6	8.00	7.20	6.40	5.60	5.20
E1-Y4-V185	4PDT	12	8.00	7.20	6.40	5.60	5.20
E1-Y4-V700	4PDT	24	8.00	7.20	6.40	5.60	5.20
E2-Y4-V700	4PDT	24	8.00	7.20	6.40	5.60	5.20
E1-Y6-V430	6PDT	24	9.25	8.33	7.40	6.48	6.01

5 AMPS TYP. (7½ AMPS MAX.)

E1-X2-V185	2PDT	12	$7.75	$6.98	$6.20	$5.43	$5.04
E1-X2-V700	2PDT	24	7.75	6.98	6.20	5.43	5.04
E1-X4-V185	4PDT	12	8.30	7.47	6.64	5.81	5.40
E1-X4-V700	4PDT	24	8.30	7.47	6.64	5.81	5.40
E1-X4-V2.5K	4PDT	48	8.30	7.47	6.64	5.81	5.40
E1-X6-V430	6PDT	24	9.70	8.73	7.76	6.79	6.31

100 mA TYP. (2 AMPS MAX.) BIFURCATED LOW LEVEL CONTACTS

E1-Z4-V700	4PDT	24	$8.60	$7.74	$6.88	$6.02	$5.59

2 AMPS TYP. (3 AMPS MAX.)

P&B Number R40-	DC Coil Volts	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999	1000 Up
E1-Y4-V50	6	$6.65	$5.99	$5.32	$4.66	$4.32	$3.99
E1-Y4-V200	12	6.65	5.99	5.32	4.66	4.32	3.99
E2-Y4-V200	12	6.65	5.99	5.32	4.66	4.32	3.99
E3-Y4-V200	12	6.65	5.99	5.32	4.66	4.32	3.99
E1-Y4-V800	24	6.65	5.99	5.32	4.66	4.32	3.99
E2-Y4-V800	24	6.65	5.99	5.32	4.66	4.32	3.99
E3-Y4-V800	24	6.65	5.99	5.32	4.66	4.32	3.99
E1-Y4-V3.2K	48	6.65	5.99	5.32	4.66	4.32	3.99
E3-Y4-V3.2K	48	6.65	5.99	5.32	4.66	4.32	3.99

5 AMPS TYP. (7½ AMPS MAX.)

E2-X4-V50	6	$6.95	$6.26	$5.56	$4.87	$4.52	$4.17
E1-X4-V200	12	6.95	6.26	5.56	4.87	4.52	4.17
E2-X4-V200	12	6.95	6.26	5.56	4.87	4.52	4.17
E3-X4-V200	12	6.95	6.26	5.56	4.87	4.52	4.17
E1-X4-V800	24	6.95	6.26	5.56	4.87	4.52	4.17
E2-X4-V800	24	6.95	6.26	5.56	4.87	4.52	4.17
E3-X4-V800	24	6.95	6.26	5.56	4.87	4.52	4.17

100 mA TYP. (2 AMPS MAX.) BIFURCATED LOW LEVEL CONTACTS

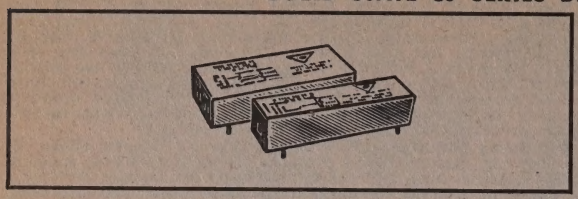
E1-Z4-V200	12	$7.25	$6.53	$5.80	$5.08	$4.71	$4.35
E2-Z4-V200	12	7.25	6.53	5.80	5.08	4.71	4.35
E3-Z4-V200	12	7.25	6.53	5.80	5.08	4.71	4.35
E1-Z4-V800	24	7.25	6.53	5.80	5.08	4.71	4.35
E3-Z4-V800	24	7.25	6.53	5.80	5.08	4.71	4.35

500 μA TYP. (¼ AMP MAX.)— DRY CIRCUIT CROSS BAR

E1-L4-V200	12	$8.30	$7.47	$6.64	$5.81	$5.40	$4.98
E3-L4-V200	12	8.30	7.47	6.64	5.81	5.40	4.98
E1-L4-V800	24	8.30	7.47	6.64	5.81	5.40	4.98
E3-L4-V800	24	8.30	7.47	6.64	5.81	5.40	4.98

See another P&B page for accessories.

SOLID STATE CJ SERIES DRY REED TIME DELAY RELAYS



CJ Series time delay dry reed relays combine the basic timing characteristics of time delay relays with the long life and performance of miniature dry reed relays. **CJH** is external resistor-adjustable delay on operate. Pin terminations are for PC board mounting. **Time Delay Periods:** Choice of 0.1 to 10 sec, or 1 to 120 sec, adjustable to ±10% at nominal voltage at 25° C ambient temperature. **Operating Temperature:** −10° C to +55° C. **Contact Forms:** Up to 1C (A+B) in three cavities. **Size:** 2.718″ max. x 0.688″ to 1.094″ x 0.710″. Weight, 1½ oz. approx.

P&B Number	Time Delay, Seconds	Input Voltage	External Resistor Ohms*	Net Each 1-9*
CJH01-20010	0.1 to 10	12 VDC	750K	$22.75
CJH01-20120	1 to 120	12 VDC	1.8 megs	25.95
CJH01-30010	0.1 to 10	24 VDC	750K	22.75
CJH01-30120	1 to 120	24 VDC	1.8 megs	25.95
CJH03-20010	0.1 to 10	12 VDC	750K	24.95
CJH03-30010	0.1 to 10	24 VDC	750K	24.95

*Value of external resistor required for maximum delay time.

★LARGER QUANTITY PRICES ON REQUEST

ACCESSORIES FOR P&B RELAYS, DELAYS AND SENSORS

SOCKETS

P&B Number	For Relay	Contacts	Terminals	Box Qty.	Net/ Box
9HP1	HCM, HPS, HP	DPDT	Solder and socket retainer	10 ea.	$11.00
9KH1	KHP, KHS, KHU*	4PDT	Solder and socket retainer	10 ea.	7.30
9KH2		4PDT	Printed circuit	10	7.30
9KH5		4PDT	Screw—rated 3 A	5	34.00
9KN1	KNP	SPDT/ DPDT/ 3PDT	Solder	10	7.60
9KN2			Printed circuit	10	7.60
9KR31	KAP, KBP, KCP, KRP, KRP3-H, EBA, EBT†	8-pin	Screw—rated 10 A	5	14.00
9KR32		11-pin	Screw—rated 10 A	5	21.00
9KU1‡	KUL, KUP plain case, KUR§	SPDT/ DPDT/ 3PDT	Pierced solder—10 A	5	4.45
9KU2‡			Printed circuit	5	5.25
9KU5‡			Quick-connect—10 A	5	7.00
9KU6			Screw—10 A	4	17.80

*And CD-31 time delay. †And CD-21, CD-38, CK, CH time delays; CPS, CS-38 sensors. ‡Recognized under UL Component Program. §And CU, CL time delays. #Not assembled.

SOCKETS FOR R10 AND R10L SERIES RELAYS

With ground; not recommended for relays carrying 5 amps AC and above.

P&B Number	Contacts	Terminal	Contents	Net per Box
9XR10-1	DPDT	Solder	10 each, sockets and hold down springs	$ 6.40
9XR10-2	4PDT	Solder		8.00
9XR10-3	6PDT	Solder		10.10
9XR10-4	DPDT	PC pins	10 each, sockets and hold down springs	6.40
9XR10-5	4PDT	PC pins		8.00
9XR10-6	6PDT	PC pins		12.10
9XR10-7*	DPDT	Solder	10 each, sockets and hold down springs	6.40
9XR10-8*	4PDT	Solder		8.00
9XR10-9*	6PDT	Solder		9.60
9XR10-10	Pkg. 50 strap hold down springs, PC skts.			3.00
9XR10-11*	DPDT	PC pins	10 each, sockets and hold down springs	6.40
9XR10-12*	4PDT	PC pins		8.00
9XR10-13*	6PDT	PC pins		12.10
9XR10-14*	4PDT	Solder brkt. mt.	5 ea., skts, hold down springs	5.55
9XR10-15	20 pre-punched break-away mounting plates for R-10 relay or sockets			30.84

*Without ground. †Box of 12 strips.

SOCKETS FOR R40 SLIMLINE SERIES RELAYS

9XR40-1	4PDT	Right angle PC	10 each, sockets and hold down springs	$16.00
9XR40-2	4PDT	Vert. PC		11.60
9XR40-3	4PDT	Chassis mount—solder	As above, plus mounting clips	12.70

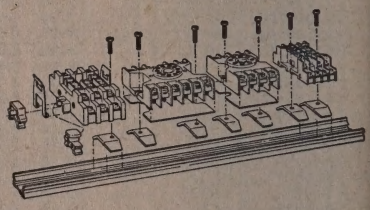
SOCKETS FOR R12 SERIES TIME DELAY RELAYS

9XR12-1	DPDT	Solder PC pins	10 ea., skts, hold down springs	$10.10
9XR12-2	DPDT			10.10

SOCKETS FOR R13, R14 SERIES

9XR13-1	4PDT	Solder terminals	10 each, with grounding strip	$15.30
9XR14-1	4PDT			15.30

SCREW TERMINAL SOCKET SYSTEM



For mounting several industrial screw terminal sockets. **No. 24A064:** Three ft. aluminum track with holes on 6″ centers for #8 screws. **No. 9KR42:** Box of 25 plastic twist-clips for mounting 9KH5, 9KR31 and 9KR32 sockets. **No. 9KU7:** Box of 10 aluminum clips, each with one 6-40 x 1 3/32″ screw. **No. 9KU8:** Box of 10 plastic quick-mount clips for 9KU6 sockets. No screws required. **No. 9KU9:** Box of 20 stainless-steel clips for restricting movement of relay inserted into 9KU6 socket. Two required per relay.

P&B No.	Box Qty.	Net/ Box	P&B No.	Box Qty.	Net/ Box	P&B No.	Box Qty.	Net/ Box
24A064	1	$2.20	9KU7	10	$0.70	9KU9	20	$1.80
9KR42	25	2.75	9KU8	10	.90			

HOLD DOWN SPRINGS AND SOCKET RETAINERS

P&B No.	For Relay	Description	Box Qty.	Net/ Box
9KA1	KAP	Hold down spring	50	$ 8.50
9KD3	KDP	Hold down spring	50	
9KH3	KHP, KHS, KHU*	Hold down spring	50	6.50
9KN3	KNP	Hold down spring	50	5.50
9KR15	KCP, KRP	Hold down spring	50	9.50
9KU3	KUP	Hold down spring	50	10.00
9KU7	KUP plain case, KUL, KUR†	Steel mounting clip, one screw	10	.70
9KU8		Quick-Mount clip, no screw	10	.90
9KU9		Stainless steel hold down	20	1.80
9KUL21	KUL	Hold down spring	25	7.00

*And CD-31 time delays. †And CU, CL time delays.

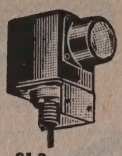
ENCLOSURES AND ADAPTER

P&B No.	For Relay	Description	Box Qty.	Net/ Box
9PM1	PM	Adapter plate for mounting PM on PR mounting holes	10	$4.00
9PM2	PM	Plastic dust cover	4	4.20
35D013	PR	Metal dust cover	1	4.95
35D070	.....	8-pin plug—clear polycarbonate case for mounting rectifiers, capacitors, resistors or any combination	1	.79
35D072	.....	Same as 35D070 except 11-pin plug	1	.95
35D130	MS/MR	Metal dust cover	1	3.30
35D227	PM	Metal dust cover	1	6.00

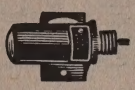
SIGMA PHOTOCONTROL SYSTEMS, OPTOELECTRONIC COMPONENTS

8P3, 8P8

8R


8L3

8P7


8P4

301R

301T1

SERIES 8 PHOTOCONTROL SYSTEMS

Low cost, compact systems for light-beam control of moving objects. Range from 12 in. to 25 ft.; speeds up to 1200 operations per minute. Integral and remote systems. Replaceable incandescent lamps operate at low voltage for maximum life.

INTEGRAL 2-PART SYSTEMS—SPDT AND DPDT

12-FT. RANGE—120 VAC—60 Hz

Receivers 8P8, 8P9, 8P10 High Speed Types and 8P3, 8P5, 8P6 General Purpose Types: Temperature range, +32° F to +112° F. Housing, NEMA Types 1 and 12. Mounting: 8P3, 8P8: Bracket, ½" conduit, AWG #18 leads 19" max.; 8P6 and 8P10: Bracket and 5-pin plug; 8P5 and 8P9: Bracket and 8-pin octal plug. Size, 1²⁹⁄₃₂" w. x 3⁷⁄₁₆" d. x 2½" h. Weight: 8P3, 8P8, 13 oz.; others, 9 oz.

Receivers 8R Miniature, Low-Cost Plug-In Types: Temperature range, −40° to +140° F. Housing, NEMA Types 1 and 12. Mounting, 5-pin plug. Min. Operations: Electrical, 1 million; mechanical, 1 billion. Requires 5 ft-candle to operate; 8RCO1A releases at 0.1 ft-candle, 8RCO2A at 0.5 ft-candle. 8RCO1A U/L and CSA Listed, 8RCO2A for high ambient light conditions. Size, 1⁹⁄₁₆" sq. x 2³²⁄₃₂" h. Wt., 3 oz.

Light Source 8L3: Used with all types. Lamp life, 10,000 hours. Mounting, bracket, ½" conduit, AWG #18 leads 19" max. Size. 1²⁹⁄₃₂" w. x 3⁷⁄₁₆" d. x 2½" h. Weight, 13 oz.

Sigma Number*	Oper. per Min.	Contact Rating (Resis.) At 28 VDC & 120 VAC	Contact Rating (Resis.) At 230 VAC	Net Each, Disc. Sch. 1*
8P3-115	600	10 amps	5 amps	$39.00
8P3-230	600	10 amps	5 amps	39.00
8P8-115	1200	5 amps	2.5 amps	78.05
8P8-230	1200	5 amps	2.5 amps	78.05
8P5-115	600	10 amps	5 amps	38.95
8P5-230	600	10 amps	5 amps	38.95
8P9-115	1200	5 amps	2.5 amps	78.05
8P9-230	1200	5 amps	2.5 amps	78.05
8P6-115	600	10 amps	5 amps	37.35
8P6-230	600	10 amps	5 amps	37.35
8P10-115	1200	5 amps	2.5 amps	74.60
8P10-230	1200	5 amps	2.5 amps	74.60
8RC01A	120	3 amps	.....	32.35
8RC02A	120	3 amps	.....	32.35
8L3-115	Light Source			28.40
8L3-230	Light Source			28.40

*Source voltage 120 VAC, except -240 types (240 VAC). †DPDT; all others SPDT.

REMOTE 3-PART SYSTEMS—DPDT

Subminiature Receiver 8P7 and Light Source 8L7: Smallest units available. Range, 12"; 600 operations per minute. Lamp life, 4,000 hours. Polycarbonate housing. Mounting: Bracket, leads #22 AWG 10" min. Size, 5⁄16" dia. x 1½" l. Weight: 8P7, .32 oz., 8L7, .26 oz.

Miniature Receiver 8P4 and Light Source 8L4: Adjustable focus light source. Operates 25 feet from 5.5 V amplifier terminal with 4,000-hr. lamp life; 15 feet from 4.5 V amplifier terminal with 40,000-hr. lamp life. Operations per minute, 600. Black anodized aluminum housing. Mounting: Bracket, ⅜" conduit, leads #18 AWG 10" min. Size: 8P4, 1" dia. x 2⁷⁄₁₆" l.; 8L4, 1" dia. x 2¹⁄₁₆" l. Weight: 8P4, 2.9 oz.; 8L4, 2.7 oz.

Amplifiers 8A and 8A3: For use with 8P7–8L7 and 8P4–8L4. Solid state circuitry. DPDT output contacts. Temperature range, +32° F to +122° F. Weight, 2 lbs. **No. 8A** amplifier has plug-in replaceable relay rated for 10 million mechanical operations; contact rating, 5 amps at 28 VDC or 120/240 VAC. **No. 8A3** time delay amplifier has variable delay, 50 milliseconds to 20 seconds with ±10% repeatability; contact rating, 10 amps at 28 VDC or 120 VAC, 5 amps at 240 VAC.

Housing AT373-1: For use with 8A or 8A3 amplifier. JIC, oil-tight, weatherproof. Size, 10¹⁵⁄₁₆" w. x 4¼" d. x 11½" h. Weight, 9¼ lbs.

Sigma No.	Description	Net Ea., Sch. 1*	Sigma No.	Description	Net Ea., Sch. 1*
8P7	Receiver	$25.80	8A	Amplifier	$106.35
8L7	Lt. source	18.70	8A3	Amplifier	143.00
8P4	Receiver	28.40	AT373-1	Housing (no discount)	28.00
8L4	Lt. source	24.80			

OPTO-ISOLATOR DEVICES

DATACEL® SERIES 301 SWITCHING DEVICES

1-, 2-, 4-POLE

Solid state switching for data processing input-output, automatic test and machine control equipment; electronic instrumentation; telephone switching; digital circuitry. Switching functions: Isolation interface, logic, data sampling, noiseless potentiometer, low signal level, automatic feedback. Input-output circuit isolation. Miniature lamp coupled optically to 1, 2 or 4 photoconductive cells, each functioning as bilateral switch. Input and output either AC or DC. Off or dark resistance, 10 megohms, min., except 301T2-6B1 and 301T2-12B1, 20 megohms min.; steady state low as 200 ohms; switching ratios in order of 10^5. Printed circuit mounting. Socket conversion to solder terminals. **Output Rating:** 250 V each cell, except 301T1-2A2, 100 V. **Temperature Range:** −40° C to +50° C. **Size:** 301R, 1" w. x ½" d. x ½" h., less terminals; 301T, 1⅜" w. x ⅜" d. x ¼" h.

1-POLE TYPES

Sigma No.	Lamp Input* Volts	Lamp Input* Cur., mA	Photocell Output On Resistance R_L Max.	Photocell Output P_D Ea. Cell mW	Net Ea., Disc. Sch. 1*
301R1-6	6	40	400 ohms	500	$4.20
301R1-12	12	19	500 ohms	500	4.20
301R1-24	24	40	200 ohms	175	4.20
301R1-150	150	2	500 ohms	500	4.20
301T1-6B1	6	50	400 ohms	400	1.80
301T1-12B1	12	24	400 ohms	400	1.80
301T1-120A1	120	1.3	1200 ohms	400	1.95
301T1-150A1	150	2	500 ohms	400	1.95
301T1-2A1	2†	40	2000 ohms	200	1.85
301T1-2A2	2†	40	800 ohms	200	1.85
301T1-2B1	2†	25	1000 ohms	200	2.75

2-POLE TYPES

301R2-6	6	40	400 ohms	400	$6.55
301R2-12	12	19	500 ohms	400	6.55
301R2-24	24	40	200 ohms	175	6.55
301R2-150	150	2	500 ohms	400	6.55
301T2-6B1‡	6	50	1000 ohms	200	1.85
301T2-12B1‡	12	24	1000 ohms	200	1.85
301T2-120A1	120	1.3	3000 ohms	200	2.05
301T2-150A1	150	2	1200 ohms	200	2.05

4-POLE TYPES

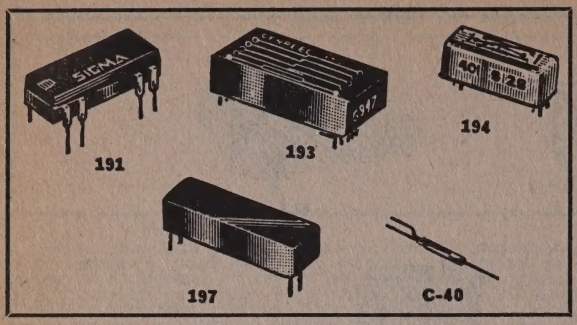
301R4-6	6	80	650 ohms	175	$9.20
301R4-12	12	38	1000 ohms	175	9.20
301R4-24	24	40	500 ohms	75	9.20

*6, 12 and 24 V are incandescent; 150 V, neon (requires 150 VDC or AC peak to fire, and resistor in series with neon lamp to limit current to 2 mA). 120 V input is neon, particularly suited for 100–130 VAC line, use 47K external series resistors. †LED actuated for direct control of IC circuits. ‡Single input controls 2 outputs.

★QUANTITY DISCOUNT SCHEDULES

Disc. Sch. 1 Lots of	Disc. Sch. 1 Discount	Disc. Sch. 2 Lots of	Disc. Sch. 2 Discount	Disc. Sch. 3 Lots of	Disc. Sch. 3 Discount	Disc. Sch. 4 Lots of	Disc. Sch. 4 Discount
1–49	Net	1–99	Net	1–19	Net	1–9	Net
50–74	5%	100–249	5%	20–99	18%	10–49	10%
75–99	10%	250–499	10%	100–499	28%	50–99	20%
100–249	20%	500–2499	30%	500–999	38%	100–249	30%

LARGER DISCOUNTS AVAILABLE ON REQUEST



REED RELAYS

SERIES 191 FORM A: SPST, DPST; FORM C: SPDT

Standard 14 pin, dual in-line packaged reed relays feature fast response, reliable performance, high sensitivity and isolation resistance. Best suited for test and computer peripheral equipment. **Operating Time:** 1.0 msec max. at rated voltage. **Isolation Resistance:** 10^9 ohms min. Internal diode, coil suppression, electromagnetic and electrostatic shielding optional.

Sigma No.	Nom. VDC	Resis. Ohms	Contacts	Rating Amps	Net Ea. Disc. Sch. 1*
191TE1A1-5S	5	500	1A	0.5	$3.30
191TE1A1-5G	5	200	1A	0.5	3.30
191TE1A1-6S	6	500	1A	0.5	3.30
191TE1A1-6G	6	200	1A	0.5	3.30
191TE1A1-12G	12	1250	1A	0.5	3.30
191TE1A1-12L	12	500	1A	0.5	3.30
191TE2A1-5G	5	200	2A	0.25	6.10
191TE2A1-6G	6	200	2A	0.25	6.10
191TE2A1-12G	12	500	2A	0.25	6.10
191TE2A1-24L	24	1200	2A	0.25	6.10
191TE1C1-5S	5	200	1C	0.5	5.00
191TE1C1-5G	5	450	1C	0.5	5.00
191TE1C1-6S	6	200	1C	0.5	5.00
191TE1C1-6G	6	150	1C	0.5	5.00
191TE1C1-12G	12	500	1C	0.5	5.00
191TE1C1-24L	24	1250	1C	0.5	5.00

OPTIONS

Diode Optional—For any of above relays. Add to net $0.55
Electrostatic Shielding for above relays. Add to net 55

SERIES 193

Choice of 20 combinations of contacts (SPST thru 6PST, SPDT thru 4PDT) in 4 standard case sizes. Form A capsules for single throw switching and patented Form C for double throw switching. Printed circuit type pin contacts are on 1.000″ x 0.100″ PC grid spacing. All cased relays are magnetically shielded for minimum interaction and housed in a molded plastic case. All units have standoffs. **Contact Rating:** 0.5 amp.

Enclosed Sigma No. 193-	Open Sigma No. 193-	Coil Data: Resis., Ohms at VDC Nom.	Contacts	Net Ea. Disc. Sch. 1*: Enclosed	Net Ea. Disc. Sch. 1*: Open
RE1A3-*G	FP1A1-*G	100 at 6 VDC	1A	$ 3.10	$ 2.65
RE1C3-*G	FP1C1-*G	420 at 12 VDC	1C	5.15	4.80
RE2A3-*G	FP2A1-*G	2300 at 24 VDC	2A	4.00	3.50
RE2C3-*G	FP2C1-*G		2C	6.85	6.30
RE3A3-*G	FP3A1-*G	30 at 6 VDC	3A	4.60	4.35
RE3C3-*G	FP3C1-*G	120 at 12 VDC	3C	9.60	9.05
RE4A3-*G	FP4A1-*G	640 at 24 VDC	4A	5.85	5.10
RE4C3-*G	FP4C1-*G	19 at 6 VDC	4C	12.55	12.00
RE5A3-*G	FP5A1-*G	77 at 12 VDC	5A	7.20	6.30
RE6A3-*G	FP6A1-*G	410 at 24 VDC	6A	8.70	7.50

*Insert nominal VDC after basic model no.; e.g., 193RE4C3-12G.

SERIES 194

Choice of 14 combinations of contacts (SPST thru 4PDT) in 3 standard case sizes. Meets MIL-R-5757/29 specifications. Form A for single throw switching and patented Form C for double throw switching. Printed circuit type pin contacts are .030″ in dia. and are on standard .100″ grid spacing. Relays are electrostatically and magnetically shielded to minimize the possibility of interaction or latching. Cases are made of tin-dipped steel. **Nom. Coil Voltage:** 26.5 VDC. **Contact Rating:** 0.5 amp.

Sigma No.	Govt's Designation	Contacts	Resis., Ohms	Net Ea. Disc. Sch. 1*
194HE1A-22001	M5757/29-001	1A	2350	$ 7.20
194HE1C-22002	M5757/29-002	1C	1450	9.00
194HE2A-22003	M5757/29-003	2A	925	8.90
194HE1A1C-22004	M5757/29-004	1A1C	925	11.40
194HE2C-22005	M5757/29-005	2C	925	12.70
194HE3A-22006	M5757/29-006	3A	650	10.75
194HE2A1C-22007	M5757/29-007	2A1C	650	13.25
194HE1A2C-22008	M5757/29-008	1A2C	650	15.35
194HE3C-22009	M5757/29-009	3C	650	16.95
194HE4A-22010	M5757/29-010	4A	460	13.10
194HE3A1C-22011	M5757/29-011	3A1C	460	15.75
194HE2A2C-22012	M5757/29-012	2A2C	460	17.65
194HE1A3C-22013	M5757/29-013	1A3C	460	19.80
194HE4C-22014	M5757/29-014	4C	460	21.70

SERIES 197

Pico size reed relay with straight terminal pins on standard 0.700″ x 0.100″ grid spacing for printed circuit board mounting. Permits use with high density IC packaging. Five volt versions are compatible with DTL and TTL gates. **Pick-up Coil Power:** 32 or 80 mW. **Min. Gap Breakdown Voltage:** 200 VDC.

Sigma No.	Nom. VDC	Resis., Ohms	Contacts	Rating Amps	Net Ea. Disc. Sch. 1*
197TE1A1-5S	5	500	1A	0.5	$3.80
197TE1A1-5G	5	200	1A	0.5	3.25
197TE1A1-6S	6	500	1A	0.5	3.80
197TE1A1-6G	6	200	1A	0.5	3.25
197TE1A1-12G	12	1250	1A	0.5	3.80
197TE1A1-12L	12	500	1A	0.5	3.25
197TE1C1-5G	5	200	1C	0.25	5.25
197TE1C1-6G	6	200	1C	0.25	5.25
197TE1C1-12G	12	500	1C	0.25	5.25

MAGNETIC REED SWITCHES

Highly adaptable devices for control of low-power electric circuits. Faster than mechanically operated miniature snap-acting switches and less costly than solid-state switches. Highly sensitive and immune to contamination of contacts. **Min. Gap Breakdown Voltage:** 200 VDC. **Initial Contact Resistance:** 0.10 ohm max.

FORM A—SPST

Pull-in Range: 20 to 90 ampere-turns.

Sigma No.	Glass: Dia. In.	Glass: Lgth. In.	Load: Amps Max.	Load: Watts DC	Load: VAC	Net Ea. Disc. Sch. 3*
3A14-032	.100	.800	0.5	6	10	$1.15
3A14-017	.100	.800	1.0	10	15	1.15
3A31-042	.090	.560	0.5	6	10	1.25
3A31-013	.090	.560	1.0	10	15	1.25

FORM C—SPST

Pull-in Range: 40 to 90 ampere turns. All switches have off set location of gap.

Sigma No.	Glass: Dia. In.	Glass: Lgth. In.	Load: Amps Max.	Load: Watts DC	Load: VAC	Net Ea. Disc. Sch. 3*
3C05-058	.125	.625	0.5	6	10	$3.45
3C05-059	.125	.625	0.75	10	15	3.45
3C40-083	.090	.625	0.5	4	6	4.20

TIME DELAY RELAYS

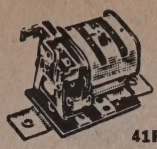
SERIES 222 AC AND DC—DPDT

Solid state time delay relay with timing intervals from 1 to 120 seconds. Available in fixed time delay on operate, resistor adjustable and knob adjustable in either AC or DC. For use in automated and semi-automated industrial applications. **Life Rated:** 100,000 operations, min. electrical life; 10,000,000 operations, min. mechanical life. Reset time, 150 milliseconds, nom. Recycle time, 150 milliseconds, nom. **Operating Temperature Range:** +14° F to +122° F.

Sigma No. and Nom. Coil Volts	Type	Time Delay, Sec	Ext. Resis. Required, Ohms	Net Ea. Disc. Sch. 4*
222AF-010-24DC	Fixed	10	. . . . .	$15.65
222AF-120-24DC	Fixed	120	. . . . .	17.40
222AR-010-24DC	Resis. Adj.	1–10	160K	16.50
222AR-120-24DC	Resis. Adj.	1–120	2.0 megs	17.95
222BF-010-24DC	Fixed	10	. . . . .	15.65
222BF-120-24DC	Fixed	120	. . . . .	17.40
222BR-010-24DC	Resis. Adj.	1–10	160K	16.50
222BR-120-24DC	Resis. Adj.	1–120	2.0 megs	17.95
222AF-010-24AC	Fixed	10	. . . . .	15.65
222AF-010-120AC	Fixed	10	. . . . .	15.65
222AF-120-120AC	Fixed	120	. . . . .	17.40
222AR-010-120AC	Resis. Adj.	1–10	180K	16.50
222AR-120-120AC	Resis. Adj.	1–120	2.4 megs	17.95
222AK-010-120AC	Knob Adj.	1–10	. . . . .	17.95
222AK-120-120AC	Knob Adj.	1–120	. . . . .	19.65
222BF-010-24AC	Fixed	10	. . . . .	15.65
222BF-010-120AC	Fixed	10	. . . . .	15.65
222BF-120-120AC	Fixed	120	. . . . .	17.40
222BR-010-24AC	Resis. Adj.	1–10	180K	16.50
222BR-010-120AC	Resis. Adj.	1–10	180K	16.50
222BR-120-120AC	Resis. Adj.	1–120	2.4 megs	17.95

QUANTITY DISCOUNTS ON ANOTHER SIGMA PAGE

5F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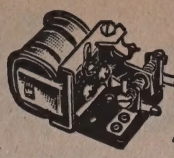
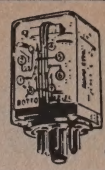

4F


42RO

SENSITIVE RELAYS

SERIES 5 SPDT HIGH-SENSITIVITY DC RELAYS

An exceptionally versatile, rugged relay; highly sensitive, precise, stable. Unusually high contact forces at inputs as low as 1 mW (adjustment SS; 5 mW, S), gradually changing or on-off. Useful for overload-underload detection. Reacts without amplification to minute variations from normal. Withstands heavy voltage or current 30-to-1 overloads. Contact ratings, S, 1 amp; SS, .25 amp; both 28 VDC/120 VAC resistive. All types are UL and CSA Listed. Temperature range: S, −4° to +158° F; SS, +50° to +140° F. **5F:** Unenclosed, screw mounting, solder terminals. Size, 1⅜″ w. x 1¾″ d. x 1½″ h. Weight, 4¼ oz. **5JO:** Hermetically sealed; 8-pin plug. Size, 1⅝″ sq. x 2⅝″ h. Weight, 7¼ oz. **5R:** Dust cover; 5-pin plug, 5RO, 8-pin. Size, 1⅞″ sq. x 2³⁄₃₂″ h. Wt., 5¾ oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout, Min. mADC	Net Ea., Disc. Sch. 1*
5F-1,000 S-SIL	1,000	2.3	.80	$15.10
5F-2,500 S-SIL	2,500	1.4	.50	15.10
5F-5,000 S-SIL	5,000	1.0	.40	16.10
5F-10,000 S-SIL	10,000	.70	.25	17.65
5F-16,000 S-SIL	16,000	.55	.20	19.00
5F-1,000 SS-PAL	1,000	1.0	.40	21.25
5F-10,000 SS-PAL	10,000	.30	.13	23.70
5JO-1,000 S-SIL	1,000	2.3	.80	27.60
5JO-2,500 S-SIL	2,500	1.4	.50	27.60
5JO-5,000 S-SIL	5,000	1.0	.40	28.60
5JO-10,000 S-SIL	10,000	.70	.25	30.10
5JO-16,000 S-SIL	16,000	.55	.20	31.80
5R-1,000 S-SIL	1,000	2.3	.80	19.00
5R-2,500 S-SIL	2,500	1.4	.50	19.00
5R-5,000 S-SIL	5,000	1.0	.40	20.00
5R-10,000 S-SIL	10,000	.70	.25	21.40
5R-16,000 S-SIL	16,000	.55	.20	23.10
5R-1,000 SS-PAL	1,000	1.0	.40	26.45
5R-10,000 SS-PAL	10,000	.30	.13	29.20
5RO-1,000 S-SIL	1,000	2.3	.80	20.50
5RO-2,500 S-SIL	2,500	1.4	.50	20.50
5RO-5,000 S-SIL	5,000	1.0	.40	21.50
5RO-10,000 S-SIL	10,000	.70	.25	23.10
5RO-16,000 S-SIL	16,000	.55	.20	24.80

SERIES 41 SPDT INDUSTRIAL AC AND DC RELAYS

Rugged, versatile industrial relay. One-billion-operation mechanical life. Balanced design for coil overload capacity 4-6 times rated input; long contact life. Operates from on-off AC or DC signals, gradually changing DC signals. Pickup power: Adjustment S: 40 mW; ACS: .2 VA; ACG: .4 VA. Contact rating: ACG, 5 amps at 28 VDC/120 VAC; S, ACS: 2 amps. Temperature range, −67° to +185° F except plastic covers, to +158° F. All open and dust-covered types are UL and CSA Listed. **41F, 41FZ:** Unenclosed, screw mounting, solder terminals. Size, 1¹⁷⁄₆₄″ w. x 2³⁄₃₂″ d. x 1⁷⁄₁₆″ h. **41RO, 41ROZ:** Dust cover, 8-pin octal plug. Size, 1²¹⁄₆₄″ sq. x 2¹⁄₁₆″ h. **41RO6:** Plastic dust cover, 8-pin octal plug. Size, 1²³⁄₆₄″ sq. x 2⁷⁄₆₄″ h. **41JOZ:** Hermetically sealed, 8-pin octal plug. Size, 1⅝″ sq. x 2⅝″ h. **41R, 41RZ:** Dust cover, 5-pin plug. Size, 1³¹⁄₆₄″ sq. x 1²⁹⁄₃₂″ h. Weights: Enclosed, 5¼ oz. max.; unenclosed, 2½ oz.

AC TYPES

Sigma Type No.	Coil Ohms	Nominal Volts	Pickup Max.†	Net Ea., Disc. Sch. 1*
41FZ-10 ACG-BSL	10	6	4 V	$ 6.60
41FZ-200 ACG-BSL	200	24	18 V	7.00
41FZ-5,000 ACG-BSL	5,000	120	90 V	7.00
41FZ-35 ACS-SIL	35	6	4 V	7.70
41FZ-10,000 ACS-SIL	10,000	120	85 V	8.55
41JOZ-10,000 ACS-SIL	10,000	120	85 V	21.10
41JOZ-12,000 ACS-SIL	12,000	150	95 V	20.60
41ROZ-5,000 ACG-BSL	5,000	120	90 V	10.75
41RZ-5,000 ACG-BSL	5,000	120	90 V	9.80

DC TYPES

41F-200 S-SIL	200	6	15 mA	$ 7.35
41F-500 S-SIL	500	.....	9.0 mA	7.35
41F-1,000 S-SIL	1,000	12	6.5 mA	7.35
41F-2,500 S-SIL	2,500	.....	4.0 mA	7.70
41F-5,000 S-SIL	5,000	24	3.0 mA	7.70
41F-10,000 S-SIL	10,000	.....	2.0 mA	8.10
41F-200 G-BSL*	200	12	32 mA	7.00
41F-1,000 G-BSL*	1,000	24	14 mA	7.00
41F-5,000 G-BSL*	5,000	.....	6.5 mA	7.20
41R-1,000 S-SIL	1,000	12	6.5 mA	10.90
41R-5,000 S-SIL	5,000	24	3.0 mA	11.30
41R-8,000 S-SIL	8,000	.....	2.3 mA	11.75
41RO-1,000 S-SIL	1,000	12	6.5 mA	11.55
41RO-2,500 S-SIL	2,500	.....	4.0 mA	11.55
41RO-5,000 S-SIL	5,000	24	3.0 mA	12.00
41RO-10,000 S-SIL	10,000	.....	2.0 mA	12.35
41RO6-500 S-SIL	500	.....	9.0 mA	10.90
41RO6-1,000 S-SIL	1,000	12	6.5 mA	10.50
41RO6-2,500 S-SIL	2,500	.....	4.0 mA	10.50
41RO6-5,000 S-SIL	5,000	24	3.0 mA	10.70

SERIES 4 SPDT PLATE CIRCUIT DC RELAYS

Stable, precise, low cost. For vacuum tube and transistor drives, applications requiring high dropout or narrow differential, and operation from gradually changing or on-off signals. Ideal for circuits where energizing current does not drop to zero. Pickup power, 20 mW. Contact rating, 2 amps at 28 VDC/120 VAC resistive. Temperature range, +32° to +122° F. **4F:** Unenclosed, screw mounting, solder terminals. Size, 1¾″ w. x 1½″ d. x 1¹⁵⁄₃₂″ h. Weight, 2¼ oz. **4R:** UL and CSA Listed. Dust cover, 5-pin plug. Size, 1⅞″ sq. x 2¹⁹⁄₃₂″ h. Weight, 3¾ oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout Min. mADC	Net Each Disc. Sch. 1*
4F-1,000 S-SIL	1,000	4.5	2.0	$10.95
4F-2,500 S-SIL	2,500	3.0	1.3	10.95
4F-5,000 S-SIL	5,000	2.0	.90	11.55
4F-8,000 S-SIL	8,000	1.6	.75	11.95
4F-10,000 S-SIL	10,000	1.4	.65	11.95
4R-1,000 S-SIL	1,000	4.5	2.0	15.00
4R-2,500 S-SIL	2,500	3.0	1.3	16.55
4R-5,000 S-SIL	5,000	2.0	.90	15.45
4R-8,000 S-SIL	8,000	1.6	.75	15.90
4R-10,000 S-SIL	10,000	1.4	.65	15.90

SERIES 42 DPDT AC AND DC RELAYS

For general-purpose applications from alarm and control systems to demand meters and timing circuits. Combines sensitivity from 100 mW with rugged design for 1 billion operation mechanical life (1 million under load). Low power minimizes coil load in circuits with limited load-handling ability. Excellent stability, high circuit isolation; coil overload capacity 4 to 6 times rated input. High release for use in circuits with high idle current. Pickup power: Adjustment S: 100 mW; G: 200 mW; ACS: .3 VA; ACG; .5 VA. Contact ratings (at 28 VDC/120 VAC resistive): ACG, G: 5 A; ACS, S: 2 A. Dust-covered and open types UL and CSA Listed. Temperature range, −67° to +185° F except plastic covers, to +158° F. **42RO, 42ROZ:** Plastic dust cover, 8-pin octal plug. Size, 1²³⁄₆₄″ sq. x 2⁷⁄₆₄″ h. **42RO6, 42RO6Z:** Differ in wiring only. **42JOZ:** Hermetically sealed, 8-pin plug. Size, 1⅝″ sq. x 2⅝″ h. **42F:** Unenclosed, stud mounting, solder terminals. 1¹¹⁄₁₆″ w. x 1¹⁹⁄₃₂″ d. x 1¹³⁄₃₂″ h. Weight, 2½ to 5¼ oz.

AC TYPES

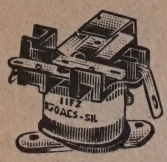
Sigma Type No.	Coil Ohms	Nominal Volts	Pickup Max.†	Net Ea., Disc. Sch. 1*
42JOZ-4,000 ACG-SIL	4,000	120 VAC	90 V	$19.20
42ROZ-8 ACG-SIL	8	6 VAC	4 V	11.15
42ROZ-50 ACG-SIL	50	12 VAC	9 V	11.15
42ROZ-200 ACG-SIL	200	24 VAC	18 V	11.15
42ROZ-4,000 ACG-SIL	4,000	120 VAC	90 V	11.15
42ROZ-7,000 ACS-SIL	7,000	120 VAC	90 V	13.30
42RO6Z-8 ACG-SIL	8	6 VAC	4 V	11.55
42RO6Z-4,000 ACG-SIL	4,000	120 VAC	90 V	11.20

DC TYPES

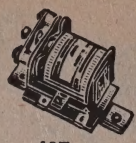
42F-150 G-SIL	150	.....	38 mA	$ 8.65
42F-500 G-SIL	500	.....	20 mA	8.65
42F-1,000 G-SIL	1,000	24 VDC	14 mA	8.65
42F-2,500 G-SIL	2,500	48 VDC	9.0 mA	8.65
42RO-50 G-SIL	50	6 VDC	65 mA	11.75
42RO-100 G-SIL	100	.....	45 mA	11.75
42RO-200 G-SIL	200	12 VDC	32 mA	11.15
42RO-500 G-SIL	500	.....	20 mA	11.15
42RO-1,000 G-SIL	1,000	24 VDC	14 mA	11.15
42RO-2,500 G-SIL	2,500	48 VDC	9.0 mA	11.15
42RO-5,000 G-SIL	5,000	.....	6.5 mA	11.55
42RO-10,000 G-SIL	10,000	.....	4.5 mA	11.90
42RO-12,000 G-SIL	12,000	.....	4.0 mA	12.45
42RO-100 S-SIL	100	.....	32 mA	12.80
42RO-150 S-SIL	150	6 VDC	26 mA	12.25
42RO-200 S-SIL	200	.....	22 mA	12.80
42RO-500 S-SIL	500	12 VDC	14 mA	12.25
42RO-1,000 S-SIL	1,000	.....	10 mA	12.25
42RO-2,500 S-SIL	2,500	24 VDC	6.2 mA	12.25
42RO-5,000 S-SIL	5,000	.....	4.5 mA	12.70
42RO-10,000 S-SIL	10,000	.....	3.1 mA	13.00
42RO6-50 G-SIL	50	6 VDC	65 mA	11.75
42RO6-500 G-SIL	500	.....	20 mA	11.15
42RO6-1,000 G-SIL	1,000	24 VDC	14 mA	11.15
42RO6-2,500 G-SIL	2,500	48 VDC	9.0 mA	11.15
42RO6-5,000 G-SIL	5,000	.....	6.5 mA	11.55
42RO6-10,000 G-SIL	10,000	.....	4.5 mA	11.90
42RO6-500 S-SIL	500	12 VDC	14 mA	12.80
42RO6-1,000 S-SIL	1,000	.....	10 mA	12.25
42RO6-2,500 S-SIL	2,500	24 VDC	6.2 mA	12.25

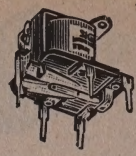
†Dropout will always be higher than 20% of max. pickup.

★SEE ANOTHER SIGMA PAGE FOR QUANTITY DISCOUNTS



11F


48F


65FP1A

50F2

50RO1

67R4

GENERAL PURPOSE RELAYS

SERIES 48 SPDT LOW COST DC RELAYS

Excellent, low cost, sensitive relay for use in burglary, fire or police alarm systems requiring operation from 10 mW minimum input signal. Bridge-type contact structure. Solid contacts. Compliant armature for good contact wipe. Contact rating (at 28 VDC/120 VAC resistive): 2 amps. Temperature range, −4° to +158° F. **48F:** Unenclosed, screw mounting, solder terminals. Size, 1 17/64" w. x 2 1/2" d. x 1 7/8" h. Weight, 3 oz. **48RO:** Plastic dust cover, 8-pin octal plug. Size, 1 33/64" sq. x 2 1/64" h. Weight, 4 oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout, Min. mADC	Net Each Disc. Sch. 1*
48F-1,000 G-SIL	1,000	3.2	.32	$ 9.00
48F-2,500 G-SIL	2,500	2.0	.2	9.00
48RO-1,000 G-SIL	1,000	3.2	.32	10.45
48RO-2,500 G-SIL	2,500	2.0	.2	10.45

SERIES 11 SPDT SMALL, LOW-COST RELAYS

Rated for 1-amp switching at 28 VDC/120 VAC resistive. DC operation from sliding-current or on-off 50 mW signals; AC operation from .3 VA on-off signals. Good environmental capability. Temperature range, −40° to +122° F. UL and CSA Listed. Unenclosed. **Type 11FZ and 11F:** Screw mounting; 5 solder terminals. Size, 1 1/2" w. x 1 3/16" d. x 1 1/16" h. **Type 11F2:** Same, with insulated base. Size, 1 1/2" w. x 1 17/32" d. x 1 3/16" h. **Type 11FP:** Shoulder lug mounting; printed circuit terminals. Size, 1 7/32" sq. x 1 1/32" h. Weight, 1.2 oz. max.

AC TYPES

Sigma Type No.	Coil Ohms	Pickup Max., mA	Nominal Volts	Net Each, Disc. Sched. *: AC, 1; DC, 2
11FZ-25-ACS SIL	25	.....	6	$6.10
11FZ-550-ACS SIL	550	.....	24	6.25
11FZ-9,000-ACS SIL	9,000	.....	120	7.10

DC TYPES

11F-100-G SIL	100	22.0	.....	$4.00
11F-250-G SIL	250	14.0	6	3.95
11F-550-G SIL	550	9.5	.....	3.95
11F-1,000-G SIL	1,000	7.0	12	3.95
11F-1,500-G SIL	1,500	5.8	.....	3.95
11F-2,300-G SIL	2,300	4.6	.....	3.95
11F-6,000-G SIL	6,000	2.9	24	4.30
11F-9,000-G SIL	9,000	2.4	.....	4.65
11F2-1,000-G SIL	1,000	7.0	12	4.30
11F2-2,300-G SIL	2,300	4.6	.....	4.30
11F2-6,000-G SIL	6,000	2.9	24	4.65
11F2-9,000-G SIL	9,000	2.4	.....	5.15
11FP-1,000-G SIL	1,000	7.0	12	4.00
11FP-1,500-G SIL	1,500	5.8	.....	4.30
11FP-2,300-G SIL	2,300	4.6	.....	4.00
11FP-6,000-G SIL	6,000	2.9	24	4.65

SERIES 65 SPDT COMMERCIAL DC RELAYS

Small, low-cost commercial relay offering positive response to low-power signals. Excellent adjustment stability, sturdy construction, 5-million operation mechanical life. Typical applications: Remote TV channel selectors, vending machines, semi-automatic home slide projectors, automatic toys and games. Contact rating, 3 amp at 28 VDC/120 VAC resistive. Nominal power, 90 mW. Temperature range, +14° to +158° F. All unenclosed, screw mounting. **65F1A:** Solder terminals. Size, 1 1/16" w. x 1 3/16" d. x 63/64" h. **65FP1A:** Printed-circuit terminals. Size, 1 1/16" w. x 1 3/16" d. x 1 1/4" h. Weight, 1 oz. UL and CSA Listed.

Sigma No.	DC Volts	Coil Ohms	Net Each, Disc. Sch. 2*
65F1A-6DC	6	410	$1.80
65F1A-12DC	12	1,640	1.80
65F1A-24DC	24	6,560	1.80
65FP1A-6DC	6	410	1.90
65FP1A-12DC	12	1,640	1.90
65FP1A-24DC	24	6,560	1.90

★QUANTITY DISCOUNT SCHEDULES

Disc. Sch. 1 Lots of	Disc. Sch. 1 Discount	Disc. Sch. 2 Lots of	Disc. Sch. 2 Discount	Disc. Sch. 3 Lots of	Disc. Sch. 3 Discount	Disc. Sch. 4 Lots of	Disc. Sch. 4 Discount
1–49	Net	1–99	Net	1–19	Net	1–9	Net
50–74	5%	100–249	5%	20–99	18%	10–49	10%
75–99	10%	250–499	10%	100–499	28%	50–99	20%
100–249	20%	500–2499	30%	500–999	38%	100–249	30%

LARGER DISCOUNTS AVAILABLE ON REQUEST

SERIES 50 SPDT, DPDT, 3PDT AC AND DC RELAYS

Highly efficient, compact, low-cost relay for switching of industrial loads of 5 amps to activate small solenoids or other relays. Mechanical life, 10 million operations. 50ROL types have indicating lamp which lights when coil is energized. UL and CSA Listed. Temperature range: 50F, +14° to +158° F; 50RO and 50ROL, to +131° F. **50F:** Unenclosed, screw mounting, solder terminals. Size, 1 11/64" sq. x 1 15/16" h. Weight, 2 oz. **50RO and 50ROL:** Plastic dust cover. Size, 1 3/8" sq. x 2 3/32" h. **50RO1 and 50RO2:** 8-pin octal plug; **50RO3,** standard 11-pin plug. Weight, 3 oz. **Note:** Silver-cadmium-oxide contacts, rated 10 amps at 28 VDC/120 VAC resistive, are available on all relays listed below. To order, add suffix **SCO** to number (e.g., 50F1-6AC-**SCO**); add **10c** to prices shown for SPDT types; **15c** to DPDT; **20c** to 3PDT.

SPDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1* Unenclosed* Sigma No. 50F1-	Net Each, Disc. Sch. 1* Enclosed* Sigma No. 50RO1-
6 AC	5.9	2.0 VA	$3.55	$6.30
12 AC	22	2.0 VA	3.55	6.30
24 AC	90	2.0 VA	3.55	6.30
120 AC	2250	2.0 VA	3.55	6.30
240 AC	8380	2.0 VA	4.20	6.70
6 DC	28	1.35 W	3.50	6.15
12 DC	110	1.35 W	3.50	6.15
24 DC	450	1.35 W	3.50	6.15
48 DC	1720	1.35 W	3.50	6.15
110 DC	10,000	1.35 W	4.10	6.65

DPDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1* Unenclosed* Sigma No. 50F1-	Net Each, Disc. Sch. 1* Enclosed* Sigma No. 50RO1-
6 AC	5.9	2.0 VA	$4.40	$6.95
12 AC	22	2.0 VA	4.40	6.95
24 AC	90	2.0 VA	4.40	6.95
120 AC§	2250	2.0 VA	4.40	6.95
240 AC	8380	2.0 VA	4.85	7.45
6 DC	28	1.35 W	4.00	6.95
12 DC	110	1.35 W	4.00	6.95
24 DC†	450	1.35 W	4.00	6.95
48 DC	1720	1.35 W	4.00	6.95
110 DC	10,000	1.35 W	4.50	7.40

3PDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1* Unenclosed* Sigma No. 50F1-	Net Each, Disc. Sch. 1* Enclosed* Sigma No. 50RO1-
6 AC	5.9	2.0 VA	$4.85	$8.00
12 AC	22	2.0 VA	4.85	8.00
24 AC	90	2.0 VA	4.85	8.00
120 AC#	2250	2.0 VA	4.85	8.00
240 AC	8380	2.0 VA	5.35	8.60
6 DC	28	1.35 W	4.45	8.00
12 DC	110	1.35 W	4.45	8.00
24 DC‡	450	1.35 W	4.45	8.00
48 DC	1720	1.35 W	4.45	8.00
110 DC	10,000	1.35 W	5.05	8.50

*To order, add suffix for voltage to Sigma No.; e.g., 50RO1-**6AC.**
†Available as **50ROL2-24DC-SCO**—Net Each..... **$8.45***
‡Available as **50ROL3-24DC-SCO**—Net Each..... **9.45***
§Available as **50ROL2-120AC-SCO**—Net Each..... **8.45***
#Available as **50ROL3-120AC-SCO**—Net Each..... **9.45***

SERIES 67 4PDT MINIATURE AC AND DC RELAYS

Miniature, rugged relays. Solder or printed-circuit terminal sockets for fast chassis top mounting and easy wiring. Relay and sockets interchangeable with comparable types. Plastic dust cover, stud mounting, 14-pin plug. **Contact Rating:** 5 amps at 28 VDC/120 VAC resistive. **Temperature Range:** −4° to +140° F. **Operations at Rated Load:** 100,000 min.; 100 million mechanical DC types; 50 million AC types. UL and CSA Listed. **Size:** 1 7/64" w. x 55/64" d. x 1 19/64" h. Weight, 1 1/4 oz.

Sigma No. and Volts	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1*
67R4-12AC	43	1.2 VA	$5.50
67R4-24AC	160	1.2 VA	5.50
67R4-120AC	3,900	1.2 VA	5.95
67R4-6DC	40	900 mW	4.85
67R4-12DC	160	900 mW	4.85
67R4-24DC	650	900 mW	4.85
67R4-48DC	2,600	900 mW	5.10
67R4-110DC	11,000	900 mW	5.60
67RV4-12DC-SCO*	160	900 mW	4.85
67RV4-24DC-SCO*	650	900 mW	4.85
67RV4-24AC-SCO*	160	1.2 VA	5.50
67RV4-120AC-SCO*	3,900	1.2 VA	5.95
AD28	Solder term. skt. for 67R4		.70
AD29	PC terminal socket for 67R4		.70

*Same as 67R4, but with arc barrier added.

GENERAL PURPOSE RELAYS

SERIES 62 DPDT, 4PDT, 6PDT UNIVERSAL-MOUNTING DC RELAYS...PLUS SOCKETS

Economical, low-level to 5-amp multiple circuit switching. Sockets designed for fast, easy connections. Available in choice of solder terminals or printed-circuit terminals. Interchangeable with similar commercial relays in communications, data processing, process control equipment. One million operations at max. load; 100 million mechanical. **Terminals:** DPDT type has 8-pin plug; 4PDT, 14-pin plug; 6PDT, 20-pin plug. **Temperature Range:** +14° to +158° F. Plastic dust cover, stud mounting. **Size:** All types: 1 17/64″ h. x 49/64″ d.; **62R2,** 61/64″ w.; **62R4,** 1 3/16″ w.; **62R6,** 1 23/64″ w. Weight, 1 oz.

2-AMP STANDARD CONTACTS

Power rating, 2 amps at 28 VDC and 120 VAC resistive.

Sigma No. and Nom. Coil Volts					
Solder Terminals	PC Terminals	*	Coil Ohms	Nominal Power	Net Ea., Disc. Sch. 1*
62R2-6DC	62RE22-6DC	†	52	700 mW	$3.55
62R2-12DC	62RE22-12DC	†	185	700 mW	3.55
62R2-24DC	62RE22-24DC	†	700	700 mW	3.55
62R2-48DC	62RE22-48DC	†	2,500	700 mW	3.70
62R2-110DC	62RE22-110DC	†	15,000	700 mW	5.20
62R4-6DC	62RE42-6DC	‡	52	700 mW	4.00
62R4-12DC	62RE42-12DC	‡	185	700 mW	4.00
62R4-24DC	62RE42-24DC	‡	700	700 mW	4.00
62R4-48DC	62RE42-48DC	‡	2,500	700 mW	4.20
62R4-110DC	62RE42-110DC	‡	15,000	700 mW	5.70
62R6-6DC	62RE62-6DC	§	25	1.4 W	5.10
62R6-12DC	62RE62-12DC	§	90	1.4 W	5.10
62R6-24DC	62RE62-24DC	§	430	1.4 W	5.10
62R6-48DC	62RE62-48DC	§	1,550	1.4 W	5.35
62R6-110DC	62RE62-110DC	§	9,000	1.4 W	6.40

5-AMP STANDARD SILVER CADMIUM OXIDE CONTACTS

To order 5 amp standard silver cadmium oxide contacts (SCO) add letters **SCO** after Sigma No. Example: 62R2-6DC-**SCO**, or 62RE22-6DC-**SCO**. Power rating, 5 amps at 28 VDC; 4 amps at 120 VAC resistive.

62R2-6DC	62RE22-6DC	†	52	700 mW	$3.55
62R2-12DC	62RE22-12DC	†	185	700 mW	3.55
62R2-24DC	62RE22-24DC	†	700	700 mW	3.55
62R2-48DC	62RE22-48DC	†	2,500	700 mW	3.70
62R2-110DC	62RE22-110DC	†	15,000	700 mW	5.20
62R4-6DC	62RE42-6DC	‡	52	700 mW	4.00
62R4-12DC	62RE42-12DC	‡	185	700 mW	4.00
62R4-24DC	62RE42-24DC	‡	700	700 mW	4.00
62R4-48DC	62RE42-48DC	‡	2,500	700 mW	4.20
62R4-110DC	62RE42-110DC	‡	15,000	700 mW	5.70
62R6-6DC	62RE62-6DC	§	25	1.4 W	5.10
62R6-12DC	62RE62-12DC	§	90	1.4 W	5.10
62R6-24DC	62RE62-24DC	§	430	1.4 W	5.10
62R6-48DC	62RE62-48DC	§	1,550	1.4 W	5.35
62R6-110DC	62RE62-110DC	§	9,000	1.4 W	6.40

BIFURCATED CONTACTS

Power rating, 2 amps at 28 VDC; 1 amp at 120 VAC resistive. Life, 50 million operations, switching dry circuit loads; 10 million at max. load from low-power transistor drive and minimum coil heating.

62R2T-6DC	62RE22T-6DC	†	52	700 mW	$4.05
62R2T-12DC	62RE22T-12DC	†	185	700 mW	4.05
62R2T-24DC	62RE22T-24DC	†	700	700 mW	4.05
62R2T-48DC	62RE22T-48DC	†	2,500	700 mW	4.15
62R2T-110DC	62RE22T-110DC	†	15,000	700 mW	5.60
62R4T-6DC	62RE42T-6DC	‡	52	700 mW	4.60
62R4T-12DC	62RE42T-12DC	‡	185	700 mW	4.60
62R4T-24DC	62RE42T-24DC	‡	700	700 mW	4.60
62R4T-48DC	62RE42T-48DC	‡	2,500	700 mW	4.75
62R4T-110DC	62RE42T-110DC	‡	15,000	700 mW	6.20
62R6T-6DC	62RE62T-6DC	§	25	1.4 W	5.60
62R6T-12DC	62RE62T-12DC	§	90	1.4 W	5.60
62R6T-24DC	62RE62T-24DC	§	430	1.4 W	5.60
62R6T-48DC	62RE62T-48DC	§	1,550	1.4 W	5.70
62R6T-110DC	62RE62T-110DC	§	9,000	1.4 W	7.20

SENSITIVE TYPES

Power rating, 1 amp at 28 VDC and 120 VAC resistive. Life, 1 million operations at maximum load.

Sigma No. and Resis., Ohms			Min. mA		Max. mA	Net Ea., Disc.
Solder Terminals	PC Terminals	*	DC	mW	DC	Sch. 1*
62R2S-1000	62RE22S-1000	†	.85	85	8.5	$4.00
62R2S-2500	62RE22S-2500	†	.58	85	5.8	4.00
62R2S-5000	62RE22S-5000	†	.41	85	4.1	4.40
62R2S-10,000	62RE22S-10,000	†	.31	85	3.1	4.85
62R2S-15,000	62RE22S-15,000	†	.26	85	2.6	5.30
62R4S-1000	62RE42S-1000	‡	1.3	175	13.0	4.40
62R4S-2500	62RE42S-2500	‡	.84	175	8.4	4.40
62R4S-5000	62RE42S-5000	‡	.62	175	6.2	4.85
62R4S-10,000	62RE42S-10,000	‡	.45	175	4.5	5.30
62R4S-15,000	62RE42S-15,000	‡	.35	175	3.5	5.60
62R6S-1000	62RE62S-1000	§	1.6	250	16.0	5.60
62R6S-2500	62RE62S-2500	§	1.0	250	10.0	5.60
62R6S-5000	62RE62S-5000	§	.72	250	7.2	6.20
62R6S-10,000	62RE62S-10,000	§	.50	250	5.0	6.70
62R6S-15,000	62RE62S-15,000	§	.42	250	4.2	7.05

*Contacts: †DPDT. ‡4PDT. §6PDT.

★QUANTITY DISCOUNTS ON ANOTHER SIGMA PAGE

62R6 and Socket

68R

59F1D

SERIES 62 (CONT'D.)

SOCKETS

Include grounding clip and hold-down spring.

Sigma No.	Description	Net Each, Sch. 1*
AD22	Solder terminal socket for DPDT	$0.65
AD41	PC terminal socket for DPDT*	.65
AD24	Solder terminal socket for 4PDT	.75
AD42	PC terminal socket for 4PDT*	.75
AD26	Solder terminal socket for 6PDT*	1.05
AD43	PC terminal socket for 6PDT*	1.05

*100″ grid.

SERIES 68 SPDT, DPDT, 3PDT UNIVERSAL-MOUNTING AC AND DC RELAYS, PLUS SOCKETS

Versatile, low cost and high efficiency for production-line switching of light to medium power loads. Fast installation; .187″ terminals may be soldered, quick-connected, or plugged into standard sockets. Life, 1 million operations at 28 VDC; ½ million at 120 VAC. Mechanical life, 10 million operations, UL and CSA Listed. **Contacts:** Rated 10 amps. SPDT has 5 terminals; DPDT, 8 terminals; 3PDT, 11 terminals. **Temperature Range:** AC types SPDT and DPDT, −49° F to +131° F; 3PDT to +113° F; DC types to +158° F. **Size:** 1.531″ w. x 1.406″ d. x 1.906″ h. in polycarbonate dust cover. Wt., 2.9 oz. max.

DC TYPES

Nominal power rating, 1.2 watts for all types.

Sigma No. and Nom. Coil Volts	Contacts	Coil Ohms	Pickup V Max.	Net Ea., Disc. Sch. 1*
68R1-6DC-SCO	SPDT	32	4.5	$3.75
68R1-12DC-SCO	SPDT	120	9	3.75
68R1-24DC-SCO	SPDT	470	18	3.75
68R1-110DC-SCO	SPDT	10,000	83	4.25
68R2-6DC-SCO	DPDT	32	4.5	4.25
68R2-12DC-SCO	DPDT	120	9	4.25
68R2-24DC-SCO	DPDT	470	18	4.25
68R2-110DC-SCO	DPDT	10,000	83	4.85
68R3-6DC-SCO*	3PDT	32	4.5	4.85
68R3-12DC-SCO*	3PDT	120	9	4.85
68R3-24DC-SCO*	3PDT	470	18	4.85
68R3-110DC-SCO*	3PDT	10,000	83	5.35

AC TYPES

Nominal power rating, 2.1 VA SPDT and DPDT; 2.5 VA, 3PDT.

68R1-6AC-SCO	SPDT	6	5.1	$3.90
68R1-12AC-SCO	SPDT	21	10.2	3.90
68R1-24AC-SCO	SPDT	75	20.4	3.90
68R1-120AC-SCO	SPDT	2,250	98	3.90
68R1-240AC-SCO	SPDT	9,110	196	4.25
68R2-6AC-SCO	DPDT	6	5.1	4.75
68R2-12AC-SCO	DPDT	21	10.2	4.75
68R2-24AC-SCO	DPDT	75	20.4	4.75
68R2-120AC-SCO	DPDT	2,250	98	4.75
68R2-240AC-SCO	DPDT	9,110	196	5.24
68R3-6AC-SCO*	3PDT	4.5	5.1	5.35
68R3-12AC-SCO*	3PDT	19	10.2	5.35
68R3-24AC-SCO*	3PDT	74	20.4	5.35
68R3-120AC-SCO*	3PDT	2,000	98	5.35
68R3-240AC-SCO*	3PDT	7,500	196	5.85

*Also available with top mounting flange (total height, 2.90″) molded on to case, at same price; to order, use prefix **68R34-** (e.g., 68R34-6AC-SCO).

SOCKETS

Sigma No.	Terminals and Use	Net Each, Sch. 1*
AD62-1	Solder term.; all but 68R34	$0.85
AD63	PC terms.; all but 68R34	.95

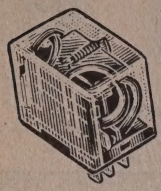
SERIES 59 SPDT SNAP-SWITCH DC RELAYS

Dependable, low-cost relay for commercial applications where economy and size determine choice. Snap-switch contact assembly provides positive operation from on-off or slowly changing signals. Contact rating, 2 amps at 28 VDC/120 VAC resistive. Mechanical life, 1 million operations. Temperature range, +14° to +158° F. UL and CSA Listed. **Type 59F1D:** Unenclosed, screw mounting, solder terminals. Size, 1⅛″ w. x 29/32″ d. x 1 3/64″ h. Weight, .8 oz. **Type 59AO1D:** Metal dust cover, 8-pin octal plug. Size, 1 3/16″ dia. x 1 19/32″ h. Weight, 1.5 oz.

Sigma No.	Nom. Coil VDC	Coil Ohms	Net Each, Disc. Sch. 2*
59F1D-6DC	6	120	$3.75
59F1D-12DC	12	465	3.75
59F1D-24DC	24	1,800	3.75
59AO1D-6DC	6	120	6.45
59AO1D-12DC	12	465	6.45
59AO1D-24DC	24	1,800	6.45

GENERAL PURPOSE RELAYS

SERIES 76 AC AND DC—DPDT, 4PDT



Subminiature, large capacity relay for heavy duty industrial or consumer applications provides continuous multipole switching of resistive loads up to 10 amp each pole at 120 VAC. Mechanical life, 10,000,000 operations, min. Electrical life, 100,000 operations at rated load. Temperature range, min., −40° F; max., AC, +131° F; DC, +158° F.

Sigma No.	Nom. Volts	Resis., Ohms	Contacts	Net Each, Disc. Sch. 1*
76R2-6DC-SCO	6 DC	40	DPDT	$4.35
76R2-12DC-SCO	12 DC	160	DPDT	4.35
76R2-24DC-SCO	24 DC	650	DPDT	4.35
76R4-6DC-SCO	6 DC	25	4PDT	5.90
76R4-12DC-SCO	12 DC	100	4PDT	5.90
76R4-24DC-SCO	24 DC	350	4PDT	5.90
76R2-24AC-SCO	24 AC	160	DPDT	4.85
76R2-120AC-SCO	120 AC	3900	DPDT	5.35
76R4-24AC-SCO	24 AC	78	4PDT	6.40
76R4-120AC-SCO	120 AC	2400	4PDT	7.20

SOCKETS

Sigma No.	Description	Net Each, Disc. Sch. 1*
AD74	Solder terminal socket for DPDT	$0.90
AD75	Solder terminal socket for 4PDT	1.00
AD84	PC terminal socket for DPDT	.90
AD85	PC terminal socket for 4PDT	1.00

SERIES 77 AC AND DC—DPDT, 3PDT

Series 77

Series 78

Versatile, low cost, miniature relay for use in small business machines, alarm systems, automatic toys, communication systems. Silver, gold plated contacts provide 100,000 operations at 28 VDC or 120 VAC. Mechanical life, 5,000,000 operations at 2 amp resistive load. Temperature range, +14° to +150° F.

Sigma No.						Net Ea. Disc. Sch. 1*
Solder Terminals	PC Terminals	Nominal Volts	Resis., Ohms	Contacts		
77R2-6DC	77RE2-6DC	6 DC	31	DPDT		$2.45
77R2-12DC	77RE2-12DC	12 DC	125	DPDT		2.45
77R2-24DC	77RE2-24DC	24 DC	500	DPDT		2.45
77R3-6DC	77RE3-6DC	6 DC	31	3PDT		4.35
77R3-12DC	77RE3-12DC	12 DC	125	3PDT		4.35
77R3-24DC	77RE3-24DC	24 DC	500	3PDT		4.35
77R2-24AC	77RE2-24AC	24 AC	250	DPDT		3.25
77R2-120AC	77RE2-120AC	120 AC	5750	DPDT		4.10

SOCKETS

Sigma Number	Description	Net Each, Disc. Sch. 1*
AD82	Solder terminal sockets	$1.15
AD83	Printed circuit terminal sockets	1.35

SERIES 78 AC AND DC—SPDT

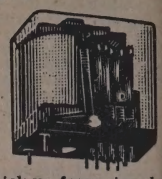
Subminiature relay for printed circuit use. Polypropylene case for handling and reduction of contact contamination from solder flux and degreasing solvents. Positive response to power coil signals as low as .4 watts. **Life Rated:** 1,000,000 operations, mechanically; 100,000 operations, electrically, min. Operating temperature range, +14° F to +158° F.

Sigma No.	Nominal Volts	Resis., Ohms	Contacts	Net Each, Disc. Sch. 2*
78RE1-6DC	6 DC	100	SPDT	$1.40
78RE1-12DC	12 DC	400	SPDT	1.40
78RE1-24DC	24 DC	1600	SPDT	1.60
78RE1-120AC	120 AC	5500	SPDT	2.45

★QUANTITY DISCOUNTS ON ANOTHER SIGMA PAGE

GENERAL PURPOSE RELAYS

SERIES 70 DPDT, 4PDT, 6PDT DC RELAYS AND SOCKETS



Miniature industrial relay for low-level to 5-amp multiple circuit switching. Choice of solder or printed circuit terminal sockets for fast, easy connection. UL and CSA approved. Interchangeable with similar commercial relays in communications, data processing, process control equipment and recording devices. Choice of voltage adjusted (standard or bifurcated contacts) or current sensitive adjusted. Voltage adjusted with bifurcated contacts rated at 50 million operations. Sensitive current-adjusted pick up from signals as low as 85 mW. Mechanical life of both types is 100 million operations. **Temperature Range:** +14° to +158° F.

2-AMP STANDARD CONTACTS

Sigma No. and Nom. Coil Volts						Net Ea., Disc. Sch. 1*
Solder Terminals	PC Terminals	*	Coil Ohms	Nominal Power		
70R2-6DC	70RE22-6DC	†	52	700 mW		$3.55
70R2-12DC	70RE22-12DC	†	185	700 mW		3.55
70R2-24DC	70RE22-24DC	†	700	700 mW		3.55
70R2-48DC	70RE22-48DC	†	2,500	700 mW		3.70
70R2-110DC	70RE22-110DC	†	15,000	700 mW		5.20
70R4-6DC	70RE42-6DC	‡	52	700 mW		4.00
70R4-12DC	70RE42-12DC	‡	185	700 mW		4.00
70R4-24DC	70RE42-24DC	‡	700	700 mW		4.00
70R4-48DC	70RE42-48DC	‡	2,500	700 mW		4.20
70R4-110DC	70RE42-110DC	‡	15,000	700 mW		5.70
70R6-6DC	70RE62-6DC	§	25	1.4 W		5.10
70R6-12DC	70RE62-12DC	§	90	1.4 W		5.10
70R6-24DC	70RE62-24DC	§	430	1.4 W		5.10
70R6-48DC	70RE62-48DC	§	1,550	1.4 W		5.35
70R6-110DC	70RE62-110DC	§	9,000	1.4 W		6.40

5 AMP STANDARD SILVER CADMIUM OXIDE CONTACTS

To order 5 amp standard silver cadmium oxide contacts (SCO) add letters **SCO** after Sigma No. Example: 70R2-6DC-**SCO**, or 70RE22-6DC-**SCO**.

70R2-6DC	70RE22-6DC	†	52	700 mW	$3.70
70R2-12DC	70RE22-12DC	†	185	700 mW	3.70
70R2-24DC	70RE22-24DC	†	700	700 mW	3.70
70R2-48DC	70RE22-48DC	†	2,500	700 mW	3.80
70R2-110DC	70RE22-110DC	†	15,000	700 mW	5.30
70R4-6DC	70RE42-6DC	‡	52	700 mW	4.20
70R4-12DC	70RE42-12DC	‡	185	700 mW	4.20
70R4-24DC	70RE42-24DC	‡	700	700 mW	4.20
70R4-48DC	70RE42-48DC	‡	2,500	700 mW	4.40
70R4-110DC	70RE42-110DC	‡	15,000	700 mW	5.95
70R6-6DC	70RE62-6DC	§	25	1.4 W	5.50
70R6-12DC	70RE62-12DC	§	90	1.4 W	5.50
70R6-24DC	70RE62-24DC	§	430	1.4 W	5.50
70R6-48DC	70RE62-48DC	§	1,550	1.4 W	5.70
70R6-110DC	70RE62-110DC	§	9,000	1.4 W	6.60

2-AMP BIFURCATED CONTACTS#

70R2T-6DC	70RE2T-6DC	†	52	700 mW	$4.05
70R2T-12DC	70RE2T-12DC	†	185	700 mW	4.05
70R2T-24DC	70RE2T-24DC	†	700	700 mW	4.05
70R2T-48DC	70RE2T-48DC	†	2,500	700 mW	4.15
70R2T-110DC	70RE2T-110DC	†	15,000	700 mW	5.60
70R4T-6DC	70RE4T-6DC	‡	52	700 mW	4.60
70R4T-12DC	70RE4T-12DC	‡	185	700 mW	4.60
70R4T-24DC	70RE4T-24DC	‡	700	700 mW	4.60
70R4T-48DC	70RE4T-48DC	‡	2,500	700 mW	4.75
70R4T-110DC	70RE4T-110DC	‡	15,000	700 mW	6.20
70R6T-6DC	70RE6T-6DC	§	25	1.4 W	5.60
70R6T-12DC	70RE6T-12DC	§	90	1.4 W	5.60
70R6T-24DC	70RE6T-24DC	§	430	1.4 W	5.60
70R6T-48DC	70RE6T-48DC	§	1,550	1.4 W	5.70
70R6T-110DC	70RE6T-110DC	§	9,000	1.4 W	7.20

*Contacts: †DPDT. ‡4PDT. §6PDT. #2 amp at 28 VDC; 1 amp at 120 VAC.

1-AMP SENSITIVE TYPES

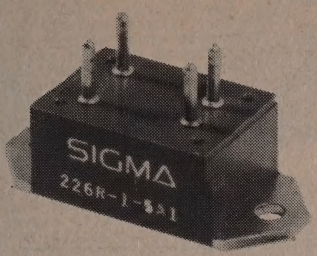
Sigma No. and Resis., Ohms	Contacts	Min. Dropout mADC	Pickup Power mW	Max. Pickup mADC	Net Ea., Disc. Sch. 1*
70R2S-2500	DPDT	.58	85	5.8	$4.00
70R2S-5000	DPDT	.41	85	4.1	4.40
70R2S-10,000	DPDT	.31	85	3.1	4.85
70R4S-2500	4PDT	.84	175	8.4	4.40
70R4S-5000	4PDT	.62	175	6.2	4.85
70R4S-10,000	4PDT	.45	175	4.5	5.30
70R6S-2500	6PDT	1.0	250	10.0	5.60
70R6S-5000	6PDT	.72	250	7.2	6.20
70R6S-10,000	6PDT	.50	250	5.0	6.70

SOCKETS

Sigma No.	Description	Net Ea., Disc. Sch. 1*
AD64	Solder terminal socket for DPDT	$0.65
AD65	Solder terminal socket for 4PDT	.75
AD66	Solder terminal socket for 6PDT	1.05
AD67	PC terminal socket for DPDT	.65
AD68	PC terminal socket for 4PDT	.75
AD69	PC terminal socket for 6PDT	1.05

GENERAL PURPOSE, SOLID STATE AND HYBRID RELAYS

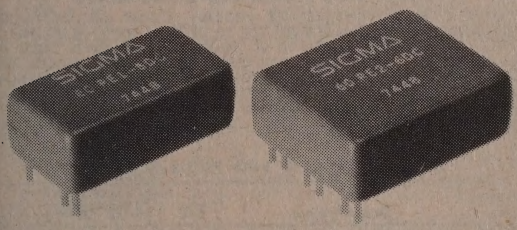
SOLID STATE RELAYS
SERIES 226 MINIATURE



ow cost solid state relay designed to switch low to medium irrent AC loads from low level logic signals. Can be PC board ounted, projecting less than 0.5". Can be chassis mounted and onnected with standard Molex slip-on connectors. Compatible ith TTL logic. Can be operated from AC or DC input. Unit is ompletely potted to resist shock and moisture effects. DC input ersions have LED activated opto-isolator input. AC input ersions have incandescent or neon activated opto-isolators. perate time, 8 msec typ. Release time, 30 msec typ. Dielectric rength, 2500 VAC rms from input to output and case. Size, 1.5" x 65" x 0.75" high for chassis version; 0.59" high for PC version.

Sigma No.	Input		Output		Net Each, Disc. Sch. 4*
	Voltage	Current	Volts	Current	
CHASSIS MOUNT					
26R-1-5A1	5 DC	15mA	120	7A	$6.90
26R-1-12A1	12 DC	15mA	120	7A	6.90
26R-2-5A1	5 DC	15mA	240	7A	7.90
26R-2-12A1	12 DC	15mA	240	7A	7.90
PRINTED-CIRCUIT MOUNT					
26RE-1-5A1	5 DC	15mA	120	7A	$6.90
26RE-1-12A1	12 DC	15mA	120	7A	6.90
26RE-2-5A1	5 DC	15mA	240	7A	7.90
26RE-2-12A1	12 DC	15mA	240	7A	7.90

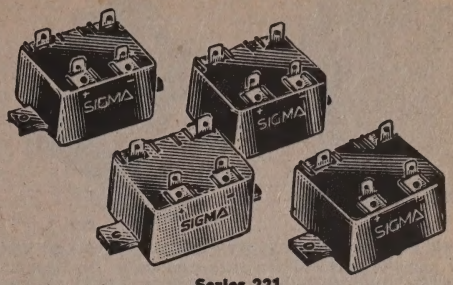
GENERAL PURPOSE RELAYS
SERIES 60 PRINTED CIRCUIT RELAYS



he installed height of 0.415" is ideal for high density PC board pplications. Ultrasonically welded case protects contacts from ontaminants and solvents. Rugged terminal pins, tightly anhored to the case, can be bent safely without affecting internal ontact adjustment. High contact force plus self-cleaning action ssure minimum contact resistance. Series 60 relays are available n both SPDT and DPDT models, with a choice of sensitive or tandard coils. Typical applications include: telephone switching quipment, alarm systems, business machines, control systems, ommunications equipment, and data processing equipment. Can e driven directly from TTL driver circuits. Operate time, 3 msec yp. Release time, 2 msec typ. Dielectric strength, 1500 VAC ms between contact and coil.

Sigma No.	Nom. Volts	Resis. Ohms	Contacts	Coil	Net Each, Disc. Sch .4*
0RE1-5DC	5	43	SPDT	Stan.	$2.95
0RE1-6DC	6	47	SPDT	Stan.	2.95
0RE1-12DC	12	200	SPDT	Stan.	2.95
0RE1-24DC	24	950	SPDT	Stan.	3.10
0RE1S-5DC	5	64	SPDT	Sens.	2.85
0RE1S-6DC	6	66	SPDT	Sens.	2.85
0RE1S-12DC	12	310	SPDT	Sens.	2.85
0RE1S-24DC	24	950	SPDT	Sens.	3.00
0RE2-5DC	5	32	DPDT	Stan.	3.90
0RE2-6DC	6	45	DPDT	Stan.	3.90
0RE2-12DC	12	170	DPDT	Stan.	3.90
0RE2-24DC	24	670	DPDT	Stan.	4.00
0RE2S-5DC	5	42	DPDT	Sens.	3.70
0RE2S-6DC	6	60	DPDT	Sens.	3.70
0RE2S-12DC	12	260	DPDT	Sens.	3.70
0RE2S-24DC	24	670	DPDT	Sens.	3.80

HYBRID RELAYS
SERIES 221—4 AND 10 AMP, 120 AND 240 VAC

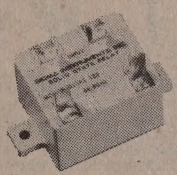


Series 221

For use in photocopy equipment, process controls, machine tools, instrumentation and alarm devices. Utilizes reed relay to sense and provide gating to an AC semiconductor. Compatible with TTL logic and can be used to switch inductive, capacitive, tungsten or resistive loads. Operate time, 2 msec max., 60 Hz. Release time, 9 msec max., 60 Hz. Dielectric strength, V rms, between all insulated points, 1500 VAC rms. U.L. and CSA Listed.

Sigma No.	Output		Input VDC	Input Imped., Ohms	Net Each, Disc. Sch. 4*
	Amps	VAC			
221A-1-5D	4	120	5	525	$10.70
221A-1-6D	4	120	6	100	10.15
221A-1-12D	4	120	12	420	10.15
221A-1-24D	4	120	24	2150	10.15
221A-2-5D	4	240	5	525	11.30
221A-2-6D	4	240	6	100	10.70
221A-2-12D	4	240	12	420	10.70
221A-2-24D	4	240	24	2150	10.70
221A-3-5D	10	120	5	525	12.20
221A-3-6D	10	120	6	100	11.60
221A-3-12D	10	120	12	420	11.60
221A-3-24D	10	120	24	2150	11.60
221A-4-5D	10	240	5	525	12.75
221A-4-6D	10	240	6	100	12.20
221A-4-12D	10	240	12	420	12.20
221A-4-24D	10	240	24	2150	12.20

SOLID STATE RELAYS
SERIES 223—4 AND 10 AMP, 120 VAC



For use in vending machines, process controls, machine tools. Isolates power input from low level control circuits. Utilizes an optical coupler to control an AC semiconductor. Can be operated from either AC or DC sources. Operate time, 60 Hz, 50 msec. Release time, 60 Hz, 50 msec. Dielectric strength, V rms, between all insulated points, 1000 VAC rms. U.L. recognized.

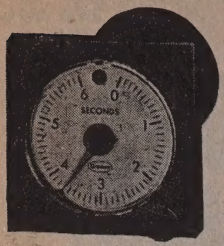
Sigma No.	Output		Input		Net Each, Disc. Sch. 4*
	Amps	Volts	VDC/VAC	mA	
223A-1-6	4	120	6	50	$10.15
223A-3-6	10	120	6	50	11.60
223A-1-12	4	120	12	24	10.15
223A-3-12	10	120	12	24	11.60
223A-1-24	4	120	24	24	10.15
223A-3-24	10	120	24	24	11.60
223A-1-120	4	120	120	1.3	10.15
223A-3-120	10	120	120	1.3	11.60

★QUANTITY DISCOUNT SCHEDULES

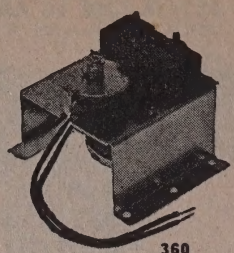
Disc. Sch. 1 Lots of	Sch. 1 Dis-count	Disc. Sch. 2 Lots of	Sch. 2 Dis-count	Disc. Sch. 3 Lots of	Sch. 3 Dis-count	Disc. Sch. 4 Lots of	Sch. 4 Dis-count
1–49	Net	1–99	Net	1–19	Net	1–9	Net
50–74	5%	100–249	5%	20–99	18%	10–49	10%
75–99	10%	250–499	10%	100–499	28%	50–99	20%
100–249	20%	500–2499	30%	500–999	38%	100–249	30%

LARGER DISCOUNTS AVAILABLE ON REQUEST

SERIES 360, 402 AND 472 RESET TIMERS



402



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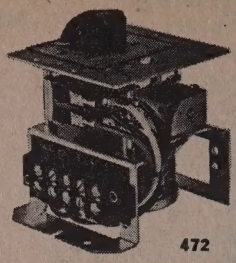


472

SERIES 360 LOW COST RESET TIMER

Automatic reset timer adjusts easily by moving setting arm around notched dial. Has flexibility of interval or delay timing. Two timers interconnected can provide repeat cycle timing. Uses Cramer synchronous inductor motor. Unique slip clutch prevents reset shock. Wiring connections are made directly to switch terminals and motor leads. Four time ranges. 5.5, 15 or 60 seconds, and 5.25 minutes. **Repeat Accuracy:** ¾ of 1% of full scale. **Motor Voltage:** 115 VAC, 60 Hz. **Load Switches:** SPDT, rated 20 amps resistive at 125/250 VAC, ½ amp at 125 VDC, ¼ amp at 250 VDC, ⅓ hp at 125 or 250 VAC. **Power Input:** 4.0 watts at 115 VAC, 60 Hz. **Size:** 3.312″ w. x 2.750″ d. x 2 1⁄16″ h., overall. Net Ea., Lots of 1–9, **$21.25**; 10–24, **$20.19**; 25–49, **$19.12**; 50–99, **$18.06.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10175	5.5 sec	10176	15 sec	10177	60 sec	10178	5.25 min.

SERIES 402 PLUG-IN RESET TIMER WITH PILOT LIGHT

General purpose motor-driven timer plugs in for instant interchangeability and simplified maintenance. Easily adjusted, instantly read, provides accurate, adjustable interval or timing delay between the operation of a control circuit and the closing of load circuits. Applications include control of machine tools, induction heating equipment, injection molding machines and conveyor controls. Choice of 7 full scale time ranges. Load and instantaneous switches for wide wiring flexibility. **Repeat Accuracy:** Within ±0.4% of full scale. **Motor Voltage:** 115 VAC, 60 Hz. **Power Input:** 3.0 watts, motor; 5 watts, clutch at rated voltage. **Switches:** Load and instantaneous switches, snap-action SPDT, rated 10 amps resistive at 125/250 VAC, ½ amp at 250 VDC. ¼ amp at 250 VDC, ⅓ hp at 125/250 VAC. **Terminals:** Spring loaded connectors with #6-32 binding head screws to meet UL spacing. **Size:** 3⅞″ sq. x 4 5⁄32″ d. behind panel. Net Each, Lots of 1–9, **$58.25**; 10–24, **$55.34**; 25–49, **$52.43**; 50–99, **$49.51.**

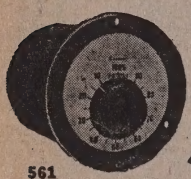
Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10006	6 sec	10007	30 sec	10009	5 min.	10011	5 hrs.
20002	15 sec	10008	60 sec	10010	60 min.		

SERIES 472 BRACKET MOUNT RESET TIMER

External clutch reset timers provide interval or delay timing with choice of momentary or sustained contact control. Individual load, motor and instantaneous switches allow wiring flexibility. Unique differential clutch assures reliable, long-life operation. Has eight-place terminal strip. Incorporates one load, one motor and one instantaneous switch. **Full-Scale Reset:** Within ½ sec. **Load Switches:** SPDT, rated 10 amps resistive at 125/250 VAC. **Power Input:** 115 VAC, 60 Hz. **Size:** 3 21⁄32″ w. x 2⅞″ d. x 3 27⁄32″ h. UL Recog. Net Ea., Lots of 1–9, **$35.50**; 10–24, **$33.73**; 25–49, **$31.95**; 50–99, **$30.18.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10018	15 sec	10021	5 min.	10024	60 min.
10019	30 sec	10022	15 min.	10025	5 hrs.
10020	60 sec	10023	30 min.	10026	24 hrs.

SERIES 561, 524 AND 540 CYCLE TIMERS



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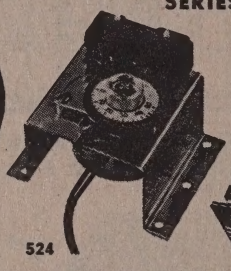


524

540

SERIES 561 PERCENTAGE TIMER

Fully adjustable, continuously repeating cycle timer. On or off time may be set at any portion of total cycle between 4% and 96%. A 100% full-on position is also provided for manual override. Utilizes Cramer dependable synchronous inductor motor. Short time cycles suitable for applications where maintenance of a desired parameter within very close limits is important, such as temperature in environmental test chambers. Longer time ranges indicated for cyclical control of equipment and systems such as pumps, filters, blowers, space heaters and automatic lubrication systems. **Repeat Accuracy:** Within 1% of full scale. **Load Switch:** Rated 20 amps at 115/220 VAC resistive. **Power Input:** 115 VAC, 60 Hz. **Size:** 3.750″ dia. x 3.093″ d., behind panel. UL Recognized. Net Each, Lots of 1–9, **$31.75**; 10–24, **$30.16**; 25–49, **$28.58**; 50–99, **$26.99.**

Cramer No.	Time Range	Cramer No.	Time Range
10179	15 sec	10181	60 sec
10180	30 sec	10182	5 min.

SERIES 524 SINGLE POLE CYCLE TIMER

Ideal for any applications where sequential operations are required, particularly where the sequence may need to be changed periodically, such as lighting displays, battery charging, etc. Complete timer consists of chassis incorporating baseplate, cam and switch plus motor and gear rack; selection of 16 gear racks and 12 motor speeds available. Cam is adjustable for operation from 2% to 98% of time cycle. **Repeat Accuracy:** ±0.9°. **Switch:** SPDT, rated 20 amps non-inductive at 125/250/480 VAC. **Power Input:** 115 VAC, 60 Hz. **Size:** 2¾″ w. x 3 5⁄16″ d. x 2 17⁄32″ h. UL Recognized.

SERIES 540 MULTIPOLE CYCLE TIMER

Controls 2 to 10 independent circuits. Cams are individually adjustable over approximately 2% to 98% of total cycle and can provide any desired sequence or program. Complete timer consists of chassis, motor and gear rack. Chassis incorporates baseplate, cams and switches. **Repeat Accuracy:** ±1.8°. **Load Switches:** SPDT, rated 15 amps non-inductive at 115 VAC. **Power Input:** 115 VAC, 60 Hz. **Overall Chassis Lengths:** 2-pole, 4 5⁄16″; 4-pole, 5 5⁄16″; 6-pole, 6 5⁄16″; 8-pole, 7 5⁄16″; 10-pole, 8 5⁄16″. UL Recognized.

SERIES 524 AND 540 PRICE SCHEDULE

Cramer No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99
10107	Model 524 1-pole chassis	$12.50	$11.88	$11.25	$10.63
10136	Model 540 2-pole chassis	28.10	26.70	25.29	23.89
10137	Model 540 4-pole chassis	38.10	36.20	34.29	32.39
10138	Model 540 6-pole chassis	52.10	49.50	46.89	44.29
10139	Model 540 8-pole chassis	66.10	62.80	59.49	56.18
10140	Model 540 10-pole chassis	80.10	76.10	72.09	68.09
	Any Model No. Gear Rack	3.35	3.18	3.02	2.85
	Any Model No. Motor	8.90	8.46	8.01	7.57

MODELS 524 AND 540 CYCLE TIMER ORDERING INFORMATION

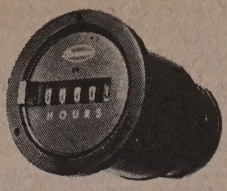
Choose basic chassis, either single pole Model 524 or multipole Model 540, then select desired cycle time and order appropriate gear rack and motor from table below. **Example:** For 6-pole Model 540 with 60 sec cycle time, order **Cramer No. 10138** 6-pole chassis plus gear rack **Cramer No. 10159** plus motor **Cramer No. 10145** and add individual prices for total price.

Gear Racks, Cramer No.		Cycle Times											
Model 524	Model 540	Secs	Secs	Secs	Secs	Secs	Min.	Min.	Min.	Min.	Hrs.	Hrs.	Hrs.
10120	10153	3.0	6.0	12.0	15.0	30.0	1.5	3.0	12.0	36.0	1.5	3.0	12.0
10121	10154	3.5	7.0	14.0	17.5	35.0	1.75	3.5	14.0	42.0	1.75	3.5	14.0
10122	10155	4.0	8.0	16.0	20.0	40.0	2.0	4.0	16.0	48.0	2.0	4.0	16.0
10123	10156	4.5	9.0	18.0	22.5	45.0	2.25	4.5	18.0	54.0	2.25	4.5	18.0
10124	10157	5.0	10.0	20.0	25.0	50.0	2.5	5.0	20.0	60.0	2.5	5.0	20.0
10125	10158	5.5	11.0	22.0	27.5	55.0	2.75	5.5	22.0	66.0	2.75	5.5	22.0
10126	10159	6.0	12.0	24.0	30.0	60.0	3.0	6.0	24.0	72.0	3.0	6.0	24.0
10127	10160	6.5	13.0	26.0	32.5	65.0	3.25	6.5	26.0	78.0	3.25	6.5	26.0
10128	10161	7.0	14.0	28.0	35.0	70.0	3.5	7.0	28.0	84.0	3.5	7.0	28.0
10129	10162	7.5	15.0	30.0	37.5	75.0	3.75	7.5	30.0	90.0	3.75	7.5	30.0
10130	10163	8.0	16.0	32.0	40.0	80.0	4.0	8.0	32.0	96.0	4.0	8.0	32.0
10131	10164	8.5	17.0	34.0	42.5	85.0	4.25	8.5	34.0	102.0	4.25	8.5	34.0
10132	10165	9.0	18.0	36.0	45.0	90.0	4.5	9.0	36.0	108.0	4.5	9.0	36.0
10133	10166	9.5	19.0	38.0	47.5	95.0	4.75	9.5	38.0	114.0	4.75	9.5	38.0
10134	10167	10.0	20.0	40.0	50.0	100.0	5.0	10.0	40.0	120.0	5.0	10.0	40.0
10135	10168	10.5	21.0	42.0	52.5	105.0	5.25	10.5	42.0	126.0	5.25	10.5	42.0
Motor Speed, rpm		40	20	10	8	4	1⅓	⅔	1/6	1/18	1/45	⅔*	1/6*
Model 524, Motor No.:		10108	10109	10110	10111	10112	10113	10114	10115	10116	10117	10118	10119
Model 540, Motor No.:		10141	10142	10143	10144	10145	10146	10147	10148	10149	10150	10151	10152

*rph.

SERIES 635 AND 636 ELAPSED TIME INDICATORS

635K



636

Type 635—Compact, non-resettable indicators available in four case styles. Large 1" dia. number wheels provide excellent readability. Quick start and stop induction motor gives higher accuracy than hysteresis motors at no extra cost; four time ranges available on six-digit register. **Mounting Size:** 3½" units mount in 2.82" dia. panel cutout; 2½" models mount in 2.22" dia. panel cutout. **Total Count:** 99,999.9 minutes, 999,999 minutes, 99,999.9 hrs. or 999,999 hrs. **Power Input:** 115 VAC, 60 Hz. **Type 636**—Similar to type 635 above except with five-digit resettable register; has unique pushbutton reset without danger of overshoot. **Total Count:** 9,999.9 sec, 9,999.9 minutes or 9,999.9 hrs. Both types UL Recognized. To order, specify Cramer No.; for prices, see Cramer Type price table, below.

Cramer No.	Type & Case Style*	Total Count	Cramer No.	Type & Case Style*	Total Count
10052	635E	999,999 min.	10185	635K	999,999 hrs.
10053	635E	99,999.9 min.	10186	635K	99,999.9 hrs.
10054	635E	999,999 hrs.	10072	636X	9,999.9 sec
10055	635E	99,999.9 hrs.	10074	636X	9,999.9 min.
			10075	636X	9,999.9 hrs.
10060	635S	999,999 min.	10076	636E	9,999.9 sec
10061	635S	99,999.9 min.	10078	636E	9,999.9 min.
10062	635S	999,999 hrs.	10079	636E	9,999.9 hrs.
10063	635S	99,999.9 hrs.			
10068	635G	999,999 min.	10080	636Y	9,999.9 sec
10069	635G	99,999.9 min.	10082	636Y	9,999.9 min.
10070	635G	999,999 hrs.	10083	636Y	9,999.9 hrs.
10071	635G	99,999.9 hrs.	10084	636S	9,999.9 sec
10183	635K	999,999 min.	10086	636S	9,999.9 min.
10184	635K	99,999.9 min.	10087	636S	9,999.9 hrs.

*Suffix **E** indicates 3½" round bezel; **S**, 3½" square bezel. **G**, 2½" round bezel; **X**, 2½" round bezel; **Y**, 2½" square bezel; **K**, 2½" square bezel.

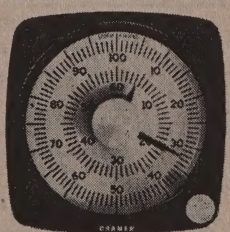
Cramer Type	Net Each, Lots of			
	1-9	10-24	25-49	50-99
636E, 636S, 636X, 636Y	$31.75	$30.16	$28.58	$26.99
635E, 635S	18.00	17.10	16.20	15.30
635G, 635K	13.50	12.83	12.15	11.48

TYPE 620H MILITARY ELAPSED TIME INDICATOR

Small, hermetically sealed unit is listed on MIL Q. P. L. 7793; 60 Hz meets MS90445-2, 400 Hz meets MS28053-6. **Registration:** 9999.9 hours. **Size:** 1.709" sq. bezel x 1.546" deep. Four mounting holes on 1.312" centers.

Cramer No.	Description	Net Each, Lots of			
		1-9	10-24	25-49	50-99
10169	400 Hz	$46.00	$43.70	$41.40	$39.10
10170	60 Hz	39.00	37.05	35.10	33.15

SERIES 691E ELECTRIC STOP CLOCK



Precision time totalizer is an electrical stop clock capable of measuring elapsed time to an accuracy of .02 second. Built-in pushbutton or remote control 1/10-sec reset. Available in 60 sec and 60 min. time ranges. Normally operated with motor running continuously. Timing is initiated by closing the circuit to the electromechanically actuated clutch which engages the pointer mechanism with the drive motor. On completion of timing, clutch circuit opens, instantly stopping the pointer. Completely enclosed industrial case. Dial face has black pointers and graduations on white background. Optically clear glass dome, ⅛" thick. **Reset Solenoid Duty Cycle:** 20% on, 80% off, maximum 5 seconds on. **Accuracy:** AC accuracy at 60 Hz is within .02 sec on 60 second units, .02 min. on 60 minute timers. **Power Input:** 115 VAC, 60 Hz. **Size:** 3 1/32" w. x 3 1/32" h. x 4 7/32" d. behind panel.

Cramer No.	Time Range	Net Each, Lots of			
		1-9	10-24	25-49	50-99
10092	60 sec	$105.00	$99.75	$94.50	$89.25
10094	60 min.*	105.00	99.75	94.50	89.25

*With minute and seconds dial.

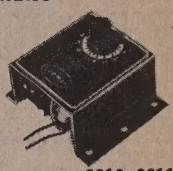
SERIES 241 INTERVAL TIMERS

Automatic reset interval timer has push-button start, automatic shut-off, instant reset. Controls electrically operated equipment such as operating mixers, ovens; copy machines, tumbling and plating machines, insulation testing machines. Set knob permits rapid setting changes while unit is running. High visibility dial with 300° scale protected by plastic dome. **Repeat Accuracy:** Within ±¼ of 1% of full scale. **Power Required:** 115 VAC, 60 Hz. **Contacts:** Rated 15 amps at 125 VAC; 10 amps at 250 VAC, non-inductive load. SPDT snap action load contacts are silver-cadmium oxide. **Terminals:** Screw lugs, rear connected. **Size:** 3¾" dia. x 3⅛" d. behind panel. Net Each, Lots of 1-9, **$37.00**; 10-24, **$35.15**; 25-49, **$33.30**; 50-99, **$31.45.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10000	60 sec	10002	15 min.	10003	60 min.	10005	24 hrs.
10001	5 min.	20001	30 min.	10004	5 hrs.		

SOLID STATE TIMERS

3800, 3801



3810, 3811

SERIES 3800 SOLID STATE TIME DELAY RELAY

Compact, adjustable solid state timer plugs into standard octal socket. All solid state timing circuit activates DPDT relay output contacts at end of set time and resets when control power is removed. Compact enclosure equipped with octal plug-in base is dust and moisture resistant. High grade components are mounted on rigid printed circuit boards. **Repeat Accuracy:** Within 2% under normal conditions. **Recycle Time:** 150 msec nom. **Contact Rating:** DPDT, 10 amps with resistive load. **Power Input:** 115 VAC, 50/60 Hz. Net Each, Lots of 1-9, **$25.50**; 10-24, **$24.23**; 25-49, **$22.95**; 50-99, **$21.68.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10097	1 sec	10099	30 sec	10101	5 min.
10098	10 sec	10100	60 sec		

SERIES 3801 SOLID STATE INTERVAL TIMER

Compact solid state interval timer adapts easily to a wide range of timing applications. Provides control of a load during the timed interval. Application of a momentary start signal transfers the load contacts and initiates timing. Contacts retransfer and timer resets automatically at end of set time. Equipped with 11-pin plug-in base. **Repeat Accuracy:** Within 2% under normal conditions. **Recycle Time:** 50 msec, nom. **Contact Rating:** DPDT, 10 amps with resitive load. **Power Input:** 115 VAC, 50/60 Hz. Net Each, Lots of 1-9, **$29.75**; 10-24, **$28.26**; 25-49, **$26.78**; 50-99, **$25.29.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10194	1 sec	10196	30 sec	10198	5 min.
10195	10 sec	10197	60 sec		

SERIES 3810 BRACKET-MOUNT SOLID STATE TIME DELAY RELAY

Low-cost bracket-mount time delay relay is interchangeable with several commonly used electromechanical timers. Sustained control signal initiates time; contacts transfer at end of time delay and timer resets upon removal of control voltage. Resists shock and vibration. **Repeat Accuracy:** Within 4% under normal conditions. **Recycle Time:** 150 msec nom. **Output Contacts:** DPDT rated 10 amps, resistive. **Temperature Range:** +10° C to +50° C. **Power Input:** 115 VAC, 50/60 Hz. **Size:** 3.312" w. x 2.750" d. x 2.125" h., overall. Net Each, Lots of 1-9, **$25.50**; 10-24, **$24.23**; 25-49, **$22.95**; 50-99, **$21.68.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10102	1 sec	10104	30 sec	10106	5 min.
10103	10 sec	10105	60 sec		

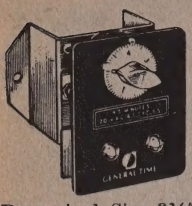
SERIES 3811 BRACKET-MOUNT SOLID STATE INTERVAL TIMER

Adapts to wide range of timing applications. Provides control of a load during a timed interval. Application of a momentary start signal transfers the load contacts and initiates timing. Contacts retransfer and timer resets automatically at end of set time. **Repeat Accuracy:** Within 4% under normal conditions. **Recycle Time:** 50 msec nominal. **Contacts:** DPDT rated 10 amps resistive. **Power Input:** 115 VAC, 50/60 Hz. **Size:** 3.312" w. x 2.750" d. x 2.125" h., overall. Net Each, Lots of 1-9, **$29.75**; 10-24, **$28.26**; 25-49, **$26.78**; 50-99, **$25.29.**

Cramer No.	Time Range	Cramer No.	Time Range	Cramer No.	Time Range
10199	1 sec	10201	30 sec	10203	5 min.
10200	10 sec	10202	60 sec		

SERIES DA TIME-DELAY TIMERS

REAR MOUNTING



Type DA11: Manually adjustable by knob. Apply wherever delay, interval or repeat cycle timing functions are required (repeat cycle requires two units). Internal clutch engages and disengages when motor is energized and de-energized. Resets to start position when power is removed. SPDT switch rated 20 amps at 125 or 250 VAC resistive; solder lug terminals. Min. setting, 0 sec. Repeat accuracy, ±¾ of 1% of total time range. Timing motor rated 5 watts max. at 120 VAC, 60 Hz. UL Recognized. Size, 3⅜″ w. x 2 1⅜₁₆″ d. x 3⅛″ h. Weight, 1 lb.

Type DA21: Same as DA11 but with locknut adjustment to eliminate tampering. UL Recognized.

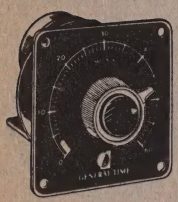
When ordering, specify model number, voltage, and frequency.

Model Number		Max.	Max.
Manual Adj.	Locknut Adj.	Time Setting	Reset Time
DA11-036	.....	5.7 sec	.25 sec
DA11-031	DA21-001	14 sec	1.0 sec
DA11-032	DA21-002	57 sec	1.5 sec
DA11-033	DA21-003	4.5 min	15 sec
DA11-034	DA21-004	9.5 min	120 sec

Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$23.40	$22.25	$21.10	$19.90	$18.75	$17.55	$16.40

SERIES DP11 RESET TIMERS

PANEL MOUNTING

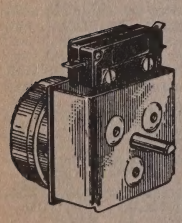


Adjustable time range by simple pointer knob. Apply wherever delay, interval or repeat cycle timing are needed (repeat cycle requires two timers). Readout of elapsed time by pointer in center of knob. Unit resets to start position when power is removed. SPDT switch rated 10 amps at 125 or 250 VAC resistive. Timing motor rated 5 watts max. at 120 VAC, 60 Hz. Repeat accuracy, ±1% of total time range. Screw terminals. Size, 3⅝₁₆″ sq. x 3½″ deep, behind panel. Requires 3⅛₁₆″ dia. mounting hole cut. **When ordering, specify model number, voltage, and frequency.**

Model Number	Time Setting		Max.	Dial Grads.	
	Max.	Min.	Reset Time	Major	Minor
DP11-007	6 sec	.3 sec	.5 sec	1 sec	1.0 sec
DP11-001	15 sec	.8 sec	1.0 sec	1 sec	.2 sec
DP11-006	30 sec	1.5 sec	1.5 sec	5 sec	.5 sec
DP11-002	60 sec	3.0 sec	1.5 sec	10 sec	1.0 sec
DP11-003	5 min	.2 min	15 sec	1 min	.1 min
DP11-004	10 min	.4 min	120 sec	1 min	.2 min

Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$28.80	$27.35	$25.90	$24.50	$23.05	$21.60	$20.15

SERIES AB HAND-SET INTERVAL TIMERS



Rotation energizes the load and timing motor, which are de-energized on release; when motor drives timer to zero. Setting can be changed during cycle without damage. Mount behind panel, using three equally spaced .180″ dia. tapped holes on .562″ radius. Setting shaft, ¼″ dia. flatted to .156″ for ½″. Flat is located 180° from "0" time. SPDT switch rated 25 amps at 125 or 250 VAC resistive. Timing motor rated 3.5 watts at 120 VAC, 60 Hz. Spade terminals, ¼″. Size, 2½″ w. x 3 3⁄16″ d. x 3″ h. UL Recognized. Weight, 1 lb. **When ordering, specify model number, voltage and frequency.**

Model No.	Time Range	Model No.	Time Range
AB51-001	1 min	AB51-006	2 hrs
AB51-002	6 min	AB51-007	6 hrs
AB51-003	15 min	AB51-008	8 hrs
AB51-004	30 min	AB51-010	12 hrs
AB51-005	60 min	AB51-016	24 hrs.

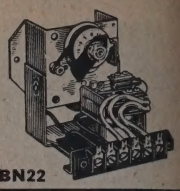
Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$10.65	$10.10	$9.60	$9.05	$8.55	$8.00	$7.45

ACCESSORIES

Model No. AT5-901—Dial. Net Each..... **$1.40**
Model No. 55-121—Knob. Net Each..... **.40**

SERIES BN ADJUSTABLE RESET TIMERS

Rear mounting delay timer has built-in relay and adjustable time range. Dial and setting knob with readout of elapsed time by pointer in center of knob. SPDT relay rated 10 amps at 125/250 VAC. Motor rating, 5 W max. at 120 VAC. Repeat accuracy, ¾ of 1% of total time range. Locknut setting adjustment, where only occasional time period changes are required. UL Recognized. Size, 3.375″ w. x 4.202″ h. x 3.750″ d.

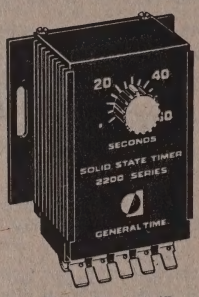


BN22

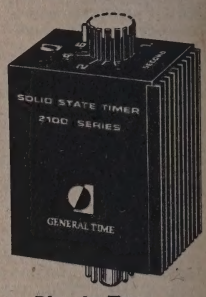
Model Number	Time Setting		Max.	Dial Grads.	
	Max.	Min.	Reset Time	Major	Minor
BN22-001	13.5 sec	.7 sec	.5 sec	1 sec	.5 sec
BN22-004	9.5 min	30 sec	120 sec	1 min	5 sec

Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$31.95	$30.35	$28.75	$27.15	$25.55	$23.95	$22.35

SOLID STATE TIMERS



Rear Mount Type



Plug-in Type

Solid state timers meet the broadest range of applications. Plug-in or rear mount types; standard timers for delay, interval or D.O.D. (delay on de-energization). AC/DC input; relay (DPDT); low operating temperature and no first cycle effect. UL Recognized. Repeat accuracy of ±2%. Resistive load of 10 amps at 117 VAC or 28 VDC. Minimum reset time, 300 msec for lower third of time band on type 2111; 100 msec, all others. **When ordering,** add time range suffix to series: e.g., **2211-1PF-001** for 1/.10 sec max./min. time setting.

TIME RANGES

Suffix	Time Setting Max.	Time Setting Min.	Suffix	Time Setting Max.	Time Setting Min.
-001	1 sec	.10 sec	-060	60 sec	3.0 sec
-003	3 sec	.15 sec	-118	3 min	9.0 sec
-005	5 sec	.25 sec	-130	5 min	15.0 sec
-010	10 sec	.50 sec	-160	10 min	60 sec
-015	15 sec	.75 sec	-190	15 min	90 sec
-030	30 sec	1.50 sec			

PLUG-IN TIMERS—DELAY MODE

SERIES 2111-1PF—Relay output, 117 V AC/DC, 8-pin plug.

Time Range Suffix*	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249	250 Up
-001 to -118	$27.80	$27.05	$26.40	$24.95	$22.20	$20.80	$19.40
-130	29.00	28.15	27.40	25.95	23.15	21.75	20.30
-160	35.05	34.25	33.50	31.80	28.50	27.10	25.35
-190	36.90	36.10	35.15	33.40	30.25	28.50	26.75

PLUG-IN TIMERS—INTERVAL AND D.O.D. MODE

SERIES 2112-1PF—Relay output, 117 V AC/DC, 11-pin plug.

-001 to -118	$32.60	$31.70	$30.95	$29.35	$26.05	$24.20	$22.85
-130	33.85	32.80	32.00	30.30	27.05	25.15	23.65
-160	40.35	39.10	38.05	36.15	32.60	30.40	28.75
-190	42.25	40.85	39.70	37.60	34.00	31.70	29.85

REAR MOUNT TIMERS—DELAY MODE

SERIES 2211-1PF—Relay output, 117 V AC/DC, 8 terminals.

-001 to -118	$28.60	$27.85	$27.15	$25.80	$22.90	$21.40	$20.00
-130	29.85	29.00	28.25	26.75	23.95	22.40	20.90
-160	36.10	35.25	34.55	33.00	29.35	27.90	26.05
-190	38.00	37.15	36.25	34.45	31.20	29.35	27.55

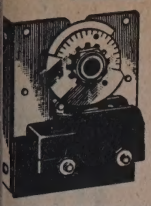
REAR MOUNT TIMERS—INTERVAL AND D.O.D. MODE

SERIES 2212-1PF—Relay output, 117 V AC/DC, 10 terminals.

-001 t -118	$33.60	$32.65	$31.90	$30.20	$26.85	$24.90	$23.50
-130	34.80	33.75	33.00	31.25	27.85	25.85	24.35
-160	41.60	40.25	39.20	37.25	33.60	31.35	29.60
-190	43.50	42.10	40.90	38.80	35.05	32.65	30.80

*See time range table for maximum and minimum time settings; and all the ranges and respective times. †-005 (5 sec) and -118 (3 min) non-stock items.

SERIES RG21 REPEAT-CYCLE TIMERS



Cam-actuated, single switch timers for rear mounting. Run continuously, repeating a set cycle of make-break switching operations as long as motor is energized. Also operates a single time cycle. Cam adjustable from 7° min. to 169° max. (±3%). SPDT switch rated 20 amps resistive. Timing motor rated 3.7 watts max. at 120 VAC, 60 Hz. Solder lug terminals. 6″ leads. UL Recognized. Size, 2 5/16″ w. x 2 1/2″ d. x 3 1/8″ h. Weight, 1 lb.

Model	Time*	Model	Time*	Model	Time*
RG21-090	7½ sec	RG21-093	1 min	RG21-096	15 min
RG21-091	15 sec	RG21-094	5 min	RG21-097	30 min
RG21-092	50 sec	RG21-095	10 min	RG21-098	60 min

Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$18.05	$17.20	$16.25	$15.35	$14.45	$13.55	$12.65

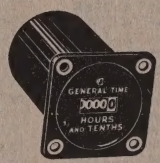
24 HOUR MULTIPLE PROGRAM TIMER

Can be programmed to turn loads on and off automatically once, twice, or more times daily. Six resettable pins for programming on/off cycles. 125 volts AC. 15 amps. Size: 4″ h. x 3″ w. x 1½ d. Shipping weight: ½ lb.

Model No. 52017 Timer—Woodtone finish. Net Each..... **$8.98**

HERMETICALLY SEALED MILITARY TYPE INDICATOR

Meets MIL-M-7793C and MIL-E-5272C requirements. Readout, four digits (hours) plus tenths. Temperature range, −55° C to +85° C. Size, 1¾″ sq. x 2 37/64″ deep with 1½″ dia. barrel. Four mounting holes on 1 5/16″ centers. For 115 volts, 400 Hz. MIL-STD-MS-28053-5 solder terminals. Shipping Weight, ¾ lb.

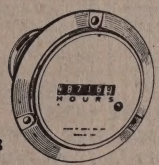


Model No.	Net Each, Lots of						
	1-4	5-9	10-24	25-49	50-99	100-249	250 Up
7010-004	$49.10	$46.60	$44.20	$41.75	$39.25	$36.80	$34.35
7010-010*	49.10	46.60	44.20	41.75	39.25	36.80	34.35

*Non-military, 60 Hz.

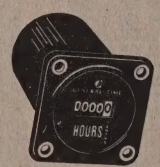
ELAPSED TIME INDICATORS

EF27



EF13

ED



Wide variety of meters available for any application where accurate time readings are required. All are synchronous motor driven. Round, square bezel, panel mount and rear mount available. Can be resettable or non-resettable, and readout is digital with a range of five figures plus tenths; in hours and tenths or minutes and tenths. All units operate at 120 VAC, 60 Hz. Operating temperature, −12° C to +55° C. Registers hours and tenths unless otherwise noted. UL Recognized.

Model No.*	Bezel	Depth	Dia. of Unit	Max. Motor Rating, W	Leads or Terminals
EF13 NR	2⅞″ rd.	1 51/64″	2 17/64″	2.5	6″ leads
EF27 NR	2⅜″ sq.	1 23/32″	2.077″	5.0	6″ leads
ED71 NR	1¾″ sq.	2 37/64″	1 17/32″	2.5	11¼″ leads
ED72 NR	1¾″ sq.	2 37/64″	1 17/32″	2.5	Solder

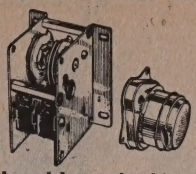
*NR indicates non-reset; R, reset type.

Model No.	Net Each, Lots of						
	1-4	5-9	10-24	25-49	50-99	100-249	250 Up
EF1333†	$13.20	$12.50	$11.85	$11.20	$10.55	$ 9.90	$ 9.20
EF1335	13.20	12.50	11.85	11.20	10.55	9.90	9.20
EF2733†	15.50	14.75	13.95	13.20	12.40	11.65	10.85
EF2735	15.50	14.75	13.95	13.20	12.40	11.65	10.85
ED7112	29.15	27.70	26.20	24.80	23.30	21.85	20.40
ED7212	31.60	30.00	28.40	26.80	25.25	23.70	22.10

†Registers minutes and tenths.

WRITE FOR INFORMATION ON ITEMS NOT LISTED

SERIES RE62 REPEAT CYCLE MULTI-CAM TIMERS



Same specifications as RG21, except 2 to 6 switches may be actuated during cycle. Run continuously, repeating set cycles of multiple switching operations as long as motor is energized. Complete unit requires one motor and one or more switch stacks. Spanner wrench included to adjust cams. Two-switch unit size, 2 5/16″ h. x 3 3/32″ w. x 3 3/16″ d.; add 1 1/16″ to depth for each additional switch. UL Recognized. **When ordering, specify switch stack model number, drive motor type number, voltage, and frequency.**

SWITCH STACKS

Model No. RE-	*	Net Each, Lots of						
		1-4	5-9	10-24	25-49	50-99	100-249	250 Up
62-091	2	$16.80	$15.95	$15.10	$14.25	$13.45	$12.60	$11.75
63-092	3	22.40	21.30	20.15	19.05	17.90	16.80	15.70
64-093	4	26.90	25.55	24.20	22.85	21.50	17.15	18.85
65-094	5	34.25	32.55	30.85	29.10	27.40	25.70	24.00
66-095	6	39.85	37.85	35.90	33.90	31.90	29.90	27.90

*Number of switches.

DRIVE MOTOR SPECIFICATION

Order one with switch stacks for complete unit.

Model	Time*	Model	Time*	Model	Time*
MP10-390	7½ sec	MP10-393	1 min	MP10-397	30 min
MP10-400	10 sec	MP10-394	5 min	MP10-398	60 min
MP10-391	15 sec	MP10-395	10 min		
MP10-392	30 sec	MP10-396	15 min		

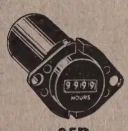
*Cam shaft speed for one revolution.

DRIVE MOTOR INDUSTRIAL PRICING

Net Each, Lots of						
1-4	5-9	10-24	25-49	50-99	100-249	250 Up
$8.70	$8.30	$7.85	$7.40	$6.95	$6.55	$6.10

MINIATURE ELAPSED TIME INDICATORS AND EVENTS COUNTERS

95C



95B

16B

B16C

Conform to MIL-M-7793D stds.; MS numbers shown where applicable. Choice of square or round case with 4-digit readout and operation indicators. AC units rated 0.75 W nom. for 115 and 26 volts, 400 Hz; DC units, 60 mW max. avg. at 23–29 volts; events counters, 1.5 W max, 23–29 VDC with 20 Hz count rate. **Max. Readout:** 9999.

SQUARE CASE ELAPSED TIME INDICATORS

Size: .500″ (±.015″) sq. x 1.094″ lg. max. plus 7/32″ term. Wt., .75 oz. max. Fixed flange types have ⅛″ pos.

Model Number	MIL Spec.	Volts	Flange Type	Temp. Range Min.	Temp. Range Max.
95C8CE	MS17322-6	115 AC	Fixed	−55°C	+ 85°C
95C8CE-50	MS17322-6A	115 AC	Fixed	−65°C	+125°C
95C8CE-200	MS27651	115 AC	Fixed	−65°C	+125°C
95C8A	MS17322-8	115 AC	None	−55°C	+ 85°C
95C8A-50	MS17322-8A	115 AC	None	−65°C	+125°C
95C8C2	MS17322-10	115 AC	Movable	−65°C	+125°C
25C8CE-16	MS27650-05C	26 AC	Fixed	−65°C	+125°C
25C8A	.....	26 AC	None	−65°C	+125°C

ROUND CASE ELAPSED TIME INDICATORS

Size: AC units .690″ dia. max. x 1.760″ lg. max. plus ¼″ term.; wt., 1 oz. max. DC units .690″ dia. max. x 2.082″ lg. max. plus .312″ term.; wt., 1.75 oz. max. Fixed flange types have ⅛″ pos.

95B8CE	MS17322-2	115 AC	Fixed	−55°C	+ 85°C
95B8CE-50	MS17322-2A	115 AC	Fixed	−65°C	+125°C
95B8A	MS17322-4	115 AC	None	−55°C	+ 85°C
95B8A-50	MS17322-4A	115 AC	None	−65°C	+125°C
95B8C2	MS17322-9	115 AC	Movable	−65°C	+125°C
25B8CE	.....	26 AC	Any	−65°C	+125°C
25B8A	.....	26 AC	None	−65°C	+125°C
16B8CE-70	MS17321-2	28 DC	Fixed	−55°C	+100°C
16B8A-70	MS17321-4	28 DC	None	−55°C	+100°C
16B8C2	MS17321-9	28 DC	Movable	−55°C	+100°C

SQUARE CASE EVENTS COUNTERS

Size: .500″ (±.015″) sq. x 1.094″ lg. max. plus 7/32″ term. Wt., .75 oz. Fixed flange type has ⅛″ pos.

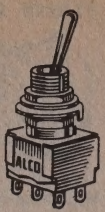
B16C8A	.....	28 DC	None	−65°F	+257°F
B16C8CE	.....	28 DC	Fixed	−65°F	+257°F
B16C8C2	.....	28 DC	Movable	−65°F	+257°F

INDUSTRIAL PRICING

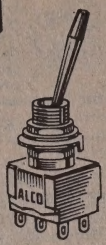
Model No.	Net Each, Lots of							
	1-4	5-9	10-24	25-49	50-74	75-99	100-149	150-249
95C, 25C	$44.25	$36.50	$31.00	$25.50	$23.25	$21.75	$20.25	$18.50
95B, 25B	44.25	36.50	31.00	25.50	23.25	21.75	20.25	18.50
16B	160.75	147.00	134.50	123.75	116.50	112.25	107.50	101.50
B16C	51.50	45.50	40.50	37.00	34.00	32.25	31.00	28.75

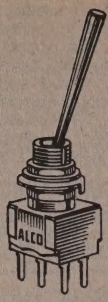
MST-115D

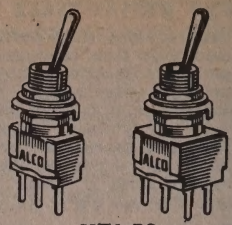
MST-305


MTA

MTF


MTB


MTT-PC


MTA-PC

MTA-WW

MST MINIATURE TOGGLE SWITCHES

Slim, bat handle toggle switches for miniature applications with limited back-of-panel clearance. Terminals and contacts are solid silver (center terminal, copper with silver plate). Case material, black phenolic resin; ¼-40 threaded bushing. Rated 6 amps at 125 VAC. Offering high capacity for small size. SPDT and DPDT types have life cycle of over 80,000 on-off operations; 3PDT and 4PDT, over 20,000. High voltage barriers between terminals and contacts; 1 piece body.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MST-105D	SPDT‡	On-none-on	$1.75	$1.31	$1.19	$1.10
MST-105E	SPDT	On-off-on	2.05	1.54	1.39	1.29
MST-105F	SPDT	None-on-on†	2.05	1.54	1.39	1.29
MST-105G	SPDT	On†-off-on†	2.05	1.54	1.39	1.29
MST-105H	SPDT	On-off-on†	2.05	1.54	1.39	1.29
MST-115D*	SPDT	On-none-on	1.80	1.35	1.22	1.13
MST-205N	DPDT‡	On-none-on	2.30	1.73	1.56	1.45
MST-205P	DPDT	On-off-on	2.70	2.03	1.84	1.70
MST-205PA	DPDT‡	On-on-on	2.95	2.21	2.01	1.86
MST-205R	DPDT	None-on-on†	2.70	2.03	1.84	1.70
MST-205S	DPDT	On†-off-on†	2.70	2.03	1.84	1.70
MST-205SA	DPDT‡	On†-on-on†	3.25	2.44	2.21	2.05
MST-205T	DPDT	On-off-on†	2.70	2.03	1.84	1.70
MST-205TA	DPDT‡	On-on-on†	3.25	2.44	2.21	2.05
MST-215N*	DPDT	On-none-on	2.35	1.76	1.60	1.48
MST-305D	3PDT	On-none-on	3.90	2.93	2.65	2.46
MST-305E	3PDT	On-off-on	4.20	3.15	2.86	2.65
MST-305F	3PDT	None-on-on†	4.20	3.15	2.86	2.65
MST-305H	3PDT	On-off-on†	4.20	3.15	2.86	2.65
MST-315D*	3PDT	On-none-on	3.95	2.96	2.69	2.49
MST-405N	4PDT	On-none-on	5.00	3.75	3.40	3.15
MST-405P	4PDT	On-off-on	5.40	4.05	3.67	3.40
MST-415N*	4PDT	On-none-on	5.05	3.79	3.43	3.18

GREEN SERIES MINIATURE TOGGLE SWITCHES

All ALCO Green Series miniature switches have molded-in terminals which prevent solder, flux and other contaminants from entering the contact area. All contacts are fine silver. Contacts and terminals have gold finish to inhibit oxidation, prolong shelf life, and facilitate soldering. Green diallyl phthalate case withstands high temperatures. All toggle types are U.L. listed and have anti-push-in lever captivation to prevent accidental damage. All types have ¼"-40 high torque bushings, except MTG series; MTG types have 15/32"-32 bushings. Rated 6 amps at 125 VAC, 3 amps at 250 VAC.

GREEN SERIES MINIATURE TOGGLE SWITCHES WITH PC AND WIRE WRAP TERMINALS

PC terminals are 0.250" long; WW types have 0.031" x 0.050" x 0.740" long terminals.

MTA-106D-PC	SPDT	On-none-on	$1.85	$1.39	$1.26	$1.17
MTA-106E-PC	SPDT	On-off-on	2.15	1.61	1.46	1.35
MTA-106F-PC	SPDT	On-none-on†	2.15	1.61	1.46	1.35
MTA-106G-PC	SPDT	On†-off-on†	2.15	1.61	1.46	1.35
MTA-106H-PC	SPDT	On-off-on†	2.15	1.61	1.46	1.35
MTA-206N-PC	DPDT	On-none-on	2.55	1.91	1.73	1.61
MTA-206P-PC	DPDT	On-off-on	2.90	2.18	1.97	1.83
MTA-206R-PC	DPDT	On-none-on†	2.90	2.18	1.97	1.83
MTA-206S-PC	DPDT	On†-off-on†	2.90	2.18	1.97	1.83
MTA-206T-PC	DPDT	On-off-on†	2.90	2.18	1.97	1.83
MTA-206PA-PC	DPDT	On-on-on	3.15	2.36	2.14	1.98
MTA-306D-PC	3PDT	On-none-on	4.20	3.15	2.86	2.65
MTA-306E-PC	3PDT	On-off-on	4.50	3.38	3.06	2.84
MTA-306F-PC	3PDT	On-none-on†	4.50	3.38	3.06	2.84
MTA-306H-PC	3PDT	On-off-on†	4.50	3.38	3.06	2.84
MTA-406N-PC	4PDT	On-none-on	5.40	4.05	3.67	3.40
MTA-406P-PC	4PDT	On-off-on	5.80	4.35	3.94	3.65
MTA-406PA-PC	4PDT	On-on-on	6.55	4.91	4.45	4.13
MTA-106D-WW	SPDT	On-none-on	2.00	1.50	1.36	1.26
MTA-106E-WW	SPDT	On-off-on	2.30	1.73	1.56	1.45
MTA-206N-WW	DPDT	On-none-on	2.85	2.14	1.94	1.80
MTA-206P-WW	DPDT	On-off-on	3.20	2.40	2.18	2.02
MTA-306D-WW	3PDT	On-none-on	4.65	3.49	3.16	2.93
MTA-406N-WW	4PDT	On-none-on	6.00	4.50	4.08	3.78

*With white cap. †Momentary positions. ‡Usable as SP3T; wiring on request. §Rocker. IUL Listed E46765.

GREEN SERIES MINIATURE BAT HANDLE TOGGLES

Terminals accept two #20 AWG wires.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MTA-106D	SPDT‡	On-none-on	$1.70	$1.28	$1.16	$1.07
MTA-106E	SPDT	On-off-on	2.05	1.54	1.39	1.29
MTA-106F	SPDT	On-none-on†	2.05	1.54	1.39	1.29
MTA-106G	SPDT	On†-off-on†	2.05	1.54	1.39	1.29
MTA-106H	SPDT	On-off-on†	2.05	1.54	1.39	1.29
MTA-206N	DPDT	On-none-on	2.35	1.76	1.60	1.48
MTA-206P	DPDT	On-off-on	2.70	2.03	1.84	1.70
MTA-206R	DPDT	On-none-on†	2.70	2.03	1.84	1.70
MTA-206S	DPDT	On†-off-on†	2.70	2.03	1.84	1.70
MTA-206T	DPDT	On-off-on†	2.70	2.03	1.84	1.70
MTA-206PA	DPDT	On-on-on	2.95	2.21	2.01	1.86
MTA-206SA	DPDT	On†-on-on†	3.25	2.44	2.21	2.05
MTA-206TA	DPDT	On-on-on†	3.25	2.44	2.21	2.05
MTA-306D	3PDT	On-none-on	3.90	2.93	2.65	2.46
MTA-306E	3PDT	On-off-on	4.20	3.15	2.86	2.65
MTA-306F	3PDT	On-none-on†	4.20	3.15	2.86	2.65
MTA-306H	3PDT	On-off-on†	4.20	3.15	2.86	2.65
MTA-406N	4PDT	On-none-on	5.00	3.75	3.40	3.15
MTA-406P	4PDT	On-off-on	5.40	4.05	3.67	3.40
MTA-406PA	4PDT	On-on-on	6.15	4.61	4.18	3.87

GREEN SERIES MINIATURE FLAT HANDLE TOGGLES

Flat lever type has matte chrome finish. Solder lug terminals.

MTF-106D	SPDT	On-none-on	$2.25	$1.69	$1.53	$1.42
MTF-106E	SPDT	On-off-on	2.55	1.91	1.73	1.61
MTF-106F	SPDT	On-none-on†	2.55	1.91	1.73	1.61
MTF-106G	SPDT	On†-off-on†	2.55	1.91	1.73	1.61
MTF-106H	SPDT	On-off-on†	2.55	1.91	1.73	1.61
MTF-206N	DPDT	On-none-on	2.85	2.14	1.94	1.80
MTF-206P	DPDT	On-off-on	3.20	2.40	2.18	2.02
MTF-206R	DPDT	On-none-on†	3.20	2.40	2.18	2.02
MTF-206S	DPDT	On†-off-on†	3.20	2.40	2.18	2.02
MTF-206T	DPDT	On-off-on†	3.20	2.40	2.18	2.02
MTF-206PA	DPDT	On-on-on	3.45	2.59	2.35	2.17
MTF-206SA	DPDT	On†-on-on†	3.45	2.59	2.35	2.17
MTF-306D	3PDT	On-none-on	4.40	3.30	2.99	2.77
MTF-406N	4PDT	On-none-on	5.50	4.13	3.74	3.47

GREEN SERIES MINIATURE BATON LEVER TOGGLES

Stylish 0.6" long baton having black plastic tip. Solder lug terminals.

MTB-106D	SPDT	On-none-on	$1.85	$1.39	$1.26	$1.17
MTB-106E	SPDT	On-off-on	2.15	1.61	1.46	1.35
MTB-106F	SPDT	On-none-on†	2.15	1.61	1.46	1.35
MTB-106G	SPDT	On†-off-on†	2.15	1.61	1.46	1.35
MTB-106H	SPDT	On-off-on†	2.15	1.61	1.46	1.35
MTB-206N	DPDT	On-none-on	2.45	1.84	1.67	1.54
MTB-206P	DPDT	On-off-on	2.80	2.10	1.90	1.76
MTB-206R	DPDT	On-none-on†	2.80	2.10	1.90	1.76
MTB-206S	DPDT	On†-off-on†	2.80	2.10	1.90	1.76
MTB-206T	DPDT	On-off-on†	2.80	2.10	1.90	1.76
MTB-206PA	DPDT	On-on-on	3.05	2.29	2.07	1.92
MTB-306D	3PDT	On-none-on	4.00	3.00	2.72	2.52
MTB-406N	4PDT	On-none-on	5.10	3.83	3.47	3.21

GREEN SERIES MINIATURE LONG LEVER TOGGLES

0.74" long lever; PC terminals.

MTT-106D-PC	SPDT	On-none-on	$1.90	$1.43	$1.29	$1.20
MTT-106E-PC	SPDT	On-off-on	2.20	1.65	1.50	1.39
MTT-106F-PC	SPDT	On-none-on†	2.20	1.65	1.50	1.39
MTT-106G-PC	SPDT	On†-off-on†	2.20	1.65	1.50	1.39
MTT-106H-PC	SPDT	On-off-on†	2.20	1.65	1.50	1.39
MTT-206N-PC	DPDT	On-none-on	2.60	1.95	1.77	1.64
MTT-206P-PC	DPDT	On-off-on	2.95	2.21	2.01	1.86
MTT-206R-PC	DPDT	On-none-on†	2.95	2.21	2.01	1.86
MTT-206S-PC	DPDT	On†-off-on†	2.95	2.21	2.01	1.86
MTT-206T-PC	DPDT	On-off-on†	2.95	2.21	2.01	1.86
MTT-206PA-PC	DPDT	On-on-on	3.20	2.40	2.18	2.02
MTT-306D-PC	3PDT	On-none-on	4.25	3.19	2.89	2.68
MTT-406N-PC	4PDT	On-none-on	5.45	4.09	3.71	3.43

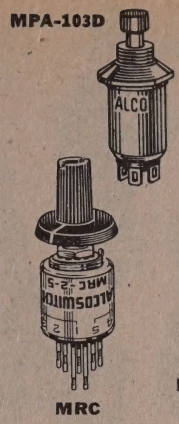
†Momentary positions

CST-022

MSP-105F

MSP-103

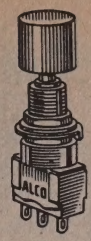
MSPS-103C



MPA-103D

MRC

MRB-10PC



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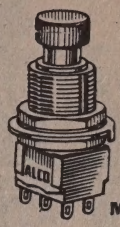

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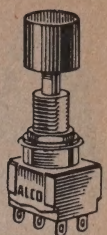


MPE

CST SERIES TOGGLE SWITCHES

w-cost baton lever toggles. DPDT, 3mA at 125 VAC. Position ping for low contact resistance. Sealed terminals prevent wicking.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-49	50-99	100-249
CST-022	DPDT	$0.85	$0.64	$0.58	$0.54
CST-022-1	DPDT	1.10	.83	.75	.69
CST-022S	DPDT	1.20	.90	.82	.76
CST-022N	DPDT	1.20	.90	.82	.76
CST-023	DP3T	1.35	1.01	.92	.85
CST-042S	4PDT	1.55	1.16	1.05	.98
CST-042N	4PDT	1.55	1.16	1.05	.98
CST-043	4P3T	1.70	1.28	1.16	1.07

SP SERIES MINIATURE PUSHBUTTON SWITCHES

SP-105, MSP-205—Snap action. Rated 6 A, 125 VAC. Solid ver contacts and terminals. Bushing ¼″-40 with keyway. Black enolic case. Life, 25,000 cycles. **MSP-103**—Economy, low pres- e operation. Rated 1 A, 125 VAC. Silver-plated brass contacts d terminals. Plunger travel, .098″. Bushing ¼″-40. Depth be- d panel, ¼″. **MSPS-103C**—Similar to MSP-103, but smaller ameter, .310″. Rated 0.5 A at 125 VAC.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-99	100-499	500-999
SP-105D	SPDT	Push on-off	$2.75	$2.06	$1.87	$1.73
SP-105F	SPDT	Momentary	2.75	2.06	1.87	1.73
SP-205N	DPDT	Push on-off	3.65	2.74	2.48	2.30
SP-205R	DPDT	Momentary	3.65	2.74	2.48	2.30
SP-103B	SPST	N.C. (Black)	1.15	.86	.78	.72
SP-103C	SPST	N.O. (Red)	1.15	.86	.78	.72
SPS-103C-B	SPST	N.C. (Black)	.75	.56	.51	.47
SPS-103C	SPST	N.O. (Red)	.75	.56	.51	.47
SPS-103B	SPST	N.O. (Black)	.75	.56	.51	.47

GREEN SERIES

GREEN SERIES MUSTANG PUSHBUTTONS

15⁄32″ bushing with solder lug terminals. PC ix for PC terminals.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
G-106D	SPDT	Push on/off	$2.90	$2.18	$1.97	$1.83
G-106F	SPDT	Momentary	2.90	2.18	1.97	1.83
G-206N	DPDT	Push on/off	3.80	2.85	2.58	2.39
G-206R	DPDT	Momentary	3.80	2.85	2.58	2.39
G-306D	3PDT	Push on/off	5.10	3.83	3.47	3.21
G-306F	3PDT	Momentary	5.10	3.83	3.47	3.21
G-406N	4PDT	Push on/off	6.10	4.58	4.15	3.84
G-406R	4PDT	Momentary	6.10	4.58	4.15	3.84
G-206N-PC	DPDT	Push on/off	3.95	2.96	2.69	2.49
G-206R-PC	DPDT	Momentary	3.95	2.96	2.69	2.49
G-306D-PC	3PDT	Push on/off	5.30	3.98	3.60	3.34
G-306F-PC	3PDT	Momentary	5.30	3.98	3.60	3.34
G-406N-PC	4PDT	Push on/off	6.35	4.76	4.32	4.00
G-406R-PC	4PDT	Momentary	6.35	4.76	4.32	4.00

plied with Black C-9 cap only.

SUBMINIATURE PUSHBUTTON SWITCHES

miniature pushbutton switch with one piece bushing and case struction. Current Rating: 3 amps @ 125 VAC D & F Series, mp @ 125 VAC B & C Series.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
A-103B	SPST	N. C. Mom.	$1.40	$1.05	$ .95	$ .88
A-103C	SPST	N. O. Mom.	1.40	1.05	.95	.88
A-103D	SPDT	Push on/off	2.45	1.84	1.67	1.54
A-103F	SPDT	Momentary	2.45	1.84	1.67	1.54

plied with black cap, C5.

GREEN SERIES

GREEN SERIES MINIATURE PUSHBUTTONS

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
A-106D	SPDT	Push on/off	$2.65	$1.99	$1.80	$1.67
A-106F	SPDT	Momentary	2.65	1.99	1.80	1.67
A-206N	DPDT	Push on/off	3.55	2.66	2.41	2.24
A-206R	DPDT	Momentary	3.55	2.66	2.41	2.24
A-306D	3PDT	Push on/off	4.85	3.64	3.30	3.06
A-306F	3PDT	Momentary	4.85	3.64	3.30	3.06
A-406N	4PDT	Push on/off	5.85	4.39	3.98	3.69
A-406R	4PDT	Momentary	5.85	4.39	3.98	3.69

plied with black C-22 button.

GREEN SERIES

GREEN SERIES MINIATURE WATERPROOF PUSHBUTTONS

"O" rings inside bushing and at panel.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MPE-106D	SPDT	Push on/off	$3.05	$2.29	$2.07	$1.92
MPE-106F	SPDT	Momentary	3.05	2.29	2.07	1.92
MPE-206N	DPDT	Push on/off	3.95	2.96	2.69	2.49
MPE-206R	DPDT	Momentary	3.95	2.96	2.69	2.49
MPE-306D	3PDT	Push on/off	5.25	3.94	3.57	3.31
MPE-306F	3PDT	Momentary	5.25	3.94	3.57	3.31
MPE-406N	4PDT	Push on/off	6.25	4.69	4.25	3.94
MPE-406R	4PDT	Momentary	6.25	4.69	4.25	3.94

Supplied with black C-22 button.

MRC SERIES MINIATURE ROTARY SWITCHES

The newest family of ALCO rotary switches. Terminals permanently molded into DAP base. Choice of 1, 2, 3, or 4 pole models. Some with adjustable stops. Available with or without knobs. Cylinders are .610″ dia. with switch depth behind panel of .620″, less terminals.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-49	50-99	100-249
MRC-1-10	1 pole, 2–10 pos.	$6.65	$4.99	$4.52	$4.19
MRC-2-5	2 pole, 2–5 pos.	6.95	5.21	4.73	4.38
MRC-3-3	3 pole, 2–3 pos.	7.25	5.44	4.93	4.57
MRC-4-2	4 pole, 2 pos.	7.85	5.89	5.34	4.95
MRC-1-10S	1 pole, 2–10 pos.	6.65	4.99	4.52	4.19
MRC-2-5S	2 pole, 2–5 pos.	6.95	5.21	4.73	4.38
MRC-3-3S	3 pole, 2–3 pos.	7.25	5.44	4.93	4.57
MRC-4-2S	4 pole, 2 pos.	7.85	5.89	5.34	4.95
MRCE-1-10S	1 pole, 2–10 pos.	7.35	5.51	5.00	4.63
MRCE-2-5S	2 pole, 2–5 pos.	7.65	5.74	5.20	4.82
MRCE-3-3S	3 pole, 2–3 pos.	7.95	5.96	5.41	5.01
MRCE-4-2S	4 pole, 2 pos.	8.55	6.41	5.81	5.39

MINIATURE ROTARY SWITCHES

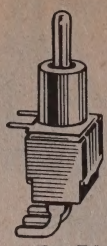
MRB adjustable stop switches are rated 150 ma @ 115 VAC. The MRB-( )-S series is a 36° rotary switch with adjustable stops from two to ten positions and is also available with 30° detent. It can be adjusted to stop from two to twelve positions. The suffix "S" indicates long shaft and the suffix "PC" indicates printed circuit mounting. The suffix "C" indicates continuous rotation.

Alcoswitch No.	Poles	Positions	Net Each, Lots of 1-24	25-49	50-99	100-249
MRB-1-10S	1	2–10	$ 6.75	$5.06	$4.59	$4.25
MRB-1-10SC	1	2–10	6.75	5.06	4.59	4.25
MRB-2-5S	2	2–5	7.75	5.81	5.27	4.88
MRB-3-3S	3	2–3	8.45	6.34	5.75	5.32
MRB-1-10S-PC	1	2–10	7.25	5.44	4.93	4.57
MRB-1-10SC-PC	1	2–10	7.25	5.44	4.93	4.57
MRB-2-5S-PC	2	2–5	8.25	6.19	5.61	5.20
MRB-3-3S-PC	3	2–3	8.95	6.71	6.09	5.64
MRB-1-12S†	1	2–12	8.55	6.41	5.81	5.39
MRB-1-12SC†	1	2–12	8.55	6.41	5.81	5.39
MRB-2-6S†	2	2–6	9.25	6.94	6.29	5.83
MRB-4-3S†	4	2–3	9.95	7.46	6.77	6.27
MRB-1-12S-PC†	1	2–12	8.95	6.71	6.09	5.64
MRB-1-12SC-PC†	1	2–12	8.95	6.71	6.09	5.64
MRB-2-6S-PC†	2	2–6	9.75	7.31	6.63	6.14
MRB-4-3S-PC†	4	2–3	10.95	8.21	7.45	6.90
MRB-1-10	1	2–10	6.75	5.06	4.59	4.25
MRB-1-10C	1	2–10	6.75	5.06	4.59	4.25
MRB-2-5	2	2–5	7.75	5.81	5.27	4.88
MRB-3-3	3	2–3	8.45	6.34	5.75	5.32
MRB-1-10-PC	1	2–10	7.25	5.44	4.93	4.57
MRB-1-10C-PC	1	2–10	7.25	5.44	4.93	4.57
MRB-2-5-PC	2	2–5	8.25	6.19	5.61	5.20
MRB-3-3-PC	3	2–3	8.95	6.71	6.09	5.64

†30° Detent

MTE

MTM-PC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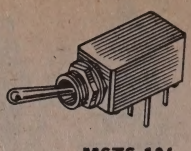
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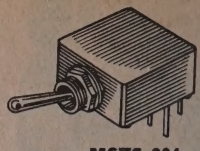
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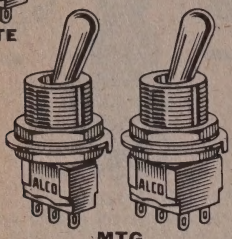
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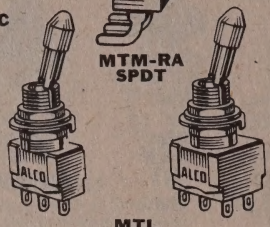
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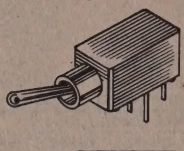
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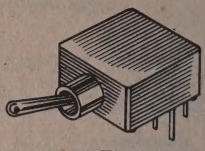

MTMS-204

MCT-110D

GREEN SERIES MINIATURE WATERPROOF TOGGLES

Bat handle, "O" ring seals inside bushing and at panel. Solder lug terminals.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MTE-106D	SPDT	On-none-on	$2.15	$1.61	$1.46	$1.35
MTE-106E	SPDT	On-off-on	2.45	1.84	1.67	1.54
MTE-106F	SPDT	On-none-on†	2.45	1.84	1.67	1.54
MTE-106G	SPDT	On†-off-on†	2.45	1.84	1.67	1.54
MTE-106H	SPDT	On-off-on†	2.45	1.84	1.67	1.54
MTE-206N	DPDT	On-none-on	2.75	2.06	1.87	1.73
MTE-206P	DPDT	On-off-on	3.10	2.33	2.11	1.95
MTE-206PA	DPDT‡	On-on-on	3.35	2.51	2.28	2.11
MTE-206R	DPDT	On-none-on†	3.10	2.33	2.11	1.95
MTE-206S	DPDT	On†-off-on†	3.10	2.33	2.11	1.95
MTE-206T	DPDT	On-off-on†	3.10	2.33	2.11	1.95
MTE-306D	3PDT	On-none-on	4.30	3.23	2.92	2.71
MTE-306E	3PDT	On-off-on	4.60	3.45	3.13	2.90
MTE-406N	4PDT	On-none-on	5.40	4.05	3.67	3.40
MTE-406P	4PDT	On-off-on	5.80	4.35	3.94	3.65

GREEN SERIES MUSTANG TOGGLES

5/32" bushing, solder lug terminals.

MTG-106D	SPDT	On-none-on	$2.30	$1.73	$1.56	$1.45
MTG-106E	SPDT	On-off-on	2.60	1.95	1.77	1.64
MTG-106F	SPDT	On-none-(on)	2.60	1.95	1.77	1.64
MTG-106G	SPDT	(On-off-(on)	2.60	1.95	1.77	1.64
MTG-106H	SPDT	On-off-(on)	2.60	1.95	1.77	1.64
MTG-206N	DPDT	On-none-on	2.90	2.18	1.97	1.83
MTG-206P	DPDT	On-off-on	3.25	2.44	2.21	2.05
MTG-206R	DPDT	On-none-(on)	3.25	2.44	2.21	2.05
MTG-206S	DPDT	(On)-off-(on)	3.25	2.44	2.21	2.05
MTG-206T	DPDT	On-off-(on)	3.25	2.44	2.21	2.05
MTG-206PA	DPDT	On-on-on	3.50	2.63	2.38	2.21
MTG-206N-PC	DPDT	On-none-on	3.10	2.33	2.11	1.95
MTG-306D	3PDT	On-none-on	4.45	3.34	3.03	2.80
MTG-306E	3PDT	On-off-on	4.75	3.56	3.23	2.99
MTG-406N	4PDT	On-none-on	5.55	4.16	3.77	3.50
MTG-406P	4PDT	On-off-on	5.95	4.46	4.05	3.75

GREEN SERIES MINIATURE LOCKING TOGGLES

Lever lock toggle must be pulled out to operate. Solder lug terminals.

MTL-106D	SPDT	On-none-on	$3.00	$2.25	$2.04	$1.89
MTL-106E	SPDT	On-off-on†	3.30	2.48	2.24	2.08
MTL-206N	DPDT	On-none-on	3.60	2.70	2.45	2.27
MTL-206P	DPDT	On-off-on	3.95	2.96	2.67	2.49
MTL-206PA	DPDT‡	On-on-on	4.20	3.15	2.86	2.65
MTL-206S	DPDT	On†-off-on†	3.95	2.96	2.67	2.49
MTL-306D	3PDT	On-none-on	5.15	3.86	3.50	3.24
MTL-406N	4PDT	On-none-on	6.25	4.69	4.25	3.94
MTL-406PA	4P3T	On-on-on	7.40	5.55	5.03	4.66
C-16*	Color-coded caps		.18	.12	.11	.10
C-16K	Natural knurled caps		.20	.14	.12	.11

*Switches are supplied with natural aluminum caps. †Momentary positions. ‡Usable as SP3T; wiring on request.

GREEN SERIES MINIATURE SHORT LEVER TOGGLE

0.27" long toggle. PC terminals. **-RA** types have right angle PC terminals and unthreaded bushing.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MTM-106D-PC	SPDT	On-none-on	$1.85	$1.39	$1.26	$1.17
MTM-106E-PC	SPDT	On-off-on	2.15	1.61	1.46	1.35
MTM-106F-PC	SPDT	On-none-on†	2.15	1.61	1.46	1.35
MTM-106G-PC	SPDT	On†-off-on†	2.15	1.61	1.46	1.35
MTM-106H-PC	SPDT	On-off-on†	2.15	1.61	1.46	1.35
MTM-206N-PC	DPDT	On-none-on	2.55	1.91	1.73	1.61
MTM-206P-PC	DPDT	On-off-on	2.90	2.18	1.97	1.83
MTM-206R-PC	DPDT	On-none-on†	2.90	2.18	1.97	1.83
MTM-206S-PC	DPDT	On†-off-on†	2.90	2.18	1.97	1.83
MTM-206T-PC	DPDT	On-off-on†	2.90	2.18	1.97	1.83
MTM-206PA-PC	DPDT	On-on-on	3.15	2.36	2.14	1.98
MTM-306D-PC	3PDT	On-none-on	4.20	3.15	2.86	2.65
MTM-406N-PC	4PDT	On-none-on	5.40	4.05	3.67	3.40
MTM-106D-RA	SPDT	On-none-on	2.10	1.58	1.43	1.32
MTM-106E-RA	SPDT	On-off-on	2.40	1.80	1.63	1.51
MTM-106F-RA	SPDT	On-none-on†	2.40	1.80	1.63	1.51
MTM-206N-RA	DPDT	On-none-on	3.05	2.29	2.07	1.92
MTM-206P-RA	DPDT	On-off-on	3.40	2.55	2.31	2.14
MTM-206R-RA	DPDT	On-none-on†	3.40	2.55	2.31	2.14

MINIATURE RIGHT ANGLE TOGGLE SWITCHES WITH PC TERMINALS AND THREADED BUSHING

New right angle switch with printed circuit terminals and ¼-40 threaded bushing for panel mounting.

MSTS-104D	SPDT	On-none-on	$1.85	$1.39	$1.26	$1.17
MSTS-204N	DPDT	On-none-on	2.55	1.91	1.73	1.61
MSTS-104DG	SPDT	On-none-on	2.15	1.64	1.51	1.42
MSTS-204NG	DPDT	On-none-on	3.15	2.41	2.23	2.11

†Momentary positions. ‡Usable as SP3T; wiring on request. Specify color caps. See Hardware.

MINIATURE RIGHT ANGLE TOGGLE SWITCHES WITH PC TERMINALS AND PLAIN BUSHING

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MTMS-104D	SPDT	On-none-on	$1.65	$1.24	$1.12	$1.04
MTMS-204N	DPDT	On-none-on	2.35	1.76	1.60	1.48
MTMS-104DG	SPDT	On-none-on	1.95	1.49	1.37	1.29
MTMS-204NG	DPDT	On-none-on	2.95	2.26	2.10	1.98

MCT MINIATURE TOGGLE SWITCHES

Cylindrical case for positive feel and reliability in smallest size possible. All metal construction with high impact terminal insulator for use in all environmental conditions. Toggle lever, 0.618" long with black tip for distinctive look. Rated 10 A at 125 VAC. Contact material is silver on copper. Internal contact resistance, under 20 milliohms at 1 amp, 2-4 VDC; life, 250,000 on-off operations. Suffix **-50** indicates Baton lever type.

MCT-110D▲	SPDT‡	On-none-on	$1.75	$1.31	$1.19	$1.10
MCTG-110D■	SPDT‡	On-none-on	1.95	1.46	1.33	1.23
MCT-110D49	SPDT	On-none-on	2.25	1.69	1.53	1.42
MCT-110D50	SPDT	On-none-on	1.85	1.39	1.26	1.17

▲With miniature ¼-40 bushings. ■With standard 13/32" bushing. Can be UL Listed by contract.

MINIATURE PC SLIDE SWITCHES

Instrument grade miniature slide switches designed for printed circuit board mounting. Primarily for use in programming, test apparatus and other instrumentation applications. All models available in SPDT and DPDT except the right-angle models (RA). Rated at 2 amps @ 230 VAC and 4 amps @ 115 VAC. "G" suffix indicates gold plated terminals.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
MSS-104D	1 Pole, 2 Pos., upright	$1.55	$1.05	$0.93	$0.78
MSS-104D-RA	1 Pole, 2 Pos., right angle	1.65	1.12	.99	.83
MSS-104D-1	1 Pole, 2 Pos., flush	1.55	1.05	.93	.78
MSS-204N	2 Poles, 2 Pos., upright	2.10	1.43	1.26	1.05
MSS-204N-1	2 Poles, 2 Pos., flush	2.10	1.43	1.26	1.05
MSS-104DG	1 Pole, 2 Pos., upright	1.85	1.30	1.18	1.03
MSS-104DG-RA	1 Pole, 2 Pos., right angle	1.95	1.37	1.24	1.08
MSS-104DG-1	1 Pole, 2 Pos., flush	1.85	1.30	1.18	1.03
MSS-204NG	2 Poles, 2 Pos., upright	2.70	1.93	1.76	1.55
MSS-204NG-1	2 Poles, 2 Pos., flush	2.70	1.93	1.76	1.55

SLS MINIATURE SLIDE SWITCHES

Economical miniature slide switch, 5/16" wide and approximately 1/4" long. Rated at 0.5 amps @ 125 VAC except 121M series, 0.3 amps @ 125 VAC; -130 and -240 series, .25 amps @ 125 VAC.

SLS-120	SPDT, w/Tabs	$0.50	$0.34	$0.30	$0.25
SLS-120-1	SPDT, w/o Tabs	.50	.34	.30	.25
SLS-121M	SPDT, w/Tabs & PC terminals	.60	.41	.36	.30
SLS-121M-1	SPDT, w/o Tabs, w/PC terminals	.60	.41	.36	.30
SLS-121M-RA	SPDT, w/o Tabs, w/PC terminals	.70	.48	.42	.35
SLS-130-PC	SP3P, w/o Tabs, w/PC terminals	.80	.54	.48	.40
SLS-220	DPDT, w/Tabs	.65	.44	.39	.33
SLS-220-1	DPDT, w/o Tabs	.65	.44	.39	.33
SLS-240-PC	DP4P, w/o Tabs, w/PC terminals	1.10	.75	.66	.55

SS SERIES SLIDE SWITCHES

Designed for printed circuit boards. Offer operational versatility, high density, light weight, and a broad variety of control functions. Rated to carry 300 mA at 30 VDC. Make before break. Have silver contacts, sealed terminals. For use in matrix applications, adjustable voltage dividers, x-y positioning, and others.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
SS-110-13	Single pole, 10+3 pos.	$2.35	$1.60	$1.41	$1.18
SS-111	Single pole, 11 positions	1.75	1.19	1.05	.88
SS-24	Double pole, 9 positions	1.20	.82	.72	.60

SS-110-111 KNOBS

KSS-1A	Natural, small, less hairline	$0.30	$0.27	$0.26	$0.24
KSS-1B	Black, small, less hairline	.30	.27	.26	.24
KSS-2A	Natural, large, less hairline	.35	.32	.30	.28
KSS-2B	Black, large less hairline	.35	.32	.30	.28
KSS-3A	Natural, large, double hairline	.40	.36	.34	.32
KSS-3B	Black, large, double hairline	.40	.36	.34	.32

CSS SERIES SLIDE SWITCH

Low-cost baton lever slides. DPDT, 300 mA at 125 VAC. Printed circuit sealed terminals, snap action, self cleaning.

CSS-022	DPDT slide with handle	$0.00	$0.00	$0.00	$0.00

ROCKER AND LEVER SWITCHES

MLN—Illuminated rocker switches feature convenient front-panel lamp replacement; snaps into .765" x .756" hole. Rated 6 amps at 125 VAC. Supplied with one red, green, amber or white lens cap; specify. For use with Alco No. 378 (6.3 V), 362 (14.0 V) or 388SC (28.0 V) lamps. **MSL**—Rocker mounts in .49" x .59" hole; molded silver contacts and terminals. **MSD**—Same as MSL, but with lever actuator. Specify red, black or white lever. **HSL**—UL Approved rocker switches rated 10 amps at 125 VAC, 6 amps at 250 VAC; over 100,000 operations. Black with tab terminals.

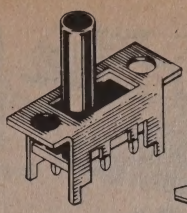
Alcoswitch No.	Description	Net Each, Lots of 1-24	25-49	50-99	100-249
MLN-206N	DPDT, on-none-on	$4.35	$3.26	$2.96	$2.74
MLN-206P	DPDT, on-off-on	4.65	3.49	3.16	2.93
MLN-206R	DPDT, none-on-on*	4.80	3.60	3.26	3.02
MSL-106D	SPDT, on-none-on	1.90	1.29	1.14	.95
MSL-106E	SPDT, on-off-on	2.10	1.43	1.26	1.05
MSL-206N	DPDT, on-none-on	2.25	1.53	1.35	1.13
MSL-206P	DPDT, on-off-on	2.70	1.84	1.62	1.35
MSD-106D	SPDT, on-none-on, lever	1.90	1.29	1.14	.95
MSD-106E	SPDT, on-off-on, lever	2.10	1.43	1.26	1.05
MSD-106F	SPDT, on-none-on*	2.25	1.53	1.35	1.13
MSD-206N	DPDT, on-none-on, lever	2.25	1.53	1.35	1.13
MSD-206P	DPDT, on-off-on, lever	2.70	1.84	1.62	1.35
MSD-206R	DPDT, on-none-on*	2.85	1.94	1.71	1.43
HSL-110A	SPST, push on-off	1.15	.86	.78	.72
HSL-110D	SPDT, push on-on	1.25	.94	.85	.79

*Momentary position.

MSH LEVER AND MSL ROCKER SWITCHES

Versatile DPDT switches; long lever or rocker actuators; contacts silver-plated. Rated 3 A at 125 VAC. Life, 25,000 cycles.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
MSH-203N-3	Lever actuator	$1.85	$1.39	$1.26	$1.17
MSL-203N-7	Rocker actuator	1.85	1.39	1.26	1.17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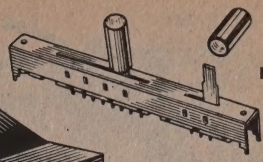
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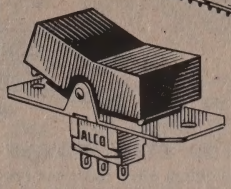
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MRL-30

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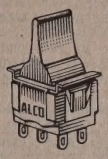
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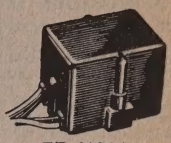
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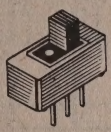
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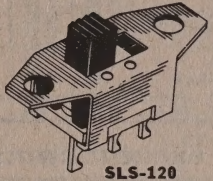
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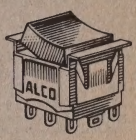

MLN

GREEN SERIES MDL SERIES ROCKER AND PADDLE SWITCHES

Miniature rocker or lever switches with 6 Amp current carrying capacity. Mounts without hardware with clips. Case material is high temperature DAP. Gold flash contacts and terminals. Actuators available in red, black, grey, green, blue, orange or yellow. Please specify.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MDL-106D-70	SPDT	On-none-on	$1.90	$1.43	$1.29	$1.20
MDL-106D-80	SPDT	On-none-on	1.90	1.43	1.29	1.20
MDL-106E-70	SPDT	On-off-on	2.10	1.58	1.43	1.32
MDL-106E-80	SPDT	On-off-on	2.10	1.58	1.43	1.32
MDL-106F-70	SPDT	On-none-(on)	2.25	1.69	1.53	1.42
MDL-106F-80	SPDT	On-none-(on)	2.25	1.69	1.53	1.42
MDL-206N-70	DPDT	On-none-on	2.25	1.69	1.53	1.42
MDL-206N-80	DPDT	On-none-on	2.25	1.69	1.53	1.42
MDL-206P-70	DPDT	On-off-on	2.70	2.03	1.84	1.70
MDL-206P-80	DPDT	On-off-on	2.70	2.03	1.84	1.70
MDL-206R-70	DPDT	On-none-(on)	2.85	2.14	1.94	1.80
MDL-206R-80	DPDT	On-none-(on)	2.85	2.14	1.94	1.80

-70 indicates rocker type; **-80** indicates lever type.

GREEN SERIES MINIATURE ROCKERS AND PADDLES

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-49	50-99	100-249
MRL-106D-30/40	SPDT	On-none-on	$2.10	$1.58	$1.43	$1.32
MRL-106E-30/40	SPDT	On-off-on	2.40	1.80	1.63	1.51
MRL-106F-30/40	SPDT	On-none-on†	2.40	1.80	1.63	1.51
MRL-206N-30/40	DPDT	On-none-on	2.70	2.03	1.84	1.70
MRL-206P-30/40	DPDT	On-off-on	3.05	2.29	2.07	1.92
MRL-206R-30/40	DPDT	On-none-on†	3.05	2.29	2.07	1.92
MRL-306D-30/40	3PDT	On-none-on	4.25	3.19	2.89	2.68
MRL-406N-30/40	4PDT	On-none-on	5.35	4.01	3.64	3.37

-30 denotes rocker type; **-40** denotes lever type.

INDUCTION RELAYS

Ideal for remote control applications, eliminating shock hazards. Combines isolated step-down transformer and sensitive low voltage relay in a single laminated core. Low voltage circuit can be run through ordinary surface wiring with low current drain. Max. load, 7 amps at 125 VAC, 60 Hz, except types with suffix **-230**, 3.5 amps at 230 VAC, 60 Hz.

Alco Model FR-102—SPDT basic. Net Each..... **$5.20**

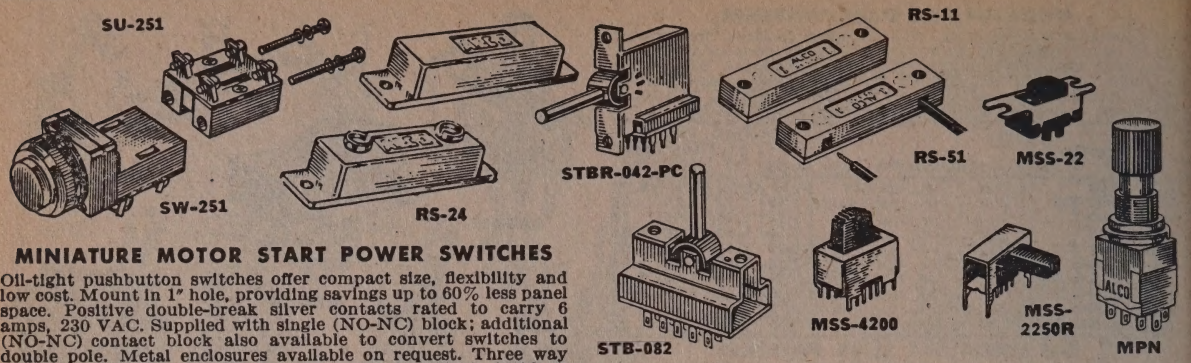
Alco Model FR-102-230—230-V version of above. Net..... **5.70**

Alco Model FRE-103—Plug-in outlet combined with SPDT relay (same as FR-102). Provides actuating voltage to an alarm or remote accessory. Has 3-way receptacle to select NO or NC circuit. Side jack serves as plug-in for remote sensor unit. Net Each..... **$7.30**

Alco Model FRP-104—Same as FR-102, but plug-in octal base relay enclosed in plastic dust cover. Net Each..... **$6.25**

Alco Model FR-105A1—SPST basic switch, similar to FR-102 but more compact. UL Listed. Net Each..... **$4.65**

Alco Model FR-105-230—230-V version of above. Net..... **5.20**



MINIATURE MOTOR START POWER SWITCHES

Oil-tight pushbutton switches offer compact size, flexibility and low cost. Mount in 1" hole, providing savings up to 60% less panel space. Positive double-break silver contacts rated to carry 6 amps, 230 VAC. Supplied with single (NO-NC) block; additional (NO-NC) contact block also available to convert switches to double pole. Metal enclosures available on request. Three way selector switch has a bar knob with pointer, available in black only.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
SW-251	Standard button	$4.65	$3.16	$2.79	$2.33
SW-251D	Mushroom button	5.45	3.71	3.27	2.73
SW-251L	Long button	4.85	3.30	2.91	2.43
SW-251S-2	Selector, NO-none-NC	5.75	3.91	3.45	2.88
SW-251S-3	Selector, NO-off-NC	5.75	3.91	3.45	2.88
SU-251	NO-NC block	2.85	1.94	1.71	1.43
C-251-00	On-off buttons	.65	.44	.39	.33
C-251-SS	Stop-start buttons	.65	.44	.39	.33
C-251-HL	High-low btns., pair	.65	.44	.39	.33
C-251-UD	Up-down btns., pair	.65	.44	.39	.33

PROXIMITY MAGNETIC SWITCHES

Uses replaceable dry reed switch. Reliable, long life (over 5 million operations). Alnico V magnet actuates within 1". Rated 0.5 A break, 1.0 A carry.

RS-24-NO	Norm. open (apart)	$3.45	$2.35	$2.07	$1.73
RS-24-NC	Norm. closed (apart)	3.75	2.55	2.25	1.88

MINIATURE PROXIMITY MAGNETIC SWITCHES

Dry reed switches RS-11-NO and RS-11-NC actuated by Alnico V magnet within .39". Has 8" leads. Rated .15 A break, .5 A carry at 50 VDC; 200 VDC breakdown. Dry reed switches RS-51-NO and RS-51-NC actuated by Alnico V magnet within 7/16". Rated .5 A at 100 VDC, 125 VAC. Life, 10 million cycles. Size, 1.102" x .335".

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
RS-11-NO	Norm. open (apart)	$2.85	$1.94	$1.71	$1.43
RS-11-NC	Norm. closed (apart)	3.75	2.55	2.25	1.88
RS-51-NO	Norm. open (apart)	1.95	1.33	1.17	.98
RS-51-NC	Norm. closed (apart)	2.25	1.53	1.35	1.13

KEYLOCK SWITCH

Roller-type mechanical action with positive contact. Choice of 25 keys. Rated 5 A resistive, 115 VAC; 15 A. 24 VDC. Flatted ¾" diameters barrel fits panels to ¾" thick.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-49	100-499	500-999
SWK-12	SPST Off or On	$5.95	$4.05	$3.57	$2.98
SWK-12-1	SPST Off	5.95	4.05	3.57	2.98
SWK-12-3	SPST On	5.95	4.05	3.57	2.98
SWK-13-1	Rmv. key/Off Pos.	3.95	2.69	2.37	1.98
SWK-13-2	Rmv. key/Off or On Pos.	3.95	2.69	2.37	1.98
SWK-13-3	Rmv. key/On Pos.	3.95	2.69	2.37	1.98
SWK-23-1	Rmv. key/Off Pos. Mom.	3.95	2.69	2.37	1.98
SWK-23-3	Rmv. key/On Pos. Mom.	3.95	2.69	2.37	1.98
SWK-13K	2 Extra keys	.60	.41	.36	.30

MPN PUSHBUTTON SWITCHES

Alco® lighted snap-action switches rated 6 amps at 125 VAC or 3 amps at 250 VAC. Built to withstand abuse; feature a metal construction, phenolic miniature case and solid silver contacts. Choice of round or square plastic buttons in nine different shades at extra cost. Employ standard T-1¾ grooved lamps, easily replaceable from the front without use of special tools. Mounts in a 1 13/32" dia. hole. Life cycle of over 20,000 operations. Units come with two hex nuts, locating ring and lock washer.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-49	50-99	100-249
MPN-206N-4*	DPDT Push-on-off	$5.75	$4.31	$3.91	$3.62
MPN-206R-4*	DPDT Momentary	5.75	4.31	3.91	3.62

For accessory buttons and guards, see hardware page.

TOGGLE SLIDE SWITCHES

Selection of terminals for PC or hand wired use. Available in wide range of poles (2 to 8 circuits) in two or three active positions. Rated 300 mA, 30 VDC. Make before break. Have silver terminals. Terminals sealed against solder flux to limit wicking. Mating power switch rated at 10 Amp, 125 VAC provided to complete the series. Model No's. with PC suffix have printed circuit terminals.

Alcoswitch No.	Poles	Positions	Net Each, Lots of 1-24	25-99	100-499	500-999
STB-012	1	2	$1.65	$1.12	$0.99	$0.83
STB-042	4	2	2.95	2.01	1.77	1.48
STB-082	8	2	3.10	2.11	1.86	1.55
STB-023	2	3	3.10	2.11	1.86	1.55
STB-043	4	3	3.50	2.38	2.10	1.75
STB-042-PC	4	2	2.95	2.01	1.77	1.48
STB-082-PC	8	2	3.10	2.11	1.86	1.55
STB-023-PC	2	3	3.10	2.11	1.86	1.55
STB-043-PC	4	3	3.50	2.38	2.10	1.75
STBR-022-PC	2	2	2.35	1.60	1.41	1.18
STBR-042-PC	4	2	2.85	1.94	1.71	1.43
STBR-062-PC	6	2	3.35	2.28	2.01	1.68
STBR-023-PC	2	3	2.95	2.01	1.77	1.48
STBR-043-PC	4	3	3.40	2.31	2.04	1.70
STBR-063-PC	6	3	3.85	2.62	2.31	1.93

MINIATURE SLIDE SWITCHES

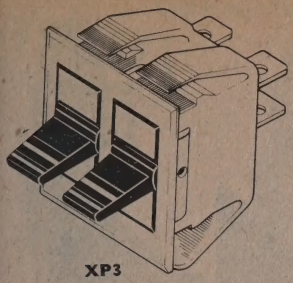
Min. 2-circuit anti-tease design (NO, NC only) rated 500 mamps, 125 VAC. Phenolic base and slide block. Gold on nickel on silver-plated brass contacts. Life, 250,000 operations. Size, .500" x .305" x .257" with two .687" mtg. centers.

Alcoswitch No.	Contacts	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
MSS-22	SPDT	2 circuit, w/tabs	$1.90	$1.27	$0.95	$0.80
MSS-22-1	SPDT	2 circuit w/o tabs	1.90	1.27	.95	.80
MSS-22-2	SPDT	2 cir. lg. lever w/o tabs	1.90	1.27	.95	.80
MSS-44	DPDT	On-none-on w/tabs	3.25	2.18	1.63	1.37

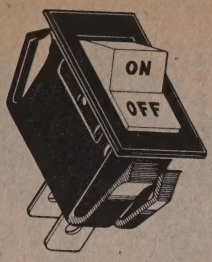
MINIATURE PRINTED CIRCUIT SLIDE SWITCHES

Mount directly to PC board. Rated 300 mA, 125 VAC. Life, 15,000 cycles at rated load. Silver-plated contacts except where noted gold (gold-plated nickel); movable contacts beryllium plated brass. MSS-4300, -6200, and larger sizes, 4-40 screw holes; others tab.

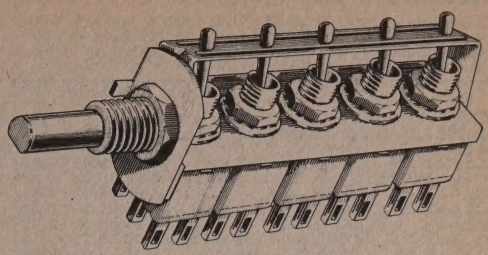
MSS-1200R	SPDT	Right angle	$0.65	$0.44	$0.39	$0.33
MSS-1200RG	SPDT	Right angle, gold	.95	.65	.57	.48
MSS-1300	SP3T	Upright	.70	.48	.42	.35
MSS-2200	DPDT	Upright	.70	.48	.42	.35
MSS-2200G	DPDT	Upright, gold	1.25	.85	.75	.63
MSS-2220	DPDT	Upright, .200" lever	.70	.48	.42	.35
MSS-2220G	DPDT	Upright, .200" lever, gold	1.25	.85	.75	.63
MSS-2250	DPDT	Upright, lg. handle	.75	.51	.45	.38
MSS-2250G	DPDT	Upright, lg. handle, gold	1.30	.88	.78	.65
MSS-2250R	DPDT	Right angle, long handle	.85	.58	.51	.43
MSS-2250RG	DPDT	Rt. angle, lg. handle, gold	1.40	.95	.84	.70
MSS-2450	DP4T	Upright, lg. handle	1.00	.68	.60	.50
MSS-2450G	DP4T	Upright, long handle, gold	2.00	1.36	1.20	1.00
MSS-4200	4PDT	Upright	.80	.54	.48	.40
MSS-4200G	4PDT	Upright, gold	1.90	1.29	1.14	.95
MSS-4200R	4PDT	Right angle	.90	.61	.54	.45
MSS-4200RG	4PDT	Right angle, gold	2.00	1.36	1.20	1.00
MSS-4300	4P3T	Upright	1.10	.75	.66	.55
MSS-4300G	4P3T	Upright, gold	2.75	1.87	1.65	1.38
MSS-4350R	4P3T	Right angle, long handle	1.35	.92	.81	.68
MSS-4350RG	4P3T	Rt. angle, long handle, gold	3.00	2.04	1.80	1.50
MSS-6200	6PDT	Upright	1.10	.75	.66	.55
MSS-6200G	6PDT	Upright, gold	2.70	1.84	1.62	1.35
MSS-6300	6P3T	Upright	1.30	.88	.78	.65
MSS-6300G	6P3T	Upright, gold	3.80	2.58	2.28	1.90
MSS-8300	8P3T	Upright	1.90	1.29	1.14	.95
MSS-10300	10P3T	Upright	2.10	1.43	1.26	1.05
MSS-12300	12P3T	Upright	2.45	1.67	1.47	1.23



XP3



XR1



ROCKER AND PADDLE SWITCHES

Compact miniature rocker and paddle switches mount without hardware. Snap-fit into cutouts in panels. Will carry loads up to 10 Amps at 125 VAC. Select from a wide assortment to suit your application. Special legends available on quantity orders.

Alco No.	Application	Net Each, Lots of 1-24	25-99	100-499	500-999
SINGLE-POLE ROCKER—XR1 SERIES					
XR110A-	On-none-off	$0.95	$0.67	$0.48	$0.41
XR110D-	On-none-on	.95	.67	.48	.41
XR110E-	On-off-on	1.05	.74	.53	.45
XR110F-	On-none-on*	1.20	.84	.60	.52
SINGLE-POLE PADDLE—XP1 SERIES					
†XP110A-	On-none-off	$0.95	$0.67	$0.48	$0.41
XP110D-	On-none-on	.95	.67	.48	.41
XP110E-	On-off-on	1.05	.74	.53	.45
XP110F-	On-none-on*	1.20	.84	.60	.52
DOUBLE-POLE ROCKER—XR2 SERIES					
§XR210A-	One-none-off	$1.65	$1.16	$0.83	$0.71
XR210D-	On-none-on	1.75	.123	.88	.75
XR210E-	On-off-on	1.75	.123	.88	.75
XR210F-	On-none-on*	2.10	1.47	1.05	.90
2 CIRCUIT ROCKER—XR3 SERIES					
§XR310AA-	On-none-off	$1.75	$1.23	$0.88	$0.75
XR310DD-	On-none-on	1.85	1.30	.93	.80
XR310FF-	On-none-on*	2.30	1.61	1.15	.99
2 CIRCUIT PADDLE—XP3 SERIES					
†XP310AA-	On-none-off	$1.75	$1.23	$0.88	$0.75
XP310DD-	On-none-on	1.85	1.30	.93	.80
XP310FF-	On-none-on*	2.30	1.61	1.15	.99
SINGLE-POLE LIGHTED ROCKER—XRL1 SERIES					
XRL110A-	On-none-off	$1.95	$1.37	$0.98	$0.84
SINGLE-POLE LIGHTED PADDLE—XPL1 SERIES					
XPL110A-	On-none-off	$1.95	$1.37	$0.98	$0.84
DOUBLE-POLE LIGHTED ROCKER—XRL2 SERIES					
XRL210A-	On-none-off	$2.20	$1.54	$1.10	$0.95
XRL210D-	On-none-on	2.40	1.68	1.20	1.03
XRL210F-	On-none-on*	2.65	1.86	1.33	1.14

*Momentary. †Also available with ON-OFF imprint on paddle. Please specify. §Also available with ON-OFF imprint on rocker. Please specify.

To identify the switch being ordered, it is necessary to specify colors by adding the appropriate code number suffix shown below:
00—Black body, Black actuator.
02—Black body, Red actuator.
09—Black body, White actuator.
90—White body, Black actuator.
92—White body, Red actuator.

For lighted models, add lens code number: **2**—Red; **4**—Amber; **9**—Clear.
Special colors considered for volume orders.

SAFETY KEYSWITCHES

Compact, high quality keyswitches for safety where unintentional switching could be hazardous. Keys removable from any position. Mount in ⅜" hole in panels up to ¼" thick. Anti-rotation device prevents movement after mounting. Available with 6 or 10 Amp switches.

Alco No.	Contacts	Action	Net Each, Lots of 1-24	25-49	50-99	100-249
CNK-106D	SPDT	On-none-on	$4.70	$3.53	$3.20	$2.96
CNK-106F	SPDT	On-off-on	5.00	3.75	3.40	3.15
CNK-206N	DPDT	On-none-on	5.30	3.98	3.60	3.34
CNK-206P	DPDT	On-off-on	5.65	4.24	3.84	3.56
CNK-306D	3PDT	On-none-on	6.85	5.14	4.66	4.32
CNK-306E	3PDT	On-off-on	7.15	5.36	4.86	4.50
CNK-406N	4PDT	On-none-on	7.95	5.96	5.41	5.01
CNK-406P	4PDT	On-off-on	8.35	6.26	5.68	5.26
CNK-110D	SPDT	On-off	4.70	3.32	3.20	2.87
CNK	Keyswitch adapter unit		2.95	2.01	2.01	1.77
	Extra key for CNK		.75	.51	.51	.45

CONVERSION UNIT FOR ROTARY OPERATION

Incorporates unique method of ganging miniature toggle switches to control multiple circuits simultaneously. Operating as a 2 or 3-position rotary switch, unit can gang up to five toggle switches. Consumes minimum of behind-panel space. Also offers advantages of completely enclosed contacts and heavier current capabilities. Accommodates most miniature bat handle switches having ¼" bushings, and any number of pole configurations. Serves as 3-position rotary switch when used with center-off or on-on-on toggles, or as 2-position rotary when used with single or double-throw toggles.

Alco Model CNV-1 Conversion Unit—
Net Each, Lots of: 1–24..... **$1.95**; 25–99..... **$1.33**
Lots of: 100–499..... **1.17**; 500–999..... **1.07**

MSP SERIES MINIATURE PUSHBUTTON SWITCHES

MSP-105, MSP-205—Snap action. Rated 5 A, 115 VAC. Solid silver contacts and terminals. Bushing ¼"-40 with keyway. Black phenolic case. Life, 25,000 cycles. **MSP-103**—Economy, low pressure operation. Rated 3 A, 125 VAC. Silver-plated brass contacts and terminals. Plunger travel, .098". Bushing ¼"-40. Depth behind panel, ¼". **MSPS-103C**—Similar to MSP-103, but smaller diameter, .310". Rated 0.1 A at 125 VAC.

Alcoswitch No.	Contacts	Application	Net Each, Lots of 1-24	25-99	100-499	500-999
MSP-105D*	SPDT	Push on-off	$2.35	$1.60	$1.41	$1.18
MSP-105F*	SPDT	Momentary	2.35	1.60	1.41	1.18
MSP-205N*	DPDT	Push on-off	3.20	2.18	1.92	1.60
MSP-205R*	DPDT	Momentary	3.20	2.18	1.92	1.60
MSP-103B†	SPST	Norm. closed	.85	.58	.51	.47
MSP-103C‡	SPST	Norm. open	.85	.58	.51	.47
MSP-103C-B†	SPST	Norm. open	.85	.58	.51	.47
MSPS-103C†	SPST	Norm. open	.65	.44	.39	.36
MSPS-103B†	SPST	Norm. closed	.65	.44	.39	.36
C-12*	Extra plastic button		.15	.10	.09	.085
C-13*	Large button		.18	.11	.10	.09
C-14	Chrome button (thin)		.10	.07	.06	.055
C-14L	Chrome button		.15	.10	.09	.085
C-5	For MPA-3 Series		.08	.06	.05	.045
C-8	For MPA-3 Series		.10	.07	.06	.055
C-9	For MPG Series		.08	.06	.05	.045
C-10	For MTA and MTE		.05	.045	.040	.030
C-15	For MTG Series		.08	.06	.05	.045
C-17	For MTA and MTE		.05	.045	.040	.030
C-22	Small button for MPA-6		.10	.07	.06	.055
C-23	Large button for MPA-6		.12	.09	.08	.07
G-12#	Plain guard for C-12		.35	.24	.21	.19
G-12-K#	Knurl guard for C-12		.40	.27	.24	.22
G-13#	Plain guard for C-13		.40	.27	.24	.22
G-13-K#	Knurl guard for G-13		.45	.31	.27	.25

*Specify red, green or black plastic button. †With black button. ‡With red button. #Add suffix for finish: **C**, chrome; **A**, aluminum; **B**, black.

AVAILABLE BUTTON COLORS

C5, C8—Red, white, black, green.
C9—Red, white, black, blue, yellow.
C10—Red, white, black, blue, green, pink, yellow, gray, brown.
C15—Red, white, black, blue, green.
C17—Red, white, black, blue, green, pink, yellow, gray.
C22, C23—Red, black, blue, green, amber.

SPACE DOES NOT PERMIT LISTING OF ALL RELATED COMPONENTS. WRITE FOR INFORMATION ON UNLISTED ITEMS.

SUB-MINIATURE BI-DIRECTIONAL CODE SWITCHES

Suited for applications requiring high density panel design. Push-button design affords easy, dependable operation of switches. Life expectancy exceeds 500,000 operations. Operating voltage: 60 volts max. Contact load, static: 0.5 amps max.

Alcoswitch No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99
SMC-111-AK	Decimal, 0–9	$5.25	$4.73	$4.46	$4.20
SMC-111-AK/01	BCD, 0 & 1, Cont.	5.65	5.09	4.80	4.52
SMC-111-AK/05	BCD, 0 & 5, Cont.	5.65	5.09	4.80	4.52
SMC-111-AK/+ −	BCD, + & −, cont.	5.65	5.09	4.80	4.52
SMC-111-AL	Dec., 0–9, Ext'd PCB	5.95	5.36	5.06	4.76
SMC-131-AK	BCD, 0–9	5.65	5.09	4.80	4.52
SMC-131-AL	BCD, 0–9, Ext'd PCB	6.35	5.72	5.40	5.08
SMC-131-AL/D	BCD, 0–9, Ext'd PCB, diode	6.30	5.67	5.36	5.04
SMC-137-AK	BCD Complement, 0–9	5.65	5.09	4.80	4.52
SMC-141-AK	BCD w/Complement, 0–9	6.30	5.67	5.36	5.04
SMC-161-AK	7-Segment, 0–9	6.30	5.67	5.36	5.04
SMC-DS/0-9	Dummy Switch, 0–9	1.65	1.49	1.40	1.32
SMC-P	End Mtg. Plates	1.35	1.22	1.15	1.08
SMC-BG	.300″ Spacer	.75	.68	.64	.60
SMC-S	.100″ Spacer	.60	.54	.51	.48
SMC-S/DP	.100″ Spacer, Dec. Pt.	.85	.77	.72	.68
B9L	Conn., 9 Contacts	1.65	1.49	1.40	1.32
B11LS	Conn., 11 Contacts	2.15	1.94	1.83	1.72

BI-DIRECTIONAL CODE SWITCHES

These miniature bi-directional pushbutton code switches are intended for applications requiring maximum character size and viewing distance. For use in communications, test, data processing and process control equipment. Operating voltage: 60 volts max. Contact load, static: 1 amp max.

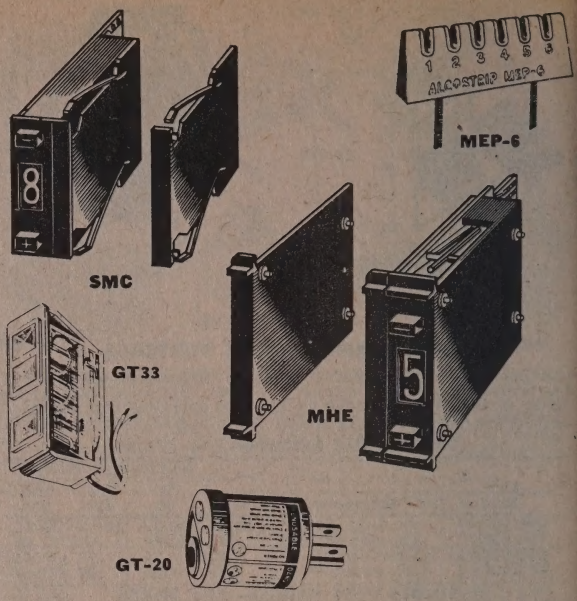
Alco-switch No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99
MHE-111-AK	Decimal Output	$7.95	$7.15	$6.76	$6.36
MHE-131-AK	BCD Output	8.95	8.05	7.61	7.16
MHE-131-AL	BCD, Ext. PC Brd.	11.50	10.35	9.77	9.20
MHE-141-AK	BCD, w/Compliment	10.50	9.45	8.92	8.40
MHE-P (Pair)	End Plates	1.30	1.16	1.10	1.04
MHE-BG	.472″ Spacer	1.50	1.35	1.27	1.20
MICO-111-AK	Decimal Output	7.50	6.75	6.37	6.00
MICO-131-AK	BCD Output	8.25	7.42	7.01	6.60
MICO-131-AL	BCD, Ext. PC Brd.	10.50	9.45	8.92	8.40
MICO-141-AK	BCD, w/Compliment	9.50	8.55	8.07	7.60
MICO-P (Pair)	End Mounting Plates	1.20	1.08	1.02	.96
MICO-H (Pair)	ClampingScrewElement	1.20	1.08	1.02	.96
MICO-BG	.433″ Spacer	1.25	1.12	1.06	1.00
B12L	MICO Connector	2.25	2.03	1.91	1.80

MAGNETIC REED PUSHBUTTON SWITCHES

SPST momentary for data processing equipment; ceramic magnets eliminate springs. Light and snappy touch with little change in pressure over very long periods of service. Contacts are glass-encapsulated reeds for long life; plunger is keyed and non-rotating; metal case withstands abuse and serves as a shield. Rated 100 mA at 50 VDC; resistance, 100 milliohms. Contact bounce, 1 msec; plunger travel, 5/64″. Oper. force, 2 oz. Life, 10 million cycles.

Alcoswitch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
MSPM-101B*	NC; solder lugs	$4.25	$3.40	$2.98	$2.76
MSPM-101C†	NO; solder lugs	4.10	3.28	2.87	2.67
MSPM-101B-1*	NC; .110″ terminal	4.25	3.40	2.98	2.76
MSPM-101C-1†	NO; .110″ terminal	4.10	3.28	2.87	2.67
MSPM-101BP	Push-pull	4.25	3.40	2.98	2.76
MSPM-101CP	Push-pull	4.25	3.40	2.98	2.76
MSPM-101BS-1	NC; solder lug	4.25	3.40	2.98	2.76
MSPM-101CS-1	NO; solder lug	3.90	3.12	2.73	2.54
MSPM-101BS	NC; PC terminal	4.25	3.40	2.98	2.76
MSPM-101CS	NO; PC terminal	3.90	3.12	2.73	2.54
C-22‡	Extra button	.10	.07	.06	.055

*Supplied with C-22 black button. †Supplied with C-22 red button. ‡Packages of 25; specify red, black or green.



CERAMIC TERMINAL STRIPS

Thread mounted terminal strips with fired silver, copper plates and tinned terminals to facilitate high temperature soldering of components and leads. The NB series have a snap mounting feature.

Alco-switch No.	No. Slots	Lgt.	Mtg. Ctr.	Net Each, Lots of 1-99	100-249	250-499	500-999
MEP-2	2	.650	—	$0.80	$0.56	$0.52	$0.48
MEP-4	4	1.161	.512	1.10	.77	.72	.66
MEP-6	6	1.673	1.024	1.40	.98	.91	.84
MEP-8	8	2.185	1.535	1.70	1.19	1.11	1.02
MEP-10	10	2.697	2.047	2.10	1.47	1.37	1.26
MEP-12	12	3.209	2.560	2.30	1.61	1.50	1.38
MEP-NB-3	3	.590	—	.95	.67	.62	.57
MEP-NB-5	5	.876	.490	1.15	.81	.75	.69
MEP-NB-7	7	1.162	.475	1.45	1.02	.94	.87
MEP-NB-9	9	1.448	.750	1.65	1.16	1.07	.99
MEP-NB-13	13	2.020	1.500	1.90	1.33	1.24	1.14
MEP-NB-16	16	2.449	1.500	2.15	1.51	1.40	1.29
MEP-NB-20	20	3.021	2.520	2.50	1.75	1.63	1.50

AC LINE MONITOR

The GT33 Line Monitor is a safe/Power-On panel assembly designed to give equipment operators protection against potential electrical shock hazard when there is a malfunction at the power source.

Alco-switch No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
GT33	AC Line Monitor	$2.49	$1.67	$1.49	$1.25

GROUNDED SYSTEM OUTLET TESTER

The GT-20 tester tells you if your AC outlets are safely grounded. Amber lights show if outlet is O.K. Red light indicates reversed polarity, faulty connections or absent grounds. High-impact case. For home, shop, campers, electricians, maintenance men, etc.

Alco-switch No.	Description	Net Each, Lots of 1-23	24-59	60-239
GT-20	Grounded outlet tester	$7.95	$5.30	$4.77
	Adapter for GT-20	.75	.45	.38

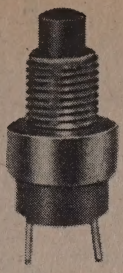
Our Stocks are Complete and up-to-date.

Write for information on new or unlisted items.

C&K MOMENTARY PUSHBUTTON AND ILLUMINATED ROCKER SWITCHES

SUBMINIATURE BUTT CONTACT SPST MOMENTARY PUSHBUTTON SWITCHES

8531, 8533



8532, 8534

SPST momentary contact switches available NO and NC with and without overtravel and pretravel. **Model 8531:** NO with 0.020 min. overtravel; total travel, 0.110; actuation force, 8 oz. ±4. **Model 8532:** NO; total travel, 0.060; actuation force, 10 oz. ±4. **Model 8533:** NC with 0.020 min. pretravel; total travel, 0.055; actuation force, 8 oz. ±4. **Model 8534:** NC; total travel, 0.040; actuation force, 8.5 oz. ±4. **Contact Ratings:** Coin silver contacts rated 1 amp resistive load at 115 VAC or 28 VDC or 0.5 amp at 250 VAC. Optional brass contacts with gold plate over nickel rated 0.4 volt-amp max. at 20 VAC/VDC max. **Insulation Resistance:** 10,000 megohms min. **Dielectric Strength:** 1,000 V rms at sea level. **Electric Life:** One million make-and-break cycles. **Initial Contact Resistance:** 10 milliohms max. **Materials and Finishes:** Red phenolic base with black phenolic pushbutton; red pushbutton available, specify. Coin silver solder terminals. Brass cadmium plated bushing; brass nickel plated hex nut and nickel plated CRS internal tooth lockwasher normally supplied. Dress nuts available on request. **Size:** Models 8531 and 8533, 0.375″ dia. x 1.047″ h. overall; Models 8532 and 8534, 0.375″ dia. x 0.935″ h. overall. Require ¼″ dia. mounting hole. **NOTE:** Button caps soon to be available for 8500 Series pushbutton switches.

C & K Model	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-4999	5000-9999	10M Up
8531	$1.09	$0.76	$0.68	$0.60	$0.56	$0.54	$0.52
8532	1.09	.76	.68	.60	.56	.54	.52
8533	1.09	.76	.68	.60	.56	.54	.52
8534	1.09	.76	.68	.60	.56	.54	.52

Following options available; add desired suffix to Model No. Example: 8531**E**.

C & K Suffix	Description	Add On, Each 1-999	1000 Up
B	Brass w/gold plate over nickel contacts	$0.10	$0.08
C	Printed circuit terminal	.10	.08
E	Terminal seal (.062″ epoxy height)	.10	.08
G	Silver w/gold plate over nickel contacts	.25	.20
Q	Specify red plunger	No Charge	

MICROMINIATURE BUTT CONTACT SPST MOMENTARY PUSHBUTTON SWITCHES

8631

8632, 8633

SPST momentary contact pushbutton switches available NO with or without overtravel and NC. **Model 8631:** NO; total travel, 0.040 ±0.015; actuation force, 5 oz. ±3. Coin silver contacts rated ½ amp resistive load at 115 VAC or 28 VDC; ¼ amp at 250 VAC. Electric life, one million make-and-break cycles. Size, 0.251″ dia. x 0.635″ h. overall. **Model 8632:** NO with .015 min. overtravel; total travel, 0.080 ±0.025; actuation force, 5 oz. ±3. Coin silver contacts rated ½ amp resistive load at 115 VAC or 28 VDC; ¼ amp at 250 VAC. Electric life, 100,000 make-and-break cycles. Size, 0.251″ dia. x 0.755″ h. overall. **Model 8633:** NC; total travel, 0.040 ±0.015; actuation force, 5 oz. ±3. Coin silver contacts rated ¼ amp resistive load at 115 VAC or 28 VDC; ⅛ amp at 250 VAC. Electric life, 250,000 make-and-break cycles. Size, 0.251″ dia. x 0.745″ h. overall. **Insulation Resistance:** 10,000 megohms min. **Dielectric Strength:** 500 V rms at sea level. **Initial Contact Resistance:** 10 milliohms max. **Materials and Finishes:** Red phenolic base with black phenolic pushbutton (red pushbutton available, specify). Coin silver solder terminals. Brass cadmium plated mounting bushing; brass nickel plated hex nut supplied. Require 1¼″ dia. mounting hole. **NOTE:** Button caps soon to be available for 8600 Series pushbutton switches.

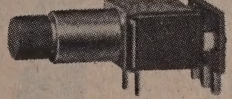
C & K Model	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-4999	5000-9999	10M Up
8631	$1.37	$0.95	$0.84	$0.74	$0.68	$0.65	$0.63
8632	1.53	1.05	.94	.84	.76	.73	.71
8633	1.86	1.28	1.13	.99	.90	.87	.84

Following options available; add desired suffix to Model No. Example: 8631**B**.

C & K Suffix	Description	Add On, Each 1-999	1000 Up
B	Brass w/gold plate over nickel contacts	$0.10	$0.08
E	Terminal seal (.062″ epoxy height)	.10	.08
G	Silver w/gold plate over nickel contacts	.25	.20
Q	Specify red plunger	No Charge	

MINIATURE MOMENTARY PUSHBUTTON SWITCHES

P8121



P8121R

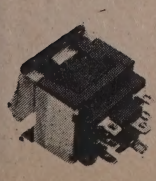
Double-throw, momentary pushbutton switches available in a choice of one, two, three or four poles. Single pole switch available as right angle mounting; has PC mounting terminal support of half-hard brass electrotin plated; PC board is G10 epoxy with 1 oz. electrotin plated copper; projecting fingers, only have copper both sides; circuit on PC board has copper outside only. Gold contact surfaces on copper alloy terminals with epoxy sealed terminals. Designed for use in dry (very low energy) circuits. Stainless steel housing on red phenolic case for good appearance and rugged, long lasting construction. **Contact Rating:** 1 amp resistive load at 115 VAC or 28 VDC. **Insulation Resistance:** 1,000 megohms min. **Dielectric Strength:** 1,000 V rms at sea level. **Electric Life:** 60,000 cycles min. at full load. **Mechanical Life:** 100,000 make-and-break cycles min. **Plunger Force:** 10 lbs. max. allowable. **Mounting Bushing:** Cadmium plated with clear chromate over brass; high torque to withstand 12 in.-lb. with no distortion or loosening of parts. **Pushbutton:** White nylon. White nylon press fit cap 0.200″ dia. x 0.155″ h. normally supplied. If specified, 0.200″ dia. x 0.155″ h. or 0.375″ dia. x 0.250″ h. press fit caps in black, red, orange, yellow, green, blue, brown or gray available at no extra cost. **Standard Hardware:** Complete with 2 hex mounting nuts, 1 internal tooth lockwasher and 1 locking ring. Dress nuts available on request. **Size:** P8121 SPDT, 0.500″ w. x 0.270″ d. x 1 3/32″ h. overall; P8121R SPDT, 0.500″ w. x 0.284″ h. x 1.046″ lg. overall; P8221 DPDT, 0.500″ w. x 0.450″ d. x 1 3/32″ h. overall; P8321 3PDT, 0.500″ w. x 0.650″ d. x 1 5/32″ h. overall; P8421 4PDT, 0.500″ w. x 0.850″ d. x 1 5/32″ h. overall.

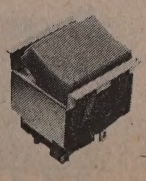
Following options available; add desired suffix to Model No. Example: P8121**C**.

C & K Suffix	Description	Add On/Pole 1-999	1000 Up
C	Printed circuit terminals	$0.10	$0.08
I	Epoxy potted base	.25	.20

C & K Model	Poles and Throw	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-4999	5000-9999	10M Up
P8121	SPDT	$3.31	$2.21	$1.90	$1.67	$1.55	$1.46	$1.39
P8121R	SPDT	4.80	3.46	3.01	2.59	2.41	2.28	2.19
P8221	DPDT	4.62	3.08	2.66	2.34	2.16	2.04	1.94
P8321	3PDT	6.73	4.49	3.88	3.41	3.14	2.98	2.83
P8421	4PDT	8.38	5.59	4.82	4.24	3.91	3.70	3.52

SPDT AND DPDT ILLUMINATED ROCKER SWITCHES





Illuminated rocker switches in SPDT and DPDT versions. Both snap into .750″ sq. hole in front or sub-panels and protrude into equipment space less than 1″ (for Z-type solder terminations). Uses popular T-1½ and T-1¾ size bulbs. Snap-off actuator/lenses in red, green, amber and white colors. Trim bezel PN7888 in all popular colors of nylon is also available at **$0.05** ea. Lamps not supplied.

Function	Single Pole C & K Model	Net Each, Lots of 1-24	25-99	100-499	Double Pole C & K Model	Net Each, Lots of 1-24	25-99	100-499
On-None-On	5101	$2.70	$1.83	$1.66	5201	$3.07	$2.12	$1.92
On-Off-On	5103	3.07	2.12	1.92	5203	3.20	2.35	2.15
On*-Off-On*	5105	3.07	2.12	1.92	5205	3.20	2.35	2.15
On-Off-On*	5107	3.07	2.12	1.92	5207	3.20	2.35	2.15
On-None-On*	5108	3.07	2.12	1.92	5208	3.20	2.35	2.15

*Momentary position.

C&K SUBMINIATURE TOGGLE, ROCKER AND PADDLE HANDLE SWITCHES

Subminiature toggle, rocker and paddle handle switches combine maximum performance with minimum size. Stainless steel housing on general purpose red phenolic case. Basic models available with UL Listing. **Contact Ratings:** Coin silver contacts rated 5 amps resistive load at 115 VAC or 28 VDC; 2 amps at 250 VAC. Brass contacts plated with 100 millionths gold over nickel rated 0.4 volt-amp at 20 volts max. AC/DC. Coin silver plated with 100 millionths gold over nickel rated at 0.4 VA at 20 volts max. AC/DC or 5 amps resistive load at 115 VAC or 28 VDC; 2 amps at 250 VAC. **Electric Life:** 100,000 make-and-break cycles minimum on all models ending in 01 only; all other models 40,000 cycles. **Initial Contact Resistance For Silver:** 10 milliohms max. at 2–4 VDC, 1 amp. **Insulation Resistance:** 1,000 megohms min. **Dielectric Strength:** 1,000 V rms at sea level. **Mounting Bushing:** Cadmium plated with clear chromate over brass. **Operating Lever:** Bright chrome plated brass. **Standard Hardware:** Complete with 2 hex mounting nuts; 1 internal tooth lockwasher and 1 locking ring. Dress nuts available on request. Available with long or standard vinyl color caps at no extra cost. Specify length, standard or long; color, black, brown, red, orange, yellow, green, blue, gray or white. **Size:** SPDT, 0.500″ w. x 0.270″ d. x 1.265″ h. overall; DPDT, 0.500″ w. x 0.450″ d. x 1.265″ h. overall; 3PDT, 0.500″ w. x 0.650″ d. x 1.331″ h. overall; 4PDT, 0.500″ w. x 0.850″ d. x 1.331″ h. overall. Bushing ¼-40NS-2A-THD; keyway 0.040″ w.

HOW TO ORDER: Specify toggle switch Part No.; add option suffixes required. Options shown at extra cost are in lots of 1–999; 1,000 Up on request; add to toggle switch price.

7101 L D P C G E

① ② ③ ④ ⑤ ⑥ ⑦

① **Model Number:** 7101 SPDT on-none-on.

② **Toggles: M,** .200″ short; **S,** .410″ standard; **L,** .840″ long standard; **L1,** .640″ long; **L2,** .550″ long; **P3,** .450″ flatted; **P1,** .840″ flatted. Add .070″ if used in conjunction with **D** bushing. **P3** and **P1** add **50c** per switch to basic price.

③ **Bushings: Y,** .350″ standard; **Y1,** .378″ long pinned; **D,** .280″ short; **H,** .296″ high torque; **U,** .350″ with .173″ thread length. **Y1,** add **50c** per switch to basic price.

④ **Pinning: P,** for antirotation of toggle. Available for all toggle and bushing combinations. Add **50c** per switch to basic price.

⑤ **Terminals: Z,** .156″ standard; **C,** .250″ printed ckt.; **W,** .750″ wire wrap; **W1,** .964″ wire wrap. **C** add **10c** per pole to basic price. W and **W1** add **25c** per pole to basic price.

⑥ **Terminal Material: B,** gold plate over brass; **G,** gold plate over silver; **Q,** coin silver (90% Ag, 10% Cu); **WG*,** gold plate over silver printed ckt.; **WQ*,** coin silver (90% Ag, 10% Cu) printed ckt. **G,** add **25c** per pole; **WG,** add **75c** per pole; **WQ,** add **50c** per pole to basic price.

⑦ **Seal: E,** epoxy terminal seal; **I,** epoxy potted base. **E,** add **10c** per pole; **I,** add **25c** per pole to basic price.

*Configuration of special printed ckt. terminals **WG** and **WQ** is same as **W.** See Item 5.

SPECIAL CONFIGURATION OPTIONS: Following are available as listed.

Splashproof: CKW prefix; special "O" ring sealing around toggle and bushing for tight panel seal. **Right Angle Mounting: A** (horizontal) or **AV** (vertical). For printed circuit terminals **R** (horizontal) or **VW** (vertical) mounting. Terminal support is half-hard brass electrotin plated. Contacts and terminal supplied are brass with 100 millionths gold plate. Non-threaded bushing is standard; available with toggle and bushing options except **H, U** and **Y1.** Printed circuit **R** and **VW** only: PC board is G10 epoxy with 1 oz. electrotin plated copper. Projecting fingers only have copper both sides. Circuit on PC board has copper outside only. **15/32″ Bushing with Large Toggle: T,** bright chrome plated toggle. **Lever Lock: K,** all models except 08. Supplied with natural aluminum cap; anodized red, blue or black available on request. **Rocker Switches: J1** rocker switch; **J3** large rocker switch and **J10** special large rocker. **Paddle Handles: J2** paddle handle and **J4** large paddle handle. Unless otherwise specified, black nylon rocker and paddle is supplied. Other rocker and paddle colors available at no extra charge. Specify red, blue, white, green, orange or yellow. Special colors molded to order also available on request at additional cost. **Bezel:** For **J1** rocker switch and **J2** paddle handles. Accommodates panel thicknesses from .062″ to .125″. **Add** appropriate price below to desired toggle switch price and prefix or suffix to number.

C & K Suffix	Models Available	Add'l Net Each 1-999	Add'l Net Each 1000-10,000	C & K Suffix	Models Available	Add'l Net Each 1-999	Add'l Net Each 1000-10,000
CW*	All Models	**$0.35**	**$0.25**	**K‡**	All except 08	**$1.25**	**$1.00**
R, VW‡	7101 only	**3.80**	**2.95**	**J1, J3**	All Models	**.35**	**.25**
R, VW‡	7103 thru 7109	**4.10**	**3.18**	**J10**	All Models	**.35**	**.25**
A	All SPDT, DPDT	**.25**	**.20**	**J2, J4**	All Models	**.35**	**.25**
AV	All Models	**.25**	**.20**	**Bezel†**	J1 or J2	**.35**	**.25**
T	All Models	**.75**	**.60**				

*Prefix (**CW** 7101). †Order by part no.: **7645-1,** bright chrome plate; **7645-2,** black; **7645-3,** satin chrome plate. Bezel material, spring steel enamel. ‡ Lots of 1–24; 25–99.

BUSHING MOUNT TOGGLE SWITCHES

C & K No.	Contacts	Application	Net Each, Lots of 1-24	25-99	100-499	500-999	1M-4999	5M-9999	10M Up
7101	SPDT	On-none-on	$1.75	$1.20	$1.05	$0.93	$0.87	$0.83	$0.79
7103	SPDT	On-off-on	2.05	1.40	1.23	1.08	1.01	.96	.92
7105	SPDT	On†-off-on†	2.05	1.40	1.23	1.08	1.01	.96	.92
7107	SPDT	On-off-on†	2.05	1.40	1.23	1.08	1.01	.96	.92
7108	SPDT	On-none-on†	2.05	1.40	1.23	1.08	1.01	.96	.92
7109	SPDT	None-on-on†	2.05	1.40	1.23	1.08	1.01	.96	.92
7201	DPDT	On-none-on	2.35	1.63	1.44	1.28	1.20	1.16	1.12
7203	DPDT	On-off-on	2.75	1.90	1.68	1.48	1.39	1.32	1.28
7205	DPDT	On†-off-on†	2.75	1.90	1.68	1.48	1.39	1.32	1.28
7207	DPDT	On-off-on†	2.75	1.90	1.68	1.48	1.39	1.32	1.28
7208	DPDT	On-none-on†	2.75	1.90	1.68	1.48	1.39	1.32	1.28
7209	DPDT	None-on-on†	2.75	1.90	1.68	1.48	1.39	1.32	1.28
7211	DPDT*	On-on-on	3.05	2.10	1.85	1.63	1.53	1.45	1.40
7213	DPDT*	On-on-on†	3.35	2.30	2.03	1.78	1.67	1.58	1.52
7215	DPDT*	On†-on-on†	3.35	2.30	2.03	1.78	1.67	1.58	1.52
7301	3PDT	On-none-on	4.05	2.82	2.47	2.18	2.05	1.95	1.88
7303	3PDT	On-off-on	4.35	3.02	2.64	2.33	2.19	2.08	2.00
7305	3PDT	On†-off-on†	4.35	3.02	2.64	2.33	2.19	2.08	2.00
7307	3PDT	On-off-on†	4.35	3.02	2.64	2.33	2.19	2.08	2.00
7308	3PDT	On-none-on†	4.35	3.02	2.64	2.33	2.19	2.08	2.00
7309	3PDT	None-on-on†	4.35	3.02	2.64	2.33	2.19	2.08	2.00
7401	4PDT	On-none-on	5.20	3.60	3.18	2.80	2.64	2.51	2.41
7403	4PDT	On-off-on	5.60	3.87	3.42	3.00	2.82	2.69	2.60
7405	4PDT	On†-off-on†	5.60	3.87	3.42	3.00	2.82	2.69	2.60
7407	4PDT	On-off-on†	5.60	3.87	3.42	3.00	2.82	2.69	2.60
7408	4PDT	On-none-on†	5.60	3.87	3.42	3.00	2.82	2.69	2.60
7409	4PDT	None-on-on†	5.60	3.87	3.42	3.00	2.82	2.69	2.60
7411	4PDT*	On-on-on	6.35	4.37	3.85	3.60	3.38	3.30	3.23
7413	4PDT*	On-on-on†	6.35	4.37	3.85	3.60	3.38	3.30	3.23
7415	4PDT*	On†-on-on†	6.35	4.37	3.85	3.60	3.38	3.30	3.23

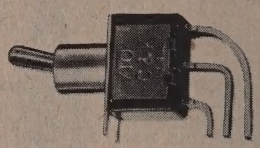
*Special purpose, three position on-on-on types. †Momentary positions.

7100

7200

7300

7400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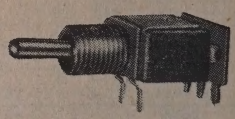
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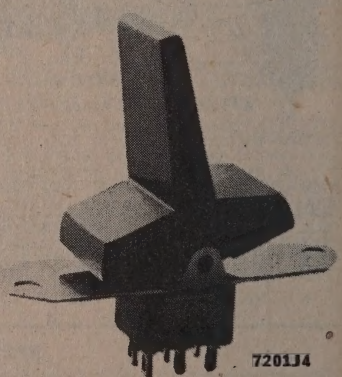
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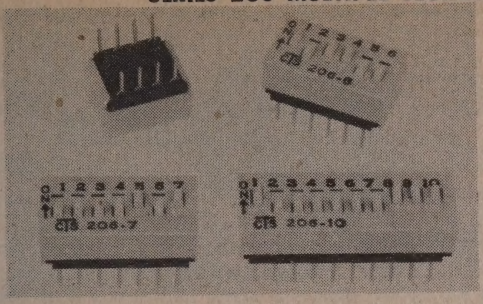
Bezel Mounting

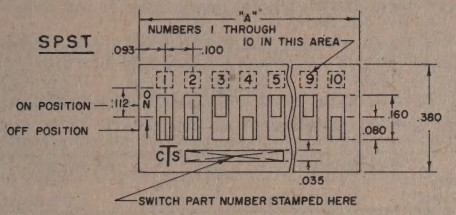
CTS Programmable DIP Switches

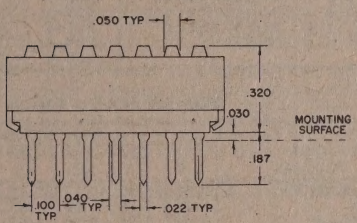
SERIES 206 MULTIPLE SECTION SPST PROGRAMMABLE DIP SWITCHES

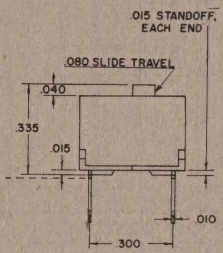


Programmable DIP switch designed for automatic insertion has standard .100″ x .300″ DIP centers. Offers 4 through 10 SPST slide switches per DIP switch. Suitable for flow soldering on PC boards or mounting with standard DIP sockets. Gold plated contact arms provide long term contact corrosion resistance. **Initial Contact Resistance:** 25 milliohms. **Maximum Contact Resistance:** 50 milliohms after 10,000 cycles switching 50 mA at 24 VDC. **Maximum Non-Switching Rating:** 100 mA at 50 VDC. **Insulation Resistance:** Across open switch, or between adjacent closed switches, 1 x 10^9 ohms. **Dielectric Breakdown:** Between adjacent switches, 500 VDC min. **Switch Capacitance:** Between adjacent switches, 5.0 pF max. **Size:** body height, .320″; terminal length, .187″. See table for overall body lengths.

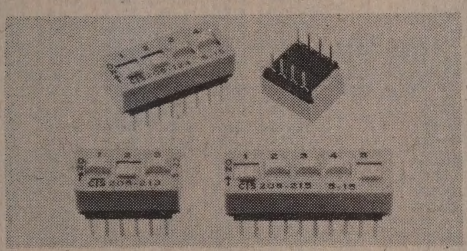
CTS No.	No. of Swit.	Size, Over-all Lgth.	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
206-4	4	.486″	$3.72	$3.25	$2.79	$2.33	$1.86	$1.86	$1.67
206-5	5	.586″	4.12	3.61	3.09	2.58	2.06	2.06	1.85
206-6	6	.686″	4.40	3.85	3.30	2.75	2.20	2.20	1.98
206-7	7	.786″	4.80	4.20	3.60	3.00	2.40	2.40	2.16
206-8	8	.886″	5.16	4.52	3.87	3.23	2.58	2.58	2.32
206-9	9	.986″	5.56	4.87	4.17	3.48	2.78	2.78	2.50
206-10	10	1.086″	5.92	5.18	4.44	3.70	2.96	2.96	2.66





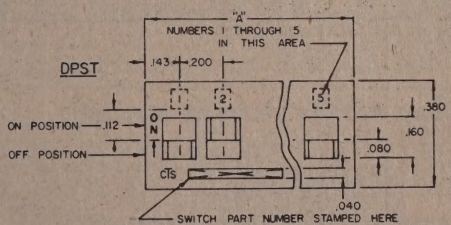


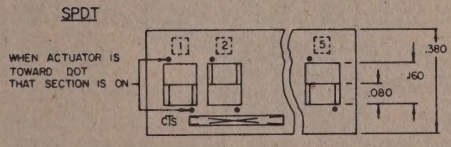
SERIES 206 MULTIPLE SECTION DPST AND SPDT PROGRAMMABLE DIP SWITCHES

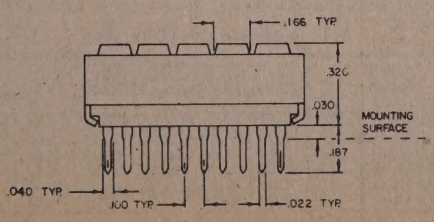


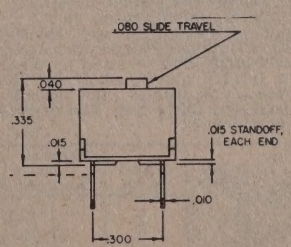
Programmable DIP switch designed for automatic insertion has standard .100″ x .300″ DIP centers. **SPDT Actuation:** Four styles incorporating from 2 thru 5 SPDT switch configurations per package. **DPST Actuation:** Four styles incorporating from 2 thru 5 DPST switches per package. Suitable for flow soldering on PC boards or mounting with standard DIP sockets. Gold plated contact arms provide long term contact corrosion resistance. **Initial Contact Resistance:** 25 milliohms. **Maximum Contact Resistance:** 50 milliohms after 10,000 cycles switching 50 mA at 24 VDC. **Maximum Non-Switching Rating:** 100 mA at 50 VDC. **Insulation Resistance:** Across open switch or between adjacent closed switches, 1 x 10^9 ohms. **Dielectric Breakdown:** Between adjacent switches, 500 VDC min. **Switch Capacitance:** Between adjacent switches, 5.0 pF max. **Size:** body height, .320″; terminal length, .187″. See table for overall body lengths.

CTS Type	No. of Swit.	Size, Over-all Lgth.	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
SPDT CONFIGURATION									
206-122	2	.486″	$4.17	$3.65	$3.33	$2.61	$2.08	$2.08	$1.87
206-123	3	.686″	4.84	4.23	3.63	3.02	2.42	2.42	2.18
206-124	4	.886″	5.60	4.91	4.20	3.51	2.80	2.80	2.53
206-125	5	1.086″	6.38	5.59	4.79	3.99	3.19	3.19	2.87
DPST CONFIGURATION									
206-212	2	.486″	$3.94	$3.45	$3.15	$2.47	$1.97	$1.97	$1.77
206-213	3	.686″	4.62	4.04	3.46	2.88	2.31	2.31	2.08
206-214	4	.886″	5.38	4.71	4.03	3.37	2.69	2.69	2.43
206-215	5	1.086″	6.14	5.39	4.62	3.84	3.07	3.07	2.77





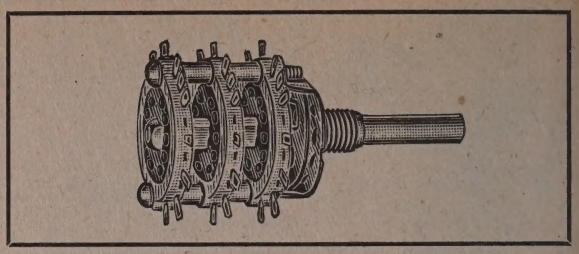




CTS Rotary Selector Switches

SERIES 212 INDUSTRIAL 1 1/16" DIAM. ROTARY SELECTOR SWITCHES

Standard, compact industrial rotary selector switches. Machine molded-in terminals for exact, immovable and permanent position in stator. Molded stator rugged for long life. Soldering heat can't loosen terminals; natural design barrier prevents solder flow into circuit elements. Long life contacts evenly silvered. Double wiping, self-cleaning rotor contacts. Stator contacts integral with terminals. Space saving design. **Detents:** Index plate 30° between positions with one fixed and one adjustable stop. **Finish:** 50-hour salt spray. **Size:** 1 1/16" dia. x 35/64" th. body through one section; add 1/4" space and 3/16" section thickness for each additional section. Shaft, 1 7/8" l. (from bushing) x 1/4" dia. Bushing 3/8"-32 thread, 3/8" long. Mtg. hardware supplied. Glass reinforced alkyd stator and glass reinforced nylon rotor. Contacts laminated silver movable type. Terminals and stator are silver-plated brass. Operating temperature, 85° C. **Voltage and Current Ratings:** 1 amp at 28 VDC (shorting type only), 3/4 amp at 125 VAC. **Contact Life:** 25,000 cycles thru 12 positions and return. **Detent and Detent Rotational Life:** Standard, balanced, double-bump formed spring, in a hill and valley type detent providing a minimum of 25,000 cycles thru 12 positions and return.



COMPLETE SWITCHES

Industrial No. Short	Industrial No. Non-Short	No. Secs.	Total Poles	No. of Positions Short	No. of Positions Non-Short
T201	T205	1	1	2–11	2–12
T202	T206	1	2	2–5	2–6
T203	T207	1	3	2–3	2–4
T204	T208	1	4	2	2–3
.....	T209	1	6	.....	2
T211	T215	2	2	2–11	2–12
T212	T216	2	4	2–5	2–6
T213	T217	2	6	2–3	2–4
T214	T218	2	8	2	2–3
.....	T219	2	12	.....	2
T221	T225	3	3	2–11	2–12
T222	T226	3	6	2–5	2–6
T223	T227	3	9	2–3	2–4
T224	T228	3	12	2	2–3
.....	T229	3	18	.....	2
T231	T235	4	4	2–11	2–12
T232	T236	4	8	2–5	2–6
T233	T237	4	12	2–3	2–4
T234	T238	4	16	2	2–3
.....	T239	4	24	.....	2

WAFER SECTIONS

T1	T5	1	1	2–11	2–12
T2	T6	1	2	2–5	2–6
T3	T7	1	3	2–3	2–4
T4	T8	1	4	2	2–3
.....	T9	1	6	.....	2

SHAFT AND 30° DETENT ASSEMBLIES

Standard Units: As described in general data. **Starwheel Units:** Has starwheel detent for extremely long life and minimum turning torque variation. Double lever arm controls torque in both directions of rotation with practically no change in torque during 100,000 cycles of operation through 12 positions and return.

Standard Unit No.	Total No. Positions	Suggested No. Secs.	Rear Shaft Lgth.	Starwheel Unit No.
T79	2–12	1	7/32"	.....
T80	2–12	1–3	1 9/32"	T180
T81	2–12	4–6	2 15/32"	T181
T82	2–12	7–10	5 9/32"	T182

ATTACHABLE POWER SWITCHES

Reliable AC power switches for use with selector switches. Mount on rear frame of the selector switch, or between wafers using a specially designed bracket. Rated 3 amps, 125 VAC. **No. GC-21:** SPST. **No. VF-21:** SPDT. **No. WF-21:** DPST.

SEALED SWITCH KITS

CTS No. SSK-1—Enclosed detent construction seals both the wafer sections and the detent mechanism of the switch against dust, dirt and moisture.

CTS No. DSWK-1—Open detent construction seals, protects wafer sections of selector switch against dust and dirt.

SHIELDS AND MOUNTING BRACKETS

Shields provide shielding of switch sections from each other. Various size mounting brackets handle all mounting requirements.

Stock Shields: CTS Number	Stock Shields: Description	Hardware: CTS Number	Hardware: Description
SSS-1	Standard shields	SSS-4	Pkg. 50, 1/4" spacers
SSS-3	Combination shield and mounting bracket	SSS-5	Pkg. 50, 3/8" spacers
		SSS-6	Pkg. 50, 1/2" spacers
		SSS-7	Pkg. 50, 3/4" spacers
		SSS-8	Pkg. 50, 1" spacers

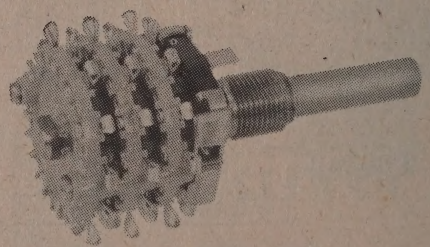
OEM QUANTITY PRICES

CTS Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
T1 thru T9	$1.08	$1.00	$0.77	$0.72	$0.65	$0.54	$0.48
T79	1.25	1.15	.90	.83	.75	.73	.69
T80	1.42	1.35	1.10	1.00	.93	.85	.82
T81	2.30	2.15	1.85	1.65	1.45	1.35	1.29
T82	3.60	3.45	3.00	2.65	2.35	2.10	.....
T180	4.50	4.45	3.25	3.00	2.70	2.35	2.15
T181	5.20	4.85	4.05	3.65	3.30	3.00	2.70
T182	6.30	5.95	5.00	4.50	4.05	3.80	3.50
T201 thru T209	2.10	2.00	1.60	1.40	1.30	1.20	1.10
T211 thru T219	3.25	3.20	2.50	2.25	2.10	2.00	1.85
T221 thru T229	4.70	4.50	3.40	3.20	2.80	2.65	2.50
T231 thru T239	5.80	5.70	4.60	4.10	3.75	3.35	3.20
GC-21	1.50	1.40	1.10	.90	.75	.65	.55
VF-21	1.85	1.50	1.20	1.10	1.00	.75	.65
WF-21	1.85	1.50	1.20	1.10	1.00	.75	.65
SSK-1	3.20	3.00	2.50	2.10	1.70	1.50	1.25
DSWK-1	1.75	1.50	1.20	1.10	.90	.80	.70
SSS-1*	.40	.35	.30	.25	.20	.18	.17
SSS-3*	1.25	1.18	1.05	.90	.85	.78	.70
SSS-4†	1.50	1.30	1.10	.95	.85	.65	.55
SSS-5†	1.55	1.40	1.15	1.00	.90	.70	.60
SSS-6†	1.65	1.50	1.25	1.10	.95	.75	.65
SSS-7†	1.75	1.55	1.30	1.10	.95	.75	.65
SSS-8†	1.80	1.70	1.60	1.40	1.15	.95	.85

*Package of 5. †Package of 50.

SERIES 223 INDUSTRIAL/COMMERCIAL 13/16" DIA. ROTARY SELECTOR SWITCH

Voltage and Current Ratings: 1/2 amp at 28 VDC, 1/4 amp at 125 VAC. **Indexing:** 30° with adjustable stop. **Torque Range:** 5"–25" ounce. **Shaft:** 1 1/4" length from mounting, round by 1/4" dia. **Bushing:** 3/8"-32 UNEF-2A thread 3/8" long. **Size:** 6 1/64" dia. x 39/64" th. body through one section; add 15/64" wafer thickness for each additional section. **Contact Life:** 50,000 cycles thru 12 positions and return. **Detent and Detent Rotational Life:** Double ball detent for crisp switching action thru 25,000 cycles (12 positions and return at 10 cycles per minute). **Insulation:** Molded thermoset plastic stator, molded thermoplastic rotor. Detent is cadmium iridite plated steel. Contacts and terminal lug material is silver plated brass. Integral molded rib design eliminates radial shifting of the contacts and insures high insulation resistance between adjacent contacts. **Operating Temperature:** +85° C. **Stop Strength:** 15 inch pounds.



CTS Number: Shorting	CTS Number: Non-Shorting	Total Poles	Number of Sections	No. of Positions
T-750	T-751	1	1	2–11
T-752	T-753	2	1	2–6
T-754	T-755	3	1	2–3
T-756	T-757	4	1	2
T-758	T-759	1	1	2–12
T-760	T-761	2	2	2–11
T-762	T-763	4	2	2–6
T-764	T-765	2	2	2–12
T-770	T-771	3	3	2–11
T-772	T-773	3	3	2–12

COMPLETE SWITCHES

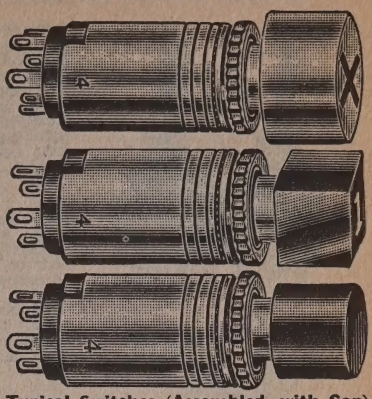
CTS Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
T-750 thru T-757	$4.15	$3.75	$3.55	$3.25	$2.75	$1.75	$1.55
T-758 thru T-759	4.75	3.80	3.60	3.30	3.00	2.25	1.95
T-760 thru T-763	6.00	4.65	4.35	4.05	3.65	2.75	2.35
T-764 thru T-765	7.50	5.60	5.25	4.95	4.45	3.60	3.10
T-770 thru T-771	7.80	6.25	5.80	5.30	4.60	3.70	3.20
T-772 thru T-773	9.40	8.00	7.50	7.00	6.10	4.85	4.30

DIALIGHT Lighted Pushbutton Switches & Indicator Lights

DIALCO®

SINGLE-HOLE MOUNTING PUSHBUTTON SWITCHES AND MATCHING INDICATOR LIGHTS

Convenient, modular design allows assembly of an illuminated switch to meet your particular requirement. **Three Switch Assemblies:** Choice of NO, NC or 2-Circuit arrangements in two styles: One to accommodate screw-in type caps; another for friction-fit caps. Switch contacts rated 3 amps resistive at 125 VAC or 30 VDC. UL Listed. **Caps:** Choice of screw-in and friction fit (rotatable or keyed) styles in ½", ⅝" or ¾" sizes, round or square shape, and a choice of colors. **Matching Indicator Lights:** Available in two sizes to match your indicating switches. Simply select the indicator base assembly size desired, and add the cap of your choice (the same caps used with switches).



Typical Switches (Assembled, with Cap)

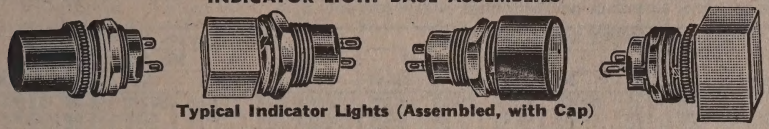
SWITCH BASE ASSEMBLIES

Single-hole mounting; fit panels up to 3/16" thick. Size, .650" dia. x 1 15/32" lg.

Switch Circuit	For Friction-Fit Caps Either ½" or ¾" Cap Size	For Screw-In Caps Only ½" mtg.	For Screw-In Caps Only 1 15/32" mtg.	Net Each, Lots of 1-9	10-24	25-99*
SPST-NO	513-0101-604	513-0105-604	513-0104-604	$4.71	$4.04	$3.80
SPST-NC	513-0201-604	513-0205-604	513-0204-604	4.71	4.04	3.80
2-Circuit*	513-0301-604	513-0305-604	513-0304-604	5.21	4.46	4.16

*One circuit NO, one circuit NC.

INDICATOR LIGHT BASE ASSEMBLIES



Typical Indicator Lights (Assembled, with Cap)

Accommodate T-1¾ incandescent lamp from 1.35 to 28 V. Accept friction-fit caps, keyed or rotatable, ½" or ¾" size. Length, 27/32" max.

Dialco Number	Description	Net Each, Lots of 1-9	10-24	25-99*
183-9730-14-602	For 1 15/32" hole, front mounting (.549" dia.)	$1.52	$1.29	$1.21
183-9830-14-604	For ½" hole, front or rear mount (.560" dia.)	1.52	1.29	1.21

COLOR OF LENS FACE

Indicated by last figure in Dialco number. For simplicity, all numbers listed use suffix "1" to indicate the lens face is **Red.** When a color other than red is required, change the last figure per following list:

Last Figure in No.	Lens Face Color
1	Red (as listed)
2	Green
3	Amber (yellow)
4	Blue
5	White (translucent)
6	Light yellow
8	Ivory

Examples: 183-1472 (Green)
300-1874 (Blue)

CAPS FOR SWITCH BASE ASSEMBLIES OR INDICATOR LIGHT

Friction-fit caps are available in round or square shapes; choice of keyed (non-rotatable) or rotatable style; ½" or ¾" size. Screw-in caps fit only the switch base assemblies designated for them; come only in ½" round configuration. **Colors:** All items listed are red as indicated by **1**, the last digit in the ordering number (e.g., 183-1471). **For other colors, see color table;** same prices. Legends may be hot-stamped or engraved; pricing on request.

½" FRICTION-FIT AND SCREW-IN CAPS

Description	Shape	Friction Fit Caps: Rotatable Number	Friction Fit Caps: Keyed Number (Non-Rotatable)	Screw-In Cap Number	Net Each, Lots of 1-9	10-24	25-99*
Solid Color, Translucent Face and Sides	Round	183-1471	186-1471	192-1471	$0.86	$0.76	$0.70
	Square	185-1871	184-1871	.....	.86	.76	.70
Translucent Colored Face, Black Opaque Sides	Round	183-5071	186-5071	192-5071	.86	.76	.70
	Square	185-5071	184-5071	.....	.86	.76	.70
Translucent Colored Face, Gray Opaque Sides	Round	183-5171	186-5171	192-5171	.86	.76	.70
	Square	185-5171	184-5171	.....	.86	.76	.70

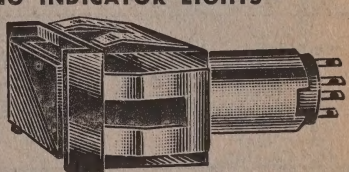
¾" FRICTION-FIT CAPS

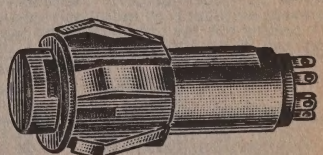
Solid Color, Translucent Face and Sides	Round	191-1471	188-1471	.....	$1.19	$1.08	$1.00
	Square	190-1871	187-1871	.....	1.19	1.08	1.00
Translucent Colored Face, Black Opaque Sides	Round	191-5071	188-5071	.....	1.19	1.08	1.00
	Square	190-5071	187-5071	.....	1.19	1.08	1.00
Translucent Colored Face, Gray Opaque Sides	Round	191-5171	188-5171	.....	1.19	1.08	1.00
	Square	190-5171	187-5171	.....	1.19	1.08	1.00

SNAP-IN MOUNTING PUSHBUTTON SWITCHES AND MATCHING INDICATOR LIGHTS

SWITCH BASE ASSEMBLIES

Snap-in mounting for panels up to 3/16" thick. Includes bezel, clip and spanner ring. Momentary non-snap action switches have contacts rated 3 amps resistive at 125 VAC or 30 VDC. Life at rated load, 100,000 operations. UL listed. Suffix **001** in Dialco number indicates black bezel; to specify gray bezel, change 001 to **002** (e.g., 513-0106-**002**). Other bezel colors available on special order. Rectangular bezel units interchangeable with most 4-lamp displays.





Typical Snap-In Switches (Assembled, with Cap)

Switch Circuit	For ⅝" Sq. Cap	For ⅝" Rnd. Cap	For ¾" x 1" Cap Less Barrier	For ¾" x 1" Cap With Barrier	Net Each, Lots of 1-9	10-24	25-99*
SPST-NO	513-0106-001	513-0107-001	513-0109-001	513-0110-001	$5.68	$4.85	$4.56
SPST-NC	513-0206-001	513-0207-001	513-0209-001	513-0210-001	5.68	4.85	4.56
2-Circuit*	513-0306-001	513-0307-001	513-0309-001	513-0310-001	6.18	5.26	4.95

*One circuit NO, one circuit NC.

INDICATOR LIGHT BASE ASSEMBLIES

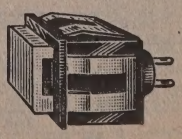
Accommodate T-1¾ incandescent lamp in a range of voltages to 28 V.

Bezel Color	For 300 Series ⅝" Sq. Cap	For 301 Series ⅝" Rnd. Cap	For 303 Series ¾" x 1" Cap Less Barrier	For 303 Series ¾" x 1" Cap With Barrier	Net Each, Lots of 1-9	10-24	25-99*
Black	533-0601	533-0701	533-0901	533-1001	$2.51	$2.16	$1.97
Gray	533-0602	533-0702	533-0902	533-1002	2.51	2.16	1.97

CAPS FOR INDICATOR LIGHT OR SWITCH BASE ASSEMBLIES

Items listed are red as indicated by **1**, the last digit in the ordering number (e.g., 300-1871). Also available in green, amber (yellow), blue, white, and light yellow. **To order, see color table;** same prices.

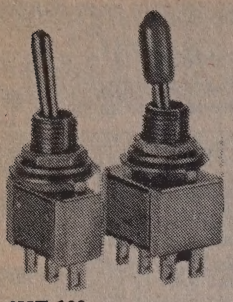
Dialco Number	Size	Net Each, Lots of 1-9	10-24	25-99*	Dialco Number	Size	Net Each, Lots of 1-9	10-24	25-99*
300-1871	⅝" sq.	$1.19	$1.08	$1.00	303-1871	¾" x 1" rect.	$1.33	$1.19	$1.10
301-1471	⅝" rnd.	1.19	1.08	1.00					



Typical Indicator Light (Assembled, with Cap)

Dialco Model 506-1500 Spanner Wrench—For snap-in mounting switches. Permits fastening bezel and clip to switch or matching indicator light base. Net Each.. **$6.54**

★PRICES ON QUANTITIES OF 100-249, 250-499, 500-999 AND HIGHER ON REQUEST



JMT-100

JMT-200 WITH COLOR CAP

SERIES JMT SUBMINIATURE TOGGLE SWITCHES

Combine drastic reduction in size and weight with trouble-free construction. Ideal for manually-controlled, low current, solid state devices and miniaturized circuitry. Used in computers, aircraft, electronic instruments, geophysical and portable equipment of all kinds. Mount in single hole with ¼″-40NS-2A bushing .352″ lg. with keyway. Solder terminals firmly staked to withstand repeated soldering; electrical continuity of terminal is to opposite throw of lever. Distinctive green phenolic body. Bat handle .400″ lg. **Series JMT-100:** SPDT action. Body .500″ x .260″ x .505″ deep behind panel (including terminals). Wt., 0.19 oz. **Series JMT-200:** DPDT action. Body .500″ x .450″ x .505″ deep behind panel (incl. terminals). Wt., 0.23 oz. **Series JMT-300:** 3PDT action. Body .652″ x .500″ x .571″ deep behind panel (including terminals). Wt., 0.28 oz. **Series JMT-400:** 4PDT action. Body .843″ x .500″ x .571″ deep behind panel (including terminals). Wt., 0.32 oz.

SPECIFICATIONS

Electrical Characteristics: Rated 5 amps nom. resistive, 125 VAC and 24 VDC. Initial contact resistance, 5 milliohms max., at 3 VDC, 100 mA. Insulation resistance, 10,000 megohms min. Dielectric strength, 1 kV rms at sea level. Life, 100,000 make-and-break, min. for suffix -23 models; all others 60,000, under load. **Physical Characteristics:** Coin silver switching contacts and rockers. Bright, chrome-plated brass bat handle. Phenolic case and cradle. Bushing, locking ring (1 supplied) and hex nuts (2 supplied) are nickel-plated brass. Clamp and internal-tooth lockwasher chromate treated or stainless steel. **Circuitry:** As indicated in table, below. However, they may also be used as ST (single throw) by wiring only to applicable terminals. Example: JMT-123 connects as an On-Off switch by using center terminals and terminals on one end only.

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
SPDT Series JMT-100					
On-Off-On	JMT-121	$2.45	$1.95	$1.43	$1.30
On-None-On	JMT-123	2.15	1.65	1.21	1.10
On-None-On†	JMT-126	2.45	1.95	1.43	1.30
On†-Off-On†	JMT-127	2.60	2.10	1.54	1.40
On-Off-On†	JMT-131	2.60	2.10	1.54	1.40
None-On-On†	JMT-134	2.45	1.95	1.43	1.30
On-On-On	.....	.....	.....	.....	.....
On-On-On†	.....	.....	.....	.....	.....
On†-On-On†	.....	.....	.....	.....	.....
3PDT Series JMT-300					
On-Off-On	JMT-321	$4.75	$4.25	$3.12	$2.84
On-None-On	JMT-323	4.35	3.85	2.82	2.57
On†-Off-On†	JMT-327	4.90	4.40	3.23	2.93
On-Off-On†	JMT-331	4.90	4.40	3.23	2.93
None-On-On†	JMT-334	5.00	4.50	3.30	3.00
On-On-On	.....	.....	.....	.....	.....
On-On-On†	.....	.....	.....	.....	.....
On†-On-On†	.....	.....	.....	.....	.....

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
DPDT Series JMT-200					
JMT-221	$3.05	$2.55	$1.87	$1.70
JMT-223	2.65	2.15	1.58	1.43
JMT-226	3.05	2.55	1.87	1.70
JMT-227	3.20	2.70	1.98	1.80
JMT-231	3.20	2.70	1.98	1.80
JMT-232	3.35	2.85	2.09	1.90
JMT-233	3.65	3.15	2.31	2.10
JMT-234	3.05	2.55	1.87	1.70
JMT-235	3.60	3.10	2.26	2.05
4PDT Series JMT-400				
JMT-421	$5.95	$5.45	$4.00	$3.64
JMT-423	5.35	4.85	3.56	3.24
JMT-427	6.10	5.60	4.10	3.74
JMT-431	6.10	5.60	4.10	3.74
JMT-434	6.40	5.90	4.32	3.93
JMT-432	6.50	6.00	4.40	4.00
JMT-433	6.75	6.25	4.57	4.15
JMT-435	6.90	6.40	4.70	4.28

*See color cap ordering information table. †Momentary position.

*COLOR CAPS

To order, add suffix (as indicated below) to switch number desired (e.g., JMT-123-**W-CAP-10A**). Add **2¢** each to prices shown; **$10.00** per 1000 in bulk.

Color	Suffix W-CAP-	Color	Suffix W-CAP-
White	10A	Orange	10F
Blue	10B	Yellow	10G
Red	10C	Green	10H
Black	10D	Violet	10I
Brown	10E	Gray	10J

VARIATIONS OF SERIES JMT SUBMINIATURE TOGGLE SWITCHES*

Series LFH—with Flat Handle: Identical to JMT series above, except for flat handle (paddle) lever, permanently pinned for proper alignment in operating plane. Handle is satin chrome finish with matching dress nut construction and ratings same as JMT series. Available in all circuit configurations of JMT series, including 3PDT and 4PDT, and with MPC type printed circuit terminals.

LFH

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
SPDT Series LFH-100 Flat Handle					
On-Off-On	LFH-121	$3.35	$2.85	$2.29	$2.00
On-None-On	LFH-123	3.05	2.55	2.06	1.79
On-None-On†	LFH-126	3.35	2.85	2.29	2.00
On†-Off-On†	LFH-127	3.50	3.00	2.40	2.10
On-Off-On†	LFH-131	3.50	3.00	2.40	2.10
None-On-On†	LFH-134	3.35	2.85	2.29	2.00
On-On-On	.....	.....	.....	.....	.....
On-On-On†	.....	.....	.....	.....	.....
On†-On-On†	.....	.....	.....	.....	.....
3PDT SERIES LFH-300					
On-Off-On	LFH-321	$5.80	$5.30	$4.06	$3.61
On-None-On	LFH-323	5.35	4.85	3.77	3.33
On†-Off-On†	LFH-327	5.95	5.45	4.17	3.71
On-Off-On†	LFH-331	5.95	5.45	4.17	3.71
None-On-On†	LFH-334	6.05	5.55	4.25	3.78
On-On-On	.....	.....	.....	.....	.....
On-On-On†	.....	.....	.....	.....	.....
On†-On-On†	.....	.....	.....	.....	.....

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
DPDT Series LFH-200 Flat Handle					
LFH-221	$4.00	$3.50	$2.75	$2.42
LFH-223	3.55	3.05	2.45	2.13
LFH-226	4.00	3.50	2.75	2.42
LFH-227	4.15	3.65	2.87	2.52
LFH-231	4.15	3.65	2.87	2.52
LFH-234	4.00	3.50	2.75	2.42
LFH-232	4.30	3.80	2.98	2.63
LFH-233	4.55	4.05	3.21	2.84
LFH-235	4.55	4.05	3.21	2.84
4PDT SERIES LFH-400				
LFH-421	$7.05	$6.55	$4.99	$4.45
LFH-423	5.40	4.90	4.53	4.03
LFH-427	7.20	6.70	5.09	4.56
LFH-431	7.20	6.70	5.09	4.56
LFH-434	7.50	7.00	5.32	4.76
LFH-432	7.60	7.10	5.41	4.83
LFH-433	7.90	7.40	5.59	4.99
LFH-435	8.05	7.55	5.72	5.12

LL

Series LL—Locking-Lever Switches: Identical to JMT series above, except for locking lever. To prevent accidental or unintentional switching, the spring-loaded locking mechanism must be released by pulling out the top of the lever against spring tension. Available with anodized natural aluminum cap and in anodized red, blue, gold, black and green.

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
SPDT Series LL-100					
On-Off-On	LL-121	$4.40	$3.90	$3.47	$2.72
On-None-On	LL-123	3.80	3.30	2.94	2.23
On-On-On	.....	.....	.....	.....	.....
3PDT Series LL-300					
On-Off-On	LL-321	$6.75	$6.25	$5.57	$4.34
On-None-On	LL-323	6.05	5.55	4.99	3.85
On-On-On	.....	.....	.....	.....	.....

Positions	J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
DPDT Series LL-200					
LL-221	$5.10	$4.60	$4.10	$3.19
LL-223	4.40	3.90	3.52	2.72
LL-232	5.10	4.60	4.10	3.19
4PDT Series LL-400				
LL-421	$8.10	$7.60	$6.83	$5.29
LL-423	7.50	7.00	6.25	4.85
LL-432	8.10	7.60	6.83	5.29

PB

Series PB—Pushbutton Switches: SPDT pushbutton-actuated subminiature switches with 100,000 cycles average life under load—5 amps at 125 VAC. Coin silver contacts and rocker; silver plated center terminal. Bushing and plunger are nickel-plated brass. High-strength plastic body with ⅜″ diam. threaded molded knob. Standard black, available red or white. Also available anodized aluminum in natural, red, blue, gold, black or green. Mount in ¼″ D-hole. **Series PBI** same as PB, except smaller shaft and .200″ diam. push-on knob. Standard black, available red or white.

	100 Maintained Action				100 Momentary Action				
SPDT	PB-123	$2.55	$2.05	$1.54	$1.37	PB-126	$2.55	$2.05	$1.54	$1.37
SPDT	PBI-123	2.55	2.05	1.54	1.37	PBI-126	2.55	2.05	1.54	1.37

†Momentary position (spring return).

LISTING CONTINUED ON FOLLOWING PAGE

VARIATIONS OF SERIES JMT TOGGLE SWITCHES (CONT'D)

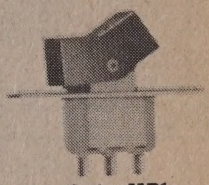
Series MPC—with PC Terminals: Identical to series JMT above, except has PC terminals for direct insertion into printed-circuit boards. Standard bat handle, bright chrome-plated brass.

Series MPC

Positions	SPDT Series MPC-100 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series MPC-200 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	MPC-121	$2.70	$2.20	$1.61	$1.45	MPC-221	$3.28	$2.78	$2.07	$1.87
On-None-On	MPC-123	2.35	1.85	1.38	1.24	MPC-223	2.86	2.36	1.76	1.59
On-None-On†	MPC-126	2.70	2.20	1.61	1.45	MPC-226	3.28	2.78	2.07	1.87
On†-Off-On†	MPC-127	2.85	2.35	1.72	1.55	MPC-227	3.44	2.94	2.18	1.97
On-Off-On†	MPC-131	2.85	2.35	1.72	1.55	MPC-231	3.44	2.94	2.18	1.97
None-On-On†	MPC-134	2.70	2.20	1.61	1.45	MPC-234	3.28	2.78	2.07	1.87
On-On-On						MPC-232	3.60	3.10	2.30	2.08
On-On-On†						MPC-233	3.91	3.41	2.53	2.29
On†-On-On†						MPC-235	3.86	3.36	2.48	2.24
	3PDT Series MPC-300					4PDT Series MPC-400				
On-Off-On	MPC-321	$5.12	$4.62	$3.43	$3.11	MPC-421	$5.43	$4.93	$4.41	$3.98
On-None-On	MPC-323	4.70	4.20	3.12	2.82	MPC-423	5.80	5.30	3.95	3.56
On†-Off-On†	MPC-327	5.28	4.78	3.55	3.20	MPC-427	6.59	6.09	4.52	4.08
On-Off-On†	MPC-331	5.28	4.78	3.55	3.20	MPC-431	6.59	6.09	4.52	4.08
None-On-On†	MPC-334	5.38	4.88	3.62	3.28	MPC-434	6.91	6.41	4.75	4.28
On-On-On						MPC-432	7.01	6.51	4.83	4.36
On-On-On†						MPC-433	7.27	6.77	5.01	4.52
On†-On-On†						MPC-435	7.43	6.93	5.15	4.64

Series MR1—Rocker Switches: Same nominal rating as JMT Series, and dimensionally same below mounting bracket. Built-in extra strength in support column prevents wobbling and provides always-perfect alignment. Green body molded of glass-filled diallyl phthalate. Mounted by standoffs. Rockers are black molded nylon; red and white rockers also available. These switches also available with printed circuit, fast-on, and Wire-Wrap™ terminals. Available also in 3PDT and 4PDT configurations.

Series MP1—Paddle Lever Switches: Identical to subminiature Series MR1 rocker switches, but paddle lever type.

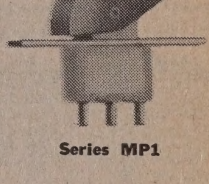


Series MR1

	SPDT Series MR1 and Series MP1‡					DPDT Series MR1 and Series MP1‡				
On-Off-On	MR1-121	$2.90	$2.40	$1.87	$1.73	MR1-221	$3.55	$3.05	$2.33	$2.15
On-None-On	MR1-123	2.60	2.10	1.64	1.52	MR1-223	3.15	2.65	2.03	1.87
On-None-On†	MR1-126	2.90	2.40	1.87	1.73	MR1-226	3.55	3.05	2.33	2.15
On†-Off-On†	MR1-127	3.10	2.60	1.98	1.84	MR1-227	3.70	3.20	2.45	2.26
On-Off-On†	MR1-131	3.10	2.60	1.98	1.84	MR1-231	3.70	3.20	2.45	2.26
On-On-On						MR1-232	3.90	3.40	2.56	2.36
On-On-On†						MR1-233	4.20	3.70	2.79	2.57
On†-On-On†						MR1-235	4.15	3.65	2.74	2.52
	3PDT Series MR1 and Series MP1					4PDT Series MR1 and Series MP1				
On-Off-On	MR1-321	$5.30	$4.80	$3.64	$3.35	MR1-421	$6.60	$6.10	$4.57	$4.19
On-None-On	MR1-323	4.90	4.40	3.33	3.07	MR1-423	5.95	5.45	4.11	3.77
On†-Off-On†	MR1-327	5.50	5.00	3.76	3.44	MR1-427	6.75	6.25	4.67	4.29
On-Off-On†	MR1-331	5.50	5.00	3.76	3.44	MR1-431	6.75	6.25	4.67	4.29
On-On-On						MR1-432	7.20	6.70	4.99	4.57
On-On-On†						MR1-433	7.45	6.95	5.17	4.73
On†-On-On†						MR1-435	7.60	7.10	5.30	4.86

Series MR2—Rocker Switches: Identical to series MR1, except they are panel mounted with a snap-in bezel. The 1- and 2-pole types can be mounted in the bezel and inserted from the front of the panel; the 3- and4-pole types are inserted in the bezel from behind the panel.

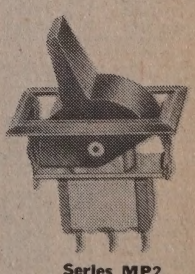
Series MP2—Paddle Lever Switches: Identical to series MR2, except paddle lever type.



Series MP1

Positions	SPDT Series MR2 and Series MP2‡ J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series MR2 and Series MP2‡ J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	MR2-121	$2.90	$2.40	$1.87	$1.73	MR2-221	$3.55	$3.05	$2.33	$2.15
On-None-On	MR2-123	2.60	2.10	1.64	1.52	MR2-223	3.15	2.65	2.03	1.87
On-None-On†	MR2-126	2.90	2.40	1.87	1.73	MR2-226	3.55	3.05	2.33	2.15
On†-Off-On†	MR2-127	3.10	2.60	1.98	1.84	MR2-227	3.70	3.20	2.45	2.26
On-Off-On†	MR2-131	3.10	2.60	1.98	1.84	MR2-231	3.70	3.20	2.45	2.26
On-On-On						MR2-232	3.90	3.40	2.56	2.36
On-On-On†						MR2-233	4.20	3.70	2.79	2.57
On†-On-On†						MR2-235	4.15	3.65	2.74	2.52
	3PDT Series MR2 and Series MP2					4PDT Series MR2 and Series MP2				
On-Off-On	MR2-321	$5.30	$4.80	$3.64	$3.35	MR2-421	$6.60	$6.10	$4.57	$4.19
On-None-On	MR2-323	4.90	4.40	3.33	3.07	MR2-423	5.95	5.45	4.11	3.77
On†-Off-On†	MR2-327	5.50	5.00	3.76	3.44	MR2-427	6.75	6.25	4.67	4.29
On-Off-On†	MR2-331	5.50	5.00	3.76	3.44	MR2-431	6.75	6.25	4.67	4.29
Op-On-On						MR2-432	7.20	6.70	4.99	4.57
On-On-On†						MR2-433	7.45	6.95	5.17	4.73
On†-On-On†						MR2-435	7.60	7.10	5.30	4.86

Series MR3—Rocker Switches: Identical to series MR1 and MR2, except they have a larger rocker and mounting plate, requiring larger panel cutout. Rockers of different colors may be interchanged from front of panel without disturbing mounting of switch.



Series MP2

Positions	SPDT Series MR3-100 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series MR3-200 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	MR3-121	$3.25	$2.75	$2.24	$2.05	MR3-221	$3.85	$3.35	$2.65	$2.47
On-None-On	MR3-123	2.90	2.40	1.95	1.73	MR3-223	3.45	2.95	2.34	2.18
On-None-On†	MR3-126	3.25	2.75	2.24	2.05	MR3-226	3.85	3.35	2.65	2.47
On†-Off-On†	MR3-127	3.40	2.90	2.30	2.15	MR3-227	4.05	3.55	2.76	2.57
On-Off-On†	MR3-131	3.40	2.90	2.30	2.15	MR3-231	4.05	3.55	2.76	2.57
On-On-On						MR3-232	4.30	3.80	2.88	2.68
On-On-On†						MR3-233	4.50	4.00	3.11	2.89
On†-On-On†						MR3-235	4.45	3.95	3.06	2.84
	3PDT Series MR3-300					4PDT Series MR3-400				
On-Off-On	MR3-321	$4.60	$4.10	$3.96	$3.66	MR3-421	$6.90	$6.40	$4.88	$4.50
On-None-On	MR3-323	5.25	4.75	3.64	3.38	MR3-423	6.30	5.80	4.42	4.08
On†-Off-On†	MR3-327	5.80	5.30	4.07	3.76	MR3-427	7.05	6.55	4.99	4.61
On-Off-On†	MR3-331	5.80	5.30	4.07	3.76	MR3-431	7.05	6.55	4.99	4.61
On-On-On						MR3-432	7.50	7.00	5.30	4.88
On-On-On†						MR3-433	7.75	7.25	5.48	5.04
On†-On-On†						MR3-435	7.90	7.40	5.67	5.18

†Momentary position (spring return). ‡Listed are J-B-T Nos. for rocker switch models. To order paddle lever models, change second character in J-B-T No. to **P**. Example: MP1-121; same price.

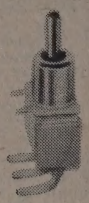
LISTING CONTINUED ON FOLLOWING PAGE

VARIATIONS OF SERIES JMT TOGGLE SWITCHES (CONT'D)

Series TO1—Bat Handle: Identical to JMT series above, except contacts rated at 0.5 watts at 28 VDC/AC max. Terminals are for wire wrapping.

Positions	SPDT Series TO1-100 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series TO1-200 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	TO1-121	$2.70	$2.20	$1.61	$1.47	TO1-221	$3.40	$2.90	$2.17	$2.00
On-None-On	TO1-123	2.40	1.90	1.38	1.26	TO1-223	3.00	2.50	1.87	1.71
On-None-On†	TO1-126	2.70	2.20	1.61	1.47	TO1-226	3.40	2.90	2.17	2.00
On†-Off-On†	TO1-127	2.85	2.35	1.72	1.58	TO1-227	3.60	3.10	2.29	2.10
On-Off-On†	TO1-131	2.85	2.35	1.72	1.58	TO1-231	3.60	3.10	2.29	2.10
None-On-On†	TO1-134	2.70	2.20	1.61	1.47	TO1-234	3.40	2.90	2.17	2.00
On-On-On						TO1-232	3.76	3.26	2.40	2.21
On-On-On†						TO1-233	4.05	3.55	2.64	2.42
On†-On-On†						TO1-235	4.00	3.50	2.58	2.36
	3PDT Series TO1-300					4PDT Series TO1-400				
On-Off-On	TO1-321	$5.23	$4.73	$3.41	$3.15	TO1-421	$6.54	$6.04	$4.53	$4.11
On-None-On	TO1-323	4.81	4.31	3.15	2.90	TO1-423	5.86	5.36	3.82	3.53
On†-Off-On†	TO1-327	5.38	4.88	3.52	3.26	TO1-427	6.64	6.14	4.34	4.00
On-Off-On†	TO1-331	5.38	4.88	3.52	3.26	TO1-431	6.64	6.14	4.34	4.00
None-On-On†	TO1-334	5.49	4.99	3.57	3.31	TO1-434	6.91	6.41	4.50	4.16
On-On-On						TO1-432	7.01	6.51	4.58	4.22
On-On-On†						TO1-433	7.27	6.77	4.75	4.38
On†-On-On†						TO1-435	7.43	6.93	4.85	4.47

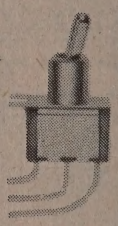
T01



T02

Series TO2—Bat Handle: For right angle mounting in printed-circuit boards, has unthreaded bushing, rated at 0.5 watts at 28 VDC/AC max.

Positions	SPDT Series TO2-100 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series TO2-200 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	TO2-121	$2.85	$2.35	$1.76	$1.63	TO2-221	$3.50	$3.00	$2.23	$2.05
On-None-On	TO2-123	2.55	2.05	1.53	1.42	TO2-223	3.05	2.55	1.92	1.76
On-None-On†	TO2-126	2.85	2.35	1.76	1.63	TO2-226	3.50	3.00	2.23	2.05
On†-Off-On†	TO2-127	3.00	2.50	1.88	1.73	TO2-227	3.70	3.15	2.34	2.15
On-Off-On†	TO2-131	3.00	2.50	1.88	1.73	TO2-231	3.70	3.15	2.34	2.15
None-On-On†	TO2-134	2.90	2.35	1.76	1.63	TO2-234	3.50	3.00	2.23	2.05
On-On-On						TO2-232	3.80	3.30	2.46	2.26
On-On-On†						TO2-233	4.10	3.60	2.69	2.47
On†-On-On†						TO2-235	4.05	3.55	2.64	2.42



T08

Series TO8—Bat Handle: Similar to series TO2, except designed for vertical mounting. Has an unthreaded bushing and is rated at 0.5 watts at 28 VDC/AC max.

Positions	SPDT Series TO8-100 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99	DPDT Series TO8-200 J-B-T No.	Net Each, Lots of 1	2-9	10-29	30-99
On-Off-On	TO8-121	$2.90	$2.35	$1.76	$1.63	TO8-221	$3.45	$2.95	$2.23	$2.05
On-None-On	TO8-123	2.50	2.00	1.53	1.42	TO8-223	3.05	2.55	1.92	1.76
On-None-On†	TO8-126	2.90	2.35	1.76	1.63	TO8-226	3.45	2.95	2.23	2.05
On†-Off-On†	TO8-127	3.00	2.50	1.88	1.73	TO8-227	3.60	3.10	2.34	2.15
On-Off-On†	TO8-131	3.00	2.50	1.88	1.73	TO8-231	3.60	3.10	2.34	2.15
None-On-On†	TO8-134	2.85	2.35	1.76	1.63	TO8-234	3.45	2.95	2.23	2.05
On-On-On						TO8-232	3.80	3.30	2.46	2.26
On-On-On†						TO8-233	4.10	3.60	2.69	2.47
On†-On-On†						TO8-235	4.05	3.55	2.64	2.42

Group I

GROUP I—SP and DP heavy duty toggle switches rated 20A @ 125 VAC, 10A @ 250 VAC.

Positions	Screw Terminals J-B-T No.	Net Each, Lots of 2-24 *	25-49	50-99	100-249	Solder Terminals J-B-T No.	Net Each, Lots of 2-24 *	25-49	50-99	100-249	Push-on (Spade) Terminals J-B-T No.	Net Each, Lots of 2-24 *	25-49	50-99	100-249
SPST—2 Terminals															
On-None-Off	4222S	$1.45	$1.31	$1.14	$0.95	4222L	$1.30	$1.14	$1.00	$0.83	4222P	$1.30	$1.14	$1.00	$0.83
On-Off-None	4224S	1.45	1.31	1.14	.95	4224L	1.30	1.14	1.00	.83	4224P	1.30	1.14	1.00	.83
On-Off†-None	4225S	1.80	1.58	1.37	1.14	4225L	1.50	1.28	1.12	.93	4225P	1.50	1.28	1.12	.93
None-Off-On†	4228S	1.80	1.58	1.37	1.14	4228L	1.50	1.28	1.12	.93	4228P	1.50	1.28	1.12	.93
On-None-Off†	4229S	1.80	1.58	1.37	1.14	4229L	1.50	1.31	1.13	.94	4229P	1.50	1.31	1.13	.94
Off-None-On†	4230S	1.80	1.58	1.37	1.14	4230L	1.40	1.23	1.06	.89	4230P	1.40	1.23	1.06	.89
SPDT—3 Terminals															
On-Off-On	4221S	$1.80	$1.58	$1.37	$1.14	4221L	$1.50	$1.28	$1.12	$0.93	4221P	$1.50	$1.28	$1.12	$0.93
On-None-On	4223S	1.80	1.58	1.37	1.14	4223L	1.50	1.28	1.12	.93	4223P	1.50	1.28	1.12	.93
On-None-On†	4226S	2.10	1.82	1.55	1.28	4226L	1.65	1.44	1.25	1.05	4226P	1.65	1.44	1.25	1.05
On†-Off-On†	4227S	2.10	1.82	1.55	1.28	4227L	1.65	1.44	1.25	1.05	4227P	1.65	1.44	1.25	1.05
On-Off-On†	4231S	2.10	1.82	1.55	1.28	4231L	1.65	1.44	1.25	1.05	4231P	1.65	1.44	1.25	1.05
DPST—4 Terminals															
On-None-Off	5222S	$2.65	$1.97	$1.64	$1.29	5222L	$2.00	$1.51	$1.26	$1.00	5222P	$2.00	$1.51	$1.26	$1.00
On-Off-None	5224S	2.25	1.67	1.42	1.12	5224L	2.00	1.51	1.26	1.00	5224P	2.00	1.51	1.26	1.00
On-Off†-None	5225S	3.20	2.36	1.98	1.57	5225L	2.70	2.05	1.72	1.36	5225P	2.70	2.05	1.72	1.36
None-Off-On†	5228S	2.65	1.97	1.64	1.29	5228L	2.25	1.70	1.41	1.11	5228P	2.25	1.70	1.41	1.11
On-None-Off†	5229S	2.75	2.05	1.70	1.35	5229L	2.35	1.77	1.48	1.16	5229P	2.35	1.77	1.48	1.16
Off-None-On†	5230S	2.75	2.05	1.70	1.35	5230L	2.35	1.77	1.48	1.16	5230P	2.35	1.77	1.48	1.16
DPDT—6 Terminals															
On-Off-On	5221S	$2.65	$1.97	$1.64	$1.29	5221L	$2.25	$1.70	$1.41	$1.22	5221P	$2.25	$1.70	$1.41	$1.22
On-None-On	5223S	2.65	1.97	1.64	1.29	5223L	2.25	1.70	1.41	1.22	5223P	2.25	1.70	1.41	1.22
On-None-On†	5226S	3.00	2.25	1.88	1.48	5226L	2.60	1.95	1.63	1.29	5226P	2.60	1.95	1.63	1.29
On†-Off-On†	5227S	3.10	2.36	1.98	1.57	5227L	2.70	2.05	1.72	1.36	5227P	2.70	2.05	1.72	1.36
On-Off-On†	5231S	3.00	2.25	1.88	1.48	5231L	2.60	1.95	1.63	1.29	5231P	2.60	1.95	1.63	1.29
On-On-On	5232S*	3.10	2.36	1.98	1.57	5232L*	2.75	1.96	1.63	1.36	5232P	2.75	1.96	1.63	1.36
On-On-On†	5233S*	3.35	2.50	2.11	1.79	5233L*	3.00	2.17	1.82	1.46	5233P	3.00	2.17	1.82	1.46
On†-On-On†	5235S*	3.40	2.54	2.15	1.81	5235L*	3.05	2.20	1.84	1.48	5235P	3.05	2.20	1.84	1.48

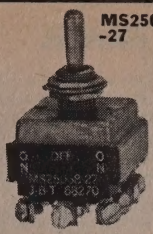
†Momentary. *On orders for single switches, add **50c**. *Not presently U.L. listed.

SPACE DOES NOT PERMIT LISTING OF ALL RELATED COMPONENTS.
WRITE FOR INFORMATION ON UNLISTED ITEMS.

J-B-T® MIL and JAN Toggle Switches

HEAVY DUTY TOGGLE SWITCHES SINGLE, DOUBLE AND 4-POLE

For use in DC circuits; or, AC circuits in frequencies up to 1600 Hz. Rugged, positive action. Built for extra long life to meet government, industrial and commercial requirements for high reliability. Metal top eliminates spring holes; encloses switch behind panel. **Features:** Aircraft lubricant for operation in temperatures −85° F to +185° F. Withstand high humidity. Meets 100-hour salt-spray test QQ-M-151a. No momentary make or break or mechanical damage under stringent shake tests and 75 G drop test. Tested to make and break at 50% overload for brief periods due to size, solid coin silver contacts and rocker arms. Contact resistance, under 0.005 ohm. Dielectric exceeds 1,000 V rms, 60 Hz at sea level. Screw terminals and solder lugs withstand 30 lb. pull test. **Series MS35058, MS35059:** With lever seal for sand, dust and 15 ft. water submersion tests. Screw terminals; solderable finish. Meets MIL-S-3950A specifications. **Series ST40, 42, 50, 52:** Heavy-duty type; solder and screw terminals. Meet JAN-S-23 specifications. **Series MS25068:** Extra heavy duty terminals, 4-pole construction for single hole mounting. Silicone rubber bushing seals. Surpass rigorous electrical endurance requirements. Molded, hi-arc resistant bodies. MIL-S-3950A for models with suffix -21 or higher.
Nominal Ratings: 20 amps at 125 VAC; 10 amps at 250 VAC. **Switch Movement:** Opposite to that of the lever. **Finish:** Dull finish nickel-plating to government specifications. **Hardware:** Two hex nuts, one internal-tooth lockwasher and locking ring (not supplied in bulk shipments).



MS25068 -27

ST40A

ST12D, ST22N

4PST EIGHT TERMINALS

MIL-S-3950A Circuit	Screw Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-Off-X	MS25068-24	$6.75	$6.25	$5.63	$4.75	$3.75
On-Off*-X	MS25068-25	8.75	8.25	7.43	6.27	4.95
X-Off-On*	MS25068-28	6.75	6.25	5.63	4.75	3.75

4PDT TWELVE TERMINALS

On-Off-On	MS25068-21	$7.50	$7.00	$6.30	$5.32	$4.20
On-X-On	MS25068-23	7.50	7.00	6.30	5.32	4.20
On-X-On*	MS25068-26	9.25	8.75	7.88	6.65	5.25
On*-Off-On*	MS25068-27	9.25	8.75	7.88	6.65	5.25
On-Off-On*	MS25068-31	9.25	8.75	7.88	6.65	5.25

SPST TWO TERMINALS

MIL-S-3950C Circuit	Screw Term. No.	1	2-24	25-49	50-99	100-249
On-X-Off	MS35058-22	$2.90	$2.40	$2.04	$1.61	$1.25
On-Off-X	MS35058-24	2.90	2.40	2.04	1.61	1.25
On-Off*-X	MS35058-25	3.80	3.30	2.81	2.21	1.72
X-Off-On*	MS35058-28	3.20	2.70	2.30	1.81	1.40
On-X-Off*	MS35058-29	3.10	2.60	2.21	1.74	1.35
Off-X-On*	MS35058-30	3.10	2.60	2.21	1.74	1.35

SPDT THREE TERMINALS

On-Off-On	MS35058-21	$3.25	$2.75	$2.34	$1.84	$1.43
On-X-On	MS35058-23	3.25	2.75	2.34	1.84	1.43
On-X-On*	MS35058-26	3.70	3.20	2.72	2.14	1.66
On*-Off-On*	MS35058-27	3.70	3.20	2.72	2.14	1.66
On-Off-On*	MS35058-31	3.60	3.10	2.64	2.08	1.61

DPST FOUR TERMINALS

On-X-Off	MS35059-22	$3.60	$3.10	$2.85	$2.17	$1.74
On-Off-X	MS35059-24	3.65	3.15	2.90	2.21	1.76
On-Off*-X	MS35059-25	4.70	4.20	3.86	2.94	2.35
X-Off-On*	MS35059-28	4.20	3.70	3.40	2.59	2.07
On-X-Off*	MS35059-29	4.50	4.00	3.68	2.80	2.24
Off-X-On*	MS35059-30	4.70	4.20	3.40	2.59	2.07

DPDT SIX TERMINALS

On-Off-On	MS35059-21	$4.00	$3.50	$3.22	$2.45	$1.96
On-X-On	MS35059-23	4.00	3.50	3.22	2.45	1.96
On-X-On*	MS35059-26	4.80	4.30	3.96	3.01	2.41
On*-Off-On*	MS35059-27	4.70	4.20	3.86	2.94	2.35
On-Off-On*	MS35059-31	4.70	4.20	3.86	2.94	2.35

JAN-S-23 Circuit and Arrangement	Screw Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249	Solder Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
SPST 2-Term.												
On-X-Off	ST40A	$1.76	$1.53	$1.39	$1.20	$1.02	ST42A	$1.95	$1.37	$1.20	$1.04	$0.89
On-X-Off*	ST40B	2.45	1.87	1.63	1.40	1.17	ST42B	2.16	1.48	1.39	1.19	1.00
Off-X-On*	ST40C	2.45	1.87	1.63	1.40	1.17	ST42C	2.05	1.46	1.28	1.12	.94
SPDT 3-Term.												
On-X-On	ST40D	2.46	1.88	1.65	1.43	1.21	ST42D	2.14	1.56	1.36	1.18	1.00
On-Off-On	ST40E	2.46	1.88	1.65	1.43	1.21	ST42E	2.14	1.56	1.36	1.18	1.00
On-X-On*	ST40F	2.77	2.18	1.91	1.63	1.37	ST42F	2.30	1.72	1.52	1.30	1.12
On*-Off-On*	ST40G	2.64	2.06	1.81	1.56	1.33	ST42G	2.30	1.72	1.52	1.30	1.12
On-Off-On*	ST40H	2.77	2.18	1.91	1.63	1.37	ST42H	2.30	1.72	1.52	1.30	1.12
DPST 4-Term.												
On-X-Off	ST50K	2.95	2.39	1.76	1.49	1.20	ST52K	2.76	2.16	1.60	1.35	1.07
On-X-Off*	ST50L	3.48	2.88	2.15	1.78	1.42	ST52L	3.11	2.61	1.90	1.58	1.25
Off-X-On*	ST50M	3.48	2.88	2.15	1.78	1.42	ST52M	3.11	2.61	1.90	1.58	1.25
DPDT 6-Term.												
On-X-On	ST50N	3.35	2.76	2.07	1.72	1.38	ST52N	2.99	2.40	1.80	1.51	1.20
On-Off-On	ST50P	3.35	2.76	2.07	1.72	1.38	ST52P	2.99	2.40	1.80	1.51	1.20
On-X-On*	ST50R	3.72	3.13	2.35	1.97	1.57	ST52R	3.38	2.70	2.08	1.75	1.40
On*-Off-On*	ST50S	3.84	3.24	2.48	2.08	1.66	ST52S	3.52	2.92	2.18	1.82	1.47
On-Off-On*	ST50T	3.72	3.13	2.35	1.97	1.57	ST52T	3.38	2.79	2.08	1.75	1.40

MEDIUM DUTY TOGGLE SWITCHES (INCLUDING MS25098 AND MS25100)

Single-hole, flush-mounting switches for DC or AC circuits up to 1600 Hz. Molded bodies fully enclosed. Rugged, positive action built for extra long life. **Features:** Aircraft lubricant to withstand temperatures −85° F to +185° F. Withstand tropical humidity. Meet 100-hour salt-spray test QQ-M-151a. No momentary make or break or mechanical damage during shake tests or 75 G drop test. Silver-plated stationary contacts; phosphor-bronze movable contacts; meet 50% overload for brief periods. Dielectric exceeds 1,000 V rms, 60 Hz at sea level. Contact resistance well under 0.01 ohm military requirement. Terminals withstand 5-lb. pull. **Nominal Ratings:** 6 amps at 125 VAC; 3 amps at 250 VAC. **Switch Movement:** Same direction as that of the lever. **Finish:** Dull nickel-plate. **Hardware:** Two hex nuts, one internal tooth lockwasher and locking ring (not supplied in bulk shipments). **Series MS25098 and MS25100:** Unique internal design results in surpassing MIL-S-3950A endurance tests. Sand and dust bushing seal; case to terminal seal. Bushing, 15/16" lg. **Series ST12 thru ST27:** Meet JAN-S-23 specs. Double-grip, self-wiping contacts; threaded bushings, 15/16" or ¼" lg.; rear or side solder terminals.

SPST TWO TERMINALS

MIL-S-3950A Circuit	No.	1	2-24	25-49	50-99	100-249
On-X-Off	MS25098-22	$2.50	$2.00	$1.60	$1.49	$1.38
On-X-Off*	MS25098-29	3.10	2.60	2.09	1.94	1.75
Off-X-On*	MS25098-30	3.10	2.60	2.09	1.94	1.75

SPDT THREE TERMINALS

On-X-On	MS25098-23	$2.80	$2.30	$1.83	$1.71	$1.55

DPST FOUR TERMINALS

On-X-Off	MS25100-22	$3.40	$2.90	$2.30	$2.15	$1.95
On-X-Off*	MS25100-29	3.85	3.35	2.67	2.51	2.29
Off-X-On*	MS25100-30	3.85	3.35	2.67	2.51	2.29

DPDT SIX-TERMINALS

On-X-On	MS25100-23	$2.80	$2.30	$1.83	$1.71	$1.55

SPST TWO TERMINALS

Circuit and Arrangement	JAN-S-23 No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-X-Off	ST12A	$1.92	$1.42	$1.04	$0.94	$0.89
On-X-Off*	ST12B	2.21	1.71	1.25	1.14	1.08
Off-X-On*	ST12C	2.33	1.83	1.35	1.23	1.14
On-X-Off	ST13A†	1.96	1.46	1.08	.98	.92
On-X-Off	ST16A‡	2.31	1.81	1.33	1.20	1.13
On-X-Off*	ST16B‡	2.38	1.88	1.38	1.25	1.18
Off-X-On*	ST16C‡	2.38	1.88	1.38	1.25	1.18
On-X-Off	ST17A†‡	2.01	1.51	1.11	1.01	.94

SPDT THREE TERMINALS

On-X-On	ST12D	$2.14	$1.64	$1.20	$1.10	$1.02
On-X-On	ST13D†	2.19	1.69	1.24	1.13	1.07
On-X-On	ST16D‡	2.19	1.69	1.24	1.13	1.07
On-X-On	ST17D†‡	2.36	1.86	1.36	1.24	1.16

DPST FOUR TERMINALS

On-X-Off	ST22K	$2.44	$1.94	$1.43	$1.30	$1.21
On-X-Off*	ST22L	2.75	2.25	1.64	1.49	1.41
Off-X-On*	ST22M	2.75	2.25	1.64	1.49	1.41
On-X-Off	ST23K†	2.49	1.99	1.46	1.34	1.25
On-X-Off	ST26K‡	2.61	2.11	1.55	1.42	1.33
On-X-Off*	ST26L‡	2.79	2.29	1.67	1.54	1.44
Off-X-On*	ST26M‡	2.91	2.41	1.75	1.61	1.51
On-X-Off	ST27K†‡	2.66	2.16	1.58	1.44	1.36

DPDT SIX TERMINALS

On-X-On	ST22N	$2.62	$2.12	$1.56	$1.42	$1.33
On-X-On	ST23N†	2.67	2.17	1.58	1.45	1.36
On-X-On	ST26N‡	2.62	2.12	1.56	1.42	1.34
On-X-On	ST27N†‡	2.79	2.29	1.67	1.54	1.44

*Momentary position. †Bushing ¼" long. ‡Side-connected terminals.

LICON Switches

TYPE 06 LIGHTED PUSHBUTTON SWITCHES
(DISCOUNT SCHEDULE "B")

Patented butterfly switching action with the versatility of one or two lamp illumination and in excess of 200 display options. Available in SPST-DB NO form X, SPDT form C, and SPDT-DB form Z. Terminals are either .110" Quick Connect or printed circuit type. Switches are available with either one or two lamps using standard T 1¾ flange base lamps replaceable from the front. Maximum lamp wattage is 2.4 watts. Wide assortment of lens caps must be ordered separately. Switches snap-mount in .700" x .920" cutout. Switches are available with gold contacts rated at .100 amp at 10 VDC; silver contacts rated 250VAC or 28VDC at 10 amps for form X or 5 amps for form C or Z. U.L. listed.

Licon No.		Contacts				List Price*
Q.C. Term.	P.C. Term.	Poles	Form	Action	Material	
06-710001	06-710026	1	C	Momentary	Silver	$3.80
06-710002	06-710027	2	C	Momentary	Silver	5.00
06-710003	06-710028	1	C	Alternate	Silver	4.60
06-710004	06-710029	2	C	Alternate	Silver	5.50
06-710005	06-710030	1	Z	Momentary	Silver	3.75
06-710006	06-710031	2	Z	Momentary	Silver	4.90
06-710007	06-710032	1	Z	Alternate	Silver	4.55
06-710008	06-710033	2	Z	Alternate	Silver	5.40
06-710009	06-710034	1	X	Momentary	Silver	3.70
06-710010	06-710035	2	X	Momentary	Silver	4.85
06-710011	06-710036	1	X	Alternate	Silver	4.50
06-710012	06-710037	2	X	Alternate	Silver	5.35
06-710013	06-710038	1	C	Momentary	Gold	4.15
06-710014	06-710039	2	C	Momentary	Gold	5.70
06-710015	06-710040	1	C	Alternate	Gold	4.95
06-710016	06-710041	2	C	Alternate	Gold	6.20
06-710017	06-710042	1	Z	Momentary	Gold	4.15
06-710018	06-710043	2	Z	Momentary	Gold	5.70
06-710019	06-710044	1	Z	Alternate	Gold	4.95
06-710020	06-710045	2	Z	Alternate	Gold	6.20
06-710021	06-710046	1	X	Momentary	Gold	4.00
06-710022	06-710047	2	X	Momentary	Gold	5.45
06-710023	06-710048	1	X	Alternate	Gold	4.80
06-710024	06-710049	2	X	Alternate	Gold	5.95
06-710025	06-710050	Indicator only				2.75

LENS CAP FOR TYPE 06 SWITCHES

Lens cap assortment includes choices of one light or two light full screen versions in solid color, projected color, projected color with insertable legend, or hidden display; two light vertical split screen in projected color, projected color with insertable legend, or hidden display; two light horizontal split screen in projected color, projected color with insertable legend, or hidden display. Lens are available at extra cost with engraved or hot-stamped legends. Bezels are matte black finish; for chrome-plated bezels, consult factory.

LENS CAP ORDERING CODE

06- 6 2 2 1 2
(A) (B) (C) (D)

(A)—
1 = One light full screen.
2 = Two light vertical split screen.
3 = Two light horizontal split screen.
4 = Two light full screen.

(B)—
1 = Solid color.
2 = Projected color.
4 = Projected color with insertable legend.
6 = Hidden display.

(C)—Color at left of vertical split screen or at top of horizontal split screen.
1 = White.
2 = Red.
3 = Green.
4 = Blue.
6 = Amber.

(D)—Color at right of vertical split screen or at bottom of horizontal split screen.
1 = White.
2 = Red.
3 = Green.
4 = Blue.
6 = Amber.

To order full screen color, indicate color number in (C) position only.

Licon No. 06-61XXX Lens Cap—List Price..... $1.30
Licon No. 06-62XXX Lens Cap—List Price..... 1.75
Licon No. 06-63XXX Lens Cap—List Price..... 1.75
Licon No. 06-64XXX Lens Cap—List Price..... 1.40

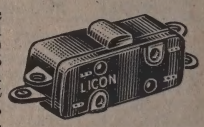
TYPE 10 BASIC SWITCHES
(DISCOUNT SCHEDULE "A")

Type 10—Highly sensitive switch utilizes one-piece mechanism. Assures long life with excellent repeatability and positive snap action. Wide choice of actuators. Rated 15 amps, 125, 250, 460 VAC; ½ amp, 125 VDC. ⅓ hp, 125 VAC; ½ hp, 250 VAC. Size, 2" x 1" x 1 1/16"; 1" mtg. centers. UL Listed; CSA Approved.

Licon Number	Description	Microswitch Equivalent	List Price*
10-132	Pin plunger, .020" gap	BZ-2RT	$2.30
10-137	Pin plunger, .070" gap	BZ-R31	2.25
10-232	Overtravel plunger	BZ-2RST	2.90
10-332	Panel mount plunger	BZ-2RQIT	4.95
10-432	Leaf lever	BZ-2RLT	2.50
10-532	Roller leaf lever	BZ-2RL2T	3.40
10-632	Pivoted lever	.....	2.90
10-732	Pivoted roller lever	BZ-2RW82T	3.60
10-832	Compact plunger	BZ-2RDT	2.95
10-932	Roller plunger	BZ-2RQ18T	8.50
10-73207	One way roller	.....	4.35

Also available in Type 08 heavy duty 22.5 amp version. Write for information and prices.

TYPE 11 MINIATURE TWO-CIRCUIT BASIC SWITCH
(DISCOUNT SCHEDULE "A")



Type 11—High capacity two-circuit basic switch combines long life and high electrical rating into a compact package. Rated 10 amps, 125, 250 VAC or 30 VDC. ½ hp, 125 VAC; ¾ hp, 250 VAC. Tested to 20 million operations. Choice of actuators. Reset models available in all terminal styles. Size, 1¼" x ½" x ½". UL Listed; CSA Approved.

Licon Number	Description	Microswitch Equivalent	List Price*
11-104	End solder terminal	1TB2	$2.00
11-204	End screw terminal	1TB1	2.20
11-304	Side solder terminal	1TB3	2.15
11-504	¼" quick-disconnect end	.....	2.05
11-114	Reset-end solder term.	.....	2.40
11-214	Reset-end screw term.	.....	2.55
11-314	Reset-side solder term.	.....	2.45

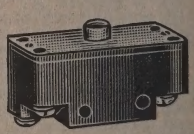
MS PART NUMBERS FOR TYPE 11

Licon Number	Description	List Price*
11-188051	MS25342-1	$3.55
11-288051	MS25344-1	3.55
11-388051	MS25343-1	3.55

AUXILIARY ACTUATORS ONLY FOR TYPE 11

Licon Number	Actuator Type	No. of Poles	List Price*
71-1040	Rigid roller lever	1	$1.05
71-2010	Overtravel plunger	1	1.70
71-2077	Straight-line plunger	2	2.85
71-2657	Pushbutton (½" dia.)	1	2.55

TYPE 14 HEAVY DUTY TWO-CIRCUIT SWITCH
(DISCOUNT SCHEDULE "A")



Type 14—Heavy-duty industrial limit switch. Uses double break mechanism for high electrical rating. Nylon button reduces mechanical wear. Well-spaced electrical terminals. Horizontal mounting holes permit multiple side mounting. Rated 20 amps, 125/250 VAC. Size, 1 3/16" x 1 13/16" x 1 1/16". UL Listed; CSA Approved.

Licon Number	Description	List Price*
14-124	Basic switch, horizontal mounting	$3.70
14-1241	Reset switch	4.30
14-128040	Heavy duty, vertical mounting	3.90
14-324	Overtravel plunger actuator switch	5.65
14-724	Pivoted roller lever actuator	5.00

★QUANTITY DISCOUNT SCHEDULE "A"

Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	30%	.70
50–99	20%	.80	500–999	40%	.60

●QUANTITY DISCOUNT SCHEDULE "B"

Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	15%	.85
50–99	10%	.90	500–999	26%	.74

Write for additional discounts on larger quantities.

LICON Switches

TYPE 16 SUBMINIATURE TWO-CIRCUIT BASIC SWITCH

(DISCOUNT SCHEDULE "A")

Type 16—Two-circuit subminiature. Double break mechanism tested over 20 million mechanical cycles. Rated 10 amps 125/250 VAC or 28 VDC. Exceptional shock and vibration resistance. Solder, screw or taper tab terminals extending from various unit faces. Auxiliary actuators include levers, roller levers and toggles. Size, 2 5/32" x 7/16" x 1/4". UL Listed; CSA Approved.

Licon Number	Description	Circuit	List Price*
16-104	End solder terminal	SPDT, Form Z	$2.80
16-304	Side solder terminal	SPDT, Form Z	2.80
16-404	Bottom solder terminal	SPDT, Form Z	2.80
16-114	Reset-end solder term.	SPDT, Form Z	3.05
16-504	Bottom taper tab term.	SPDT, Form Z	2.80
16-204	Screw end terminal	SPDT, Form Z	2.80
16-4042	Hi-temperature case	SPDT, Form Z	3.20
16-40401	Gold-plated contacts	SPDT, Form Z	3.35
16-40421	Hi-temp case, gold-plated contacts	SPDT, Form Z	3.80
16-188051	MS25476-1	SPDT, Form Z	4.00
16-388051	MS27217-2	SPDT, Form Z	4.00
16-488051	MS27217-1	SPDT, Form Z	4.00

AUXILIARY ACTUATORS ONLY FOR TYPE 16

76-1200	Rigid roller lever	1 pole	$1.10
76-1210	Rigid lever	1 pole	.65
76-3200	Spring lever	1 pole	.45
76-3210	Spring roller lever	1 pole	.95
76-2190	Pushbutton	2 pole	2.70
76-2220	Pushbutton	1 pole	2.50
76-2260	Overtravel pushbutton	1 pole	2.60
76-4210	Two-position toggle	2 pole	9.30
76-4220	Two-position toggle	3 pole	9.65
76-2100	Maintained pushbutton	2 pole	4.55

TYPE 76 SNAP-TOGETHER PUSHBUTTON SWITCHES

(DISCOUNT SCHEDULE "A")

Non-lighted, snap-together pushbutton design offers choice of 5/8" or 15/32" bushings, four button colors and a wide variety of snap-on switch modules with high performance, 10-amp subminiature double break switches. Unit price includes the three individual components.

SWITCH MODULES

Licon Number	Actuator Type	No. of Poles	Contact Form	List Price*
76-2711	Maintained	1	C	$4.90
76-2713	Maintained	1	Z	5.25
76-2721	Maintained	2	C	6.00
76-2723	Maintained	2	Z	6.65
76-2751	Momentary	1	C	3.15
76-2753	Momentary	1	Z	3.50
76-2761	Momentary	2	C	4.00
76-2763	Momentary	2	Z	4.65

BUSHINGS

Licon No.	O.D.	List Price*	Licon No.	O.D.	List Price*
76-2530	15/32"	$1.35	76-2550	5/8"	$1.60

PUSHBUTTONS

Licon No.	Color	List Pr.*	Licon No.	Color	List Pr.*
80-700903	White	$0.26	80-700909	Green	$.026
80-700908	Red	.26	80-700910	Black	.26

TYPE 18 SUB-SUBMINIATURE SWITCHES

(DISCOUNT SCHEDULE "A")

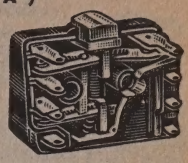
Type 18—Double-break switch has same reliability and precision performance of Type 16 switches. Features big switch rating. Rated 7 amps, 125/250 VAC. Size, .200" x .500" x .350". UL Listed.

Licon Number	Description	List Price*
18-40121	SPST-NC-DB, solder terminals	$5.30
18-40221	SPST-NO-DB, solder terminals	5.30
18-40421	SPDT-DB, solder terminals	5.30
18-488051	MS27257-1(B)	5.75

ALWAYS SPECIFY LICON PRECISION, SNAP-ACTION SWITCHES—MADE TO MEET MIL RELIABILITY, CAPACITY AND LIFE REQUIREMENTS.

TYPE 22 FOUR-CIRCUIT BASIC SWITCH

(DISCOUNT SCHEDULE "A")



Type 22—Features high current interruption, tested to over 10 million cycles mechanical life. DPDT, 4 independent circuits permit simultaneous multiple circuit control without complicated mechanisms. Rated 10 amps, 125, 250 VAC or 30 VDC. 1/2 hp, 125 VAC; 1/4 hp, 250 VAC. Size, 7/8" x 1 1/4" x 1/2". UL Listed.

BASIC SWITCH

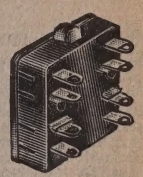
Licon Number	Description	Microswitch Equivalent	List Price*
22-304	DPDT—side solder terminal	41TB5-3	$6.25
22-204	DPDT—screw terminals	.....	6.40
22-104	DPDT—solder terminal	.....	6.25
22-504	DPDT—1/4" quick-disconnect term.	.....	6.25
22-188051	MS25348-1	.....	8.95
22-388051	MS25349-1	.....	8.95

AUXILIARY ACTUATORS FOR TYPE 22

72-1150	Rigid lever	$0.70
72-1160	Rigid roller lever	1.40
72-2080	Overtravel plunger	1.95

TYPE 26 DOUBLE POLE SUBMINIATURE SWITCHES

(DISCOUNT SCHEDULE "A")

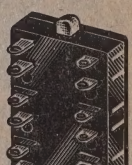


Type 26—Subminiature double pole switch utilizes two Licon Butterfly® double-break mechanisms. Simultaneity of operation of both poles insured by special linkage between mechanisms. Switch eliminates need for dual components and actuating mechanism; requires less space than two single pole miniature switches. Type 76 actuators fit type 26 switches. Pushbutton and toggle actuators fit 26-800 switch series only. Rated 8 amps, 125/250 VAC; 8 amps resistive, 5 amps inductive, 28 VDC. Size, 2 5/32" x .761" x 1/4". UL Listed.

Licon Number	Description	List Price*
26-801	DPST-NC-DB, end solder terminals	$6.90
26-802	DPST-NO-DB, end solder terminals	6.90
26-804	DPDT-DB, end solder terminals	6.90
26-80401	Same, but non-simultaneous	5.70
26-8042	DPDT-DB, hi-temp., end solder	7.80
26-80421	Same, but non-simultaneous	6.65
26-901	DPST-NC-DB, side solder terminals	6.90
26-902	DPST-NO-DB, side solder terminals	6.90
26-904	DPDT-DB, side solder terminals	6.90
26-90401	Same, but non-simultaneous	5.70
26-9042	DPDT-DB, hi-temp., side solder	7.80
26-90421	Same, but non-simultaneous	6.65
26-888051	M8805/77-001	8.95
26-988051	M8805/77-002	8.95

TYPE 36 TRIPLE-POLE SUBMINIATURE SWITCHES

(DISCOUNT SCHEDULE "A")



Type 36—Utilizes three Licon Butterfly® double-break mechanisms with simultaneous operation. Greatly reduces space requirements. Uses same actuators as Types 16 and 26. Contacts 3PDT-DB, momentary action; rated 7.5 amps resistive, 5 amps inductive (7.5 amps, UL Listed) at 125/250 VAC or 28 VDC. Size, 2 5/32" x 1 3/16" x 1/4", excluding terminals.

Licon No.	Description	List*
36-604	End solder terminals, simultaneous action	$10.55
36-704	Side solder terminals, simultaneous	10.55
36-60401	End solder terminals, non-simultaneous	9.35
36-70401	Side solder terminals, non-simultaneous	9.35
36-688051	M8805/78-001	13.20
36-788051	M8805/78-002	13.20

★QUANTITY DISCOUNT SCHEDULE "A"

These discounts apply to all items on this page.

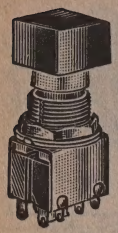
Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	30%	.70
50–99	20%	.80	500–999	40%	.60

Write for additional discounts on larger quantities.

LICON Switches

TYPE 01 LIGHTED PUSHBUTTON SWITCH WITH SINGLE LAMP INDICATOR

(DISCOUNT SCHEDULE "B")



Type 01 pushbutton switch combines single bulb panel indicator with multi-pole pushbutton switch. For original equipment or replacement of toggles with color-lit or legend-coded button. Provides a visual reminder that a circuit is on or off at a glance. Available in red, white, yellow, green, or blue pushbutton, ⅝" and ¾" round or square, and 1⅛" diameter round lens caps; solid or projected color illumination. **Order lens cap separately.** Available in one and two-pole form C or form Z contact arrangement. Switch rated at 10 amps, 250 VAC or 30 VDC. Momentary, maintained, solenoid held and indicator models. One hole mounting with choice of 15/32" or ⅝" bushing. Uses T-1¾ lamp with screw or flange base (not included in price). Overall size: 1 23/32" x ⅝" x 2 5/32". UL Listed.

Licon Number	Unit Type	Bushing	Lamp Base	No. of Poles	Contact Form	List Price*
01-145000	Indicator	15/32-32	Screw	.....	.....	$ 4.35
01-365000	Indicator	⅝-24	Flange	.....	.....	4.35
01-145510	Momentary	15/32-32	Screw	1	C	6.70
01-145530	Momentary	15/32-32	Screw	1	Z	6.95
01-365510	Momentary	⅝-24	Flange	1	C	6.70
01-365530	Momentary	⅝-24	Flange	1	Z	6.95
01-145610	Momentary	15/32-32	Screw	2	C	9.05
01-145630	Momentary	15/32-32	Screw	2	Z	9.70
01-365610	Momentary	⅝-24	Flange	2	C	9.05
01-365630	Momentary	⅝-24	Flange	2	Z	9.70
01-145110	Maintained	15/32-32	Screw	1	C	9.80
01-145130	Maintained	15/32-32	Screw	1	Z	10.15
01-365110	Maintained	⅝-24	Flange	1	C	9.80
01-365130	Maintained	⅝-24	Flange	1	Z	10.15
01-145210	Maintained	15/32-32	Screw	2	C	12.10
01-145230	Maintained	15/32-32	Screw	2	Z	12.75
01-365210	Maintained	⅝-24	Flange	2	C	12.10
01-365230	Maintained	⅝-24	Flange	2	Z	12.75

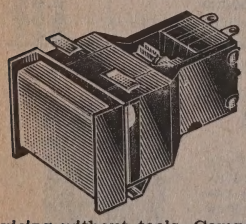
*LENS CAP (SOLID COLOR) ORDERING INFORMATION

Licon Number	Cap Shape	Cap Size	For Bushing	List Price*	Cap Color Indication
01-93131X	Round	⅝"	15/32-32	$0.45	Add proper suffix to replace **X** for cap color indication.
01-94131X	Round	⅝"	⅝-24	.45	
01-93141X	Round	¾"	15/32-32	.60	
01-94141X	Round	¾"	⅝-24	.60	**White:** Suffix **1**
01-93181X	Round	1⅛"	15/32-32	.80	**Red:** Suffix **2**
01-94181X	Round	1⅛"	⅝-24	.80	**Green:** Suffix **3**
01-91131X	Square	⅝"	15/32-32	.45	**Blue:** Suffix **4**
01-92131X	Square	⅝"	⅝-24	.45	**Yellow:** Suffix **5**
01-91141X	Square	¾"	15/32-32	.60	**Example:** 01-931311
01-92141X	Square	¾"	⅝-24	.60	White cap, solid color

*Solid color; projected color types on request.

TYPE 01-800 SNAP-IN ILLUMINATED MATRIX MOUNTING SWITCH—WITH SINGLE LAMP INDICATOR

(DISCOUNT SCHEDULE "B")



Type 01-800 single-lamp lighted pushbutton switch offers time-saving snap-in front mounting on panels. Combination bezel-barrier eliminates misguided actuation. Choice of screen colors with solid or projected illumination. Choice of momentary or maintained contact types in Form C (SPDT) and Form Z (SPDT, double break); or, indicator-only units. Switch rated 10 amps, 125/250 VAC; UL Listed. Uses T-1¾ flange bulbs (not included in price); simple front-panel lamp servicing without tools. Compact 1⅛" x ⅞" lens cap gives ample space for engraving or hot stamping.

Indicator Licon Number	Switch Modules		Lens Caps*		
	Description	List Price*	Licon Number	Color	List Price*
01-865000	Indicator only	$2.40	01-951911	White	$0.75
01-865130	1-pole, maintained	6.60	01-951912	Red	.75
01-865230	2-pole, maintained	8.55	01-951913	Green	.75
01-865530	1-pole, momentary	4.40	01-951914	Blue	.75
01-865630	2-pole, momentary	6.30	01-951915	Yellow	.75
			01-951916	Amber	.75
			01-951917	Orange	.75

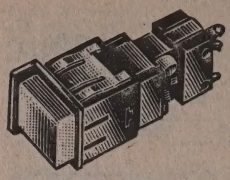
*Solid color; projected color types on request.

●QUANTITY DISCOUNT SCHEDULE "B"

Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	15%	.85
50–99	10%	.90	500–999	26%	.74

TYPE 01-665 SWITCH HOUSING (FOR USE WITH TYPE 01-768 LIGHTED SWITCH)

(DISCOUNT SCHEDULE "B")



Type 01-600—Easy-to-install, snap-in housing for use with Type 01-768 switch (listed below, under 01-700 series). Complete lighted switch offers versatility and flexibility at low cost. Available in bezel, single barrier or double barrier design. Individual or matrix mounting is possible with a single panel cutout. Uses lens cap 01-92141X as listed in Type 01 lens cap section. Panel cutout, .875".

Licon No.	Description	List*
01-600021	Vertical row mtg., vert. barrier	$1.25
01-600022	Horizontal row mtg., vert. barrier	1.25
01-600024	Horizontal row mtg., single vert. barrier	1.25
01-600026	Horizontal row mtg., no barrier	1.25

TYPE 01-745 ONE-LITE PUSHBUTTON SWITCHES

(DISCOUNT SCHEDULE "B")

Type 01-745—Low cost, momentary or maintained, lighted pushbutton combines long life, double-break switch and lamp base in one plastic housing. Choice of cylindrical, translucent lens caps or regular 01 Series lens caps (if plunger converter is used). Bulb replaceable from front of panel; uses screw-base T-1¾ lamp, not supplied. Switch mechanism is one or two-pole momentary with SPDT (Form Z or C) contact. UL Listed at 10 A, 125/250 VAC.

SWITCHES WITHOUT LENS CAPS

Licon Number	Actuator	No. Poles	Contact Form	List Price*
01-745000	Indicator only (no switch)			$1.85
01-745510	Momentary	1	C	3.20
01-745530	Momentary	1	Z	3.40
01-745610	Momentary	2	C	3.90
01-745630	Momentary	2	Z	4.35
01-745110	Maintained	1	C	4.20
01-745130	Maintained	1	Z	4.45
01-745210	Maintained	2	C	4.95
01-745230	Maintained	2	Z	5.35

PLUNGER CONVERTER INSTALLED

For use with 01 Series lens caps. ⅝" bushing only.

Licon Number	Actuator	No. of Poles	Contact Form	List Price*
01-768000	Indicator only (no switch)			$2.05
01-768510	Momentary	1	C	3.40
01-768530	Momentary	1	Z	3.60
01-768610	Momentary	2	C	4.10
01-768630	Momentary	2	Z	4.55
01-768110	Maintained	1	C	4.55
01-768130	Maintained	1	Z	4.75
01-768210	Maintained	2	C	5.25
01-768230	Maintained	2	Z	5.65

TRANSLUCENT LENS CAP FOR 01-745

Momentary—Specify number. List Price..... 23c*

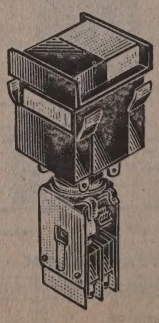
Licon No.	Color	Licon No.	Color	Licon No.	Color
80-010764	Green	80-010766	Yellow	80-010768	White
80-010765	Red	80-010767	Blue		

Maintained—Specify number. List Price..... 30c*

80-010890(G)	Green	80-010892(Y)	Yellow	80-010894(W)	White
80-010891(R)	Red	80-010893(B)	Blue		

TYPE 02-800 TWO-LIGHT SWITCH

(DISCOUNT SCHEDULE "B")



Economical two-light version of the 01-800 with efficient snap-in mounting and attractive bezel barrier appearance. Size, 1⅛" x ⅞". Employs 76-27XX series snap-on switch module. To order complete unit, select a lens cap, housing, and switch module (76-27XX, as shown in 04 section).

LENS CAPS

Licon No.*	Description	List*
02-61XX	Full screen†	$0.80
02-62XX	Vertical split†	1.35
02-63XX	Horizontal split†	1.35
02-64XX	Full proj. color	1.35
02-65XX	Vert proj. color	2.00
02-66XX	Horiz., proj. color	2.00

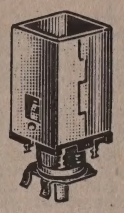
*Indicate desired colors by substituting appropriate numbers for XX in Licon No.: 1=white, 2=red, 3=green, 4=blue, 5=yellow, 6=amber, 7=orange. †Solid color.

HOUSINGS

02-73	Snap-in, flange base lamp sockets	$2.15
02-76	Indicator only	2.15

TYPE 04 LIGHTED PUSHBUTTON SWITCH—WITH FOUR-LAMP INDICATOR

Type 04 illuminated pushbutton switches combine four-bulb panel indicator ⅞″ square with multipole switching. Choice of full or split screens: Projected or solid color illumination. Four different styles: Momentary or maintained contact; solenoid held switch models, with form C or form Z contact arrangements; and indicator-only units. Switch rated at 10 amps, 250 VAC or 30 VDC. Uses T-1¾ flange bulbs (not included in price). Simple front of panel lamp servicing without tools. Choice of flange, barrier, bezel or bezel barrier mounts. **Order each module individually.** A light module, a housing module and a switch module make a complete assembly. A light module and a housing only makes an indicator only.



Type 04 Indicator/Switch

LIGHT MODULE (FIG. A) (DISCOUNT SCHEDULE "B")

Licon Number	Screen Split or Full	Color (Specify)	For Unit	List Price*
04-601*	Full	Proj.	Indicator-switch	$3.10
04-602*	Vert. split	Proj.		3.50
04-603*	Horiz. split	Proj.		3.50
04-604*	Full	Solid		3.10
04-631*	Full	Proj.	Indic. only	3.10
04-634*	Full	Solid		3.10

*Indicate color filter combination for projected color module by listing color designating letters (R = red, G = green, A = amber, Y = yellow, W = white, B = blue, O = orange) clockwise in accordance with Color Key figure at right e.g., 04-602 RGGR.

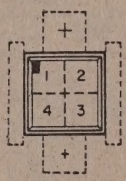
HOUSING MODULE (FIG. B) (DISCOUNT SCHEDULE "B")

Flush and protruding barriers also available.

Licon Number	Description	List Price*
04-71	Flange mount, ⅛″ panel	$4.60
04-72	Flange mount, ¼″ panel	4.60
04-73	Flange mount, ⅜″ panel	4.60
04-74	Flange mount, ½″ panel	4.60
04-75	Barrier mount	4.35
04-76	Bezel, black	4.60
04-77	Bezel, clear	4.60
04-78	Bezel barrier, black	4.60
04-79	Bezel barrier, clear	4.60

SWITCH MODULE (FIG. C) (DISCOUNT SCHEDULE "A")

Licon Number	Unit Type	No. of Poles	Contact Form	List Price*
76-2711	Maintained	1	C	$4.90
76-2713	Maintained	1	Z	5.25
76-2721	Maintained	2	C	6.00
76-2723	Maintained	2	Z	6.65
76-2751	Momentary	1	C	3.15
76-2753	Momentary	1	Z	3.50
76-2761	Momentary	2	C	4.00
76-2763	Momentary	2	Z	4.65



Color Key

TYPE 65 SUBMIN. SEALED SWITCH (DISCOUNT SCHEDULE "A")

Type 65—Dependable, environment-free snap-action switching with ratings up to 7.5 amps, 30 VDC. SPDT 2-Circuit configuration. Solder terminals; quick-disconnect, screw and potted leads available on special order. Size, .850″ x .875″ x .320″; mtg. centers, ½″.

Licon No.	Description	List Pr.*
65-101	Rigid lever	$10.45
65-201	Pin plunger	9.05
65-301	Roller lever	11.20
65-401	Overtravel plung.	12.65

65-401

★QUANTITY DISCOUNT SCHEDULE "A"

Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	30%	.70
50–99	20%	.80	500–999	40%	.60

●QUANTITY DISCOUNT SCHEDULE "B"

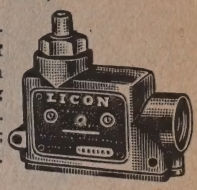
Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	15%	.85
50–99	10%	.90	500–999	26%	.74

■QUANTITY DISCOUNT SCHEDULE "D"

Quantity	Discount	Multiplier	Quantity	Discount	Multiplier
1–49	0%	None	100–499	30%	.70
50–99	10%	.90	500–999	40%	.60

TYPE 30 DIECAST ENCLOSED SWITCH (DISCOUNT SCHEDULE "A")

Type 30—Offers versatility for wide applications. Superior mounting and variety of infinitely adjustable actuators. Aluminum housing is rugged; permits adequate wiring room; has ½-14 internal tap conduit hub. Rated 15 amps, 125, 250 and 480 VAC; ½ amp, 115 VDC. Size, 3″ x 1″ x 2½″.



DIECAST HOUSINGS

Licon No.	Description	List Pr.*
30-100	Overtravel plunger, side mount	$ 6.50
30-120	Overtravel plunger, base mount	6.50
30-200	Internal sealed O.T. plunger, side mount	8.55
30-220	Internal sealed O.T. plunger, base mount	8.55
30-300	Roller lever actuator, side mount	11.60
30-320	Roller lever actuator, base mount	11.60
30-400	Internal sealed roller lever, side mount	13.15
30-420	Internal sealed roller lever, base mount	13.15
30-500	Roller plunger actuator, side mount	11.60
30-520	Roller plunger actuator, base mount	11.60
30-600	Palm button actuator, side mount	13.80
30-620	Palm button actuator, base mount	13.80
30-700	Internal sealed roller plunger, side mt.	12.60
30-720	Internal sealed roller plunger, base mt.	12.60
30-800	Internal sealed 1-way roller, side mount	15.25
30-820	Internal sealed 1-way roller, base mount	15.25
30-900	One-way roller, side mount	13.80
30-920	One-way roller, base mount	13.80
30-200010	Sealed O.T. plunger with external boot seal, side mount	10.10
30-220010	Sealed O.T. plunger, seal, base mount	10.10

SPLIT HOUSINGS

30-140	Overtravel plunger, side mount	$ 6.60
30-150	Overtravel plunger, base mount	6.60
30-240	Internal sealed O.T. plunger, side mount	8.60
30-250	Internal sealed O.T. plunger, base mount	8.60
30-340	Roller lever actuator, side mount	11.60
30-350	Roller lever actuator, base mount	11.60
30-440	Internal sealed roller lever, side mount	13.15
30-450	Internal sealed roller lever, base mount	13.15
30-540	Roller plunger actuator, side mount	11.60
30-550	Roller plunger actuator, base mount	11.60
30-640	Palm button actuator, side mount	13.80
30-650	Palm button actuator, base mount	13.80
30-740	Internal sealed roller plunger, side mt.	12.60
30-750	Internal sealed roller plunger, base mt.	12.60
30-840	Internal sealed 1-way roller, side mount	15.25
30-850	Internal sealed 1-way roller, base mount	15.25
30-940	One-way roller, side mount	13.80
30-950	One-way roller, base mount	13.80

INDIVIDUAL COMPONENTS FOR TYPE 30

73-1900	Roller lever actuator (alone)	$4.55
73-1910	Palm button actuator (alone)	5.20
73-1920	One-way roller actuator (alone)	7.75
80-300610	Split case housing bottom half, base mt.	.90
80-300609	Split case housing bottom half, side mt.	.90
80-300502	Die cast housing bottom plate, side mt.	.60
80-300508	Die cast housing bottom plate, base mt.	.60
30-030	Die cast terminal enclosure, side mount	2.55

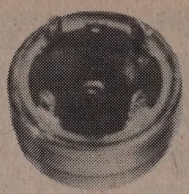
TYPE 05 LIGHTED PUSHBUTTON SWITCHES (DISCOUNT SCHEDULE "D")

An economical lighted pushbutton switch for office machines, appliances, and home entertainment equipment. Also available in a non-lighted version as well as an indicator only, series 05 mounts in a .625″ x .625″ cutout in panels from ½₂″ to ³²⁄₃₂″ thick. Snap-in bezel mounting assures rigid retention and permanent alignment. Lamp is accomplished from the front of the panel. The wedge-base T1¾ lamp is used. Available as a single pole, single throw switch with normally open contacts or double-pole, single throw normally open. Contacts are bifurcated with silver plate. Rating is .25 amps at 125 VAC max. U.L. listed. Terminals mate with .110″ quick-connectors, or are available with P.C. terminals.

Licon No.	Description	List Price*
05-111X0	Lighted, .110″ Q.C. terminals	$1.35
05-161X0	Lighted, P.C. terminals	1.35
05-121X0	Lighted, 2-pole .110″ Q.C. terminals	2.40
05-171X0	Lighted, 2-pole P.C. terminals	2.40
05-211X0	Non-lighted, .110″ Q.C. terminals	1.10
05-261X0	Non-lighted, P.C. terminals	1.10
05-221X0	Non-lighted, .110″ Q.C. terminals	2.15
05-271X0	Non-lighted, P.C. terminals	2.15
05-101X0	Indicator only, .110″ Q.C. terminals	.90
05-151X0	Indicator only, P.C. terminals	.90

For desired lens color, substitute one of the following numbers in place of the **X** in the Licon No.: White **1**; Red, **2**; Green, **3**; Amber, **6**.

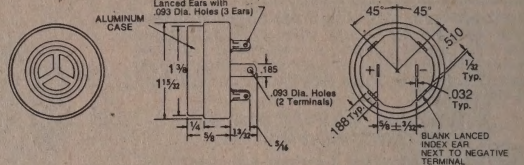
SONALERT® ELECTRONIC SIGNALS



A major advance in the audible signal warning devices. Produces a penetrating sound of 2900, 3500 or 4500 Hz by utilizing the piezoelectric principle. All circuitry is solid state for maximum efficiency, lowest current requirement and high reliability. Silicon transistor oscillator drives piezoelectric transducer to produce the desired output tone. The physical characteristics of the transducer determines the output frequency; and, this cannot be altered by external means. Output intensity is directly proportional to input voltage and ranges from 68 dB at min. to 80 dB at max. C. Draws only 16 mA max. (less than an indicator lamp), there are no mechanical points to arc and require maintenance, and there is no RF field generated. The Sonalert will operate in ambient temperatures from −30° C to +65° C; and, because of its solid state design, it is reliable, with a life expectancy of 10,000 hours. Used in computer systems in which stray RF could cause false readouts; in portable mine detectors in which ruggedness, minimum current and maximum reliability are prime considerations; also in aerospace projects requiring maximum efficiency and reliability. Sonalert is also used in volatile atmospheres where high density gas vapor could cause explosion. All have special silicon transistors and nylon case. Screw can be removed and solder or arkless quick-connect connections can be made. Max. panel thk. ¼". No detailed MIL spec but widely used in military and aerospace applications; ask for Bulletin 9-398 for additional details. For a 48-page booklet on Sonalert uses, request Mallory Form 9-406.

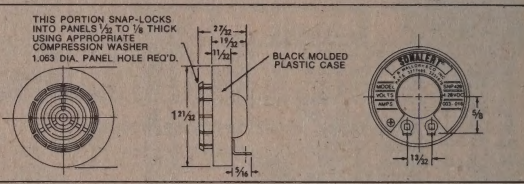
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SC1.5	3500	1–4	4 @ 1.5 V	60 @ 1.5 V	$5.98
SC6	3500	4–8	12 @ 6 V	70 @ 6 V	5.98
SC12	3500	8–15	14 @ 12 V	70 @ 12 V	5.98
SC18	3500	14–22	16 @ 18 V	70 @ 18 V	5.98
SC24	3500	20–30	16 @ 24 V	70 @ 24 V	5.98

*Tolerance: ± 500 Hz.



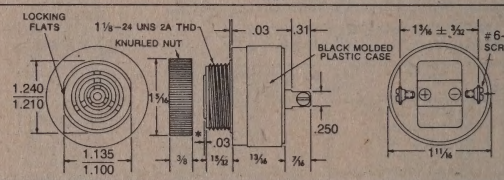
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SNP428	2900	4–28	2–14	64–78	$5.23
PW1	Compression Washer for 11–12 Ga. Panel				.03
PW2	Compression Washer for 13–17 Ga. Panel				.05
PW3	Compression Washer for 18–22 Ga. Panel				.07

*Tolerance: ± 500 Hz.


THIS PORTION SNAP-LOCKS INTO PANELS 1/32 TO 1/8 THICK USING APPROPRIATE COMPRESSION WASHER
1.063 DIA. PANEL HOLE REQ'D.
BLACK MOLDED PLASTIC CASE

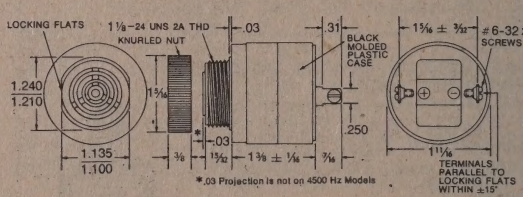
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SC628▲	2900	6–28	3–14	68–80	$6.20
SC628H	4500	6–28	3–14	68–80	7.19
SC648	2900	10–48	3–14	68–80	7.88
SC648H	4500	10–48	3–14	68–80	*

*Tolerance: ± 500 Hz. ▲U.L. Yellow Card Approval.
*Prices on request.



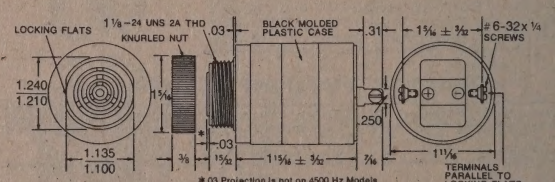
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SC628P▲	2900†	6–28	3–14	68–80	$11.24
SC628HP	4500†	6–28	3–14	68–80	12.23
SC628A■	2900	6–28	3–14	68–80	9.92
SC628AH■	4500	6–28	3–14	68–80	10.92
SC648A■	2900	10–48	3–14	68–80	*
SC648AH■	4500	10–48	3–14	68–80	*
SC110■	2900	30–120	4–16	68–80	9.92
SC110H■	4500	30–120	4–16	68–80	10.92
SC250■	2900	60–250	4–16	68–80	10.71

■AC/DC version. †Pulsating 2 to 9 Hz. *Tolerance: ± 500 Hz.
▲U.L. Yellow Card Approval. *Prices on request.



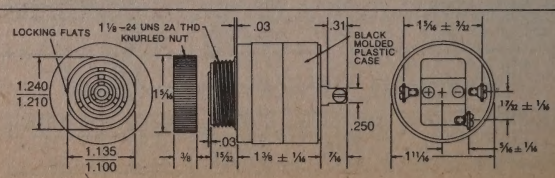
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SC628AP■	2900†	6–28	3–14	68–80	$14.96
SC628AHP■	4500†	6–28	3–14	68–80	15.96
SC648AP■	2900†	10–48	3–14	68–80	*
SC648AHP■	4500†	10–48	3–14	68–80	*
SC110P■	2900†	30–120	4–16	68–80	14.96
SC110HP■	4500†	30–120	4–16	68–80	15.96
SC250P■	2900†	60–250	4–16	68–80	*
SC250HP■	4500†	60–250	4–16	68–80	*

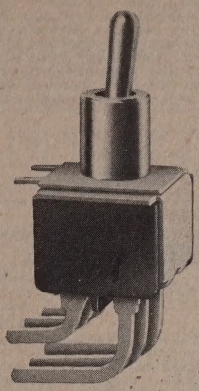
■AC/DC version. †Pulsating 2 to 9 Hz. *Tolerance: ± 500 Hz.
*Prices on request.



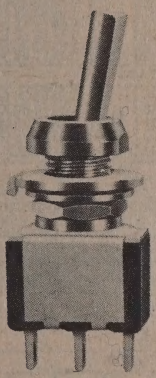
Part No.	Sound Freq. Hz.*	Operating VDC	Oper. Cur. mA	Sound Intensity dB	List Each
SC628W‡	2900	6–28	3–16	68–80	$12.29

‡Warbler version: use with SC628, SC628H or SN428.
*Tolerance: ± 500 Hz.





105DPC



105E49

205N

MINIATURE TOGGLE SWITCHES

Ultra-small toggle switch combines high current capacity and long life in a miniature package. Ideally suited for miniaturized equipment with front and rear panel space limitations. Toggle switches rated 5 amps at 115 VAC and employ solid state silver contacts (center terminal copper with silver plate) with well spaced terminals for easy soldering. **Current Rating:** 5 amps at 115 VAC or 28 VDC. **Initial Contact Resistance:** Less than 20 milliohms at 2–4 VDC, 1 amp. **Insulating Resistance:** Greater than 1000 megohms between terminals and case ground at 500 VDC. **Operating Force:** Less than 3.3 lbs. **Life Cycle:** 80,000 cycles (SPDT); 50,000 (DPDT); 25,000 (3PDT, 4PDT) on/off operations, switching actions at rated current. **Voltage Breakdown:** 1000 VAC between terminals and case ground for one minute. **Case Material:** Black phenolic resin. **Contact and Terminals:** Solid silver (center terminal copper with silver plate). **Bushing Size:** Standard ¼-40 nut with keyway. **Overall Size:** SPDT, 1.353″ (1.278″ for 105D) x 0.492″; DPDT, 1.353″ (1.278″ for 205N) x 0.492″; 3PDT or 4PDT, 1.383″ x 0.492″.

STANDARD TOGGLE AND TERMINALS

Raytheon No.	Contacts	Description	Net Each, Lots of 25-99	100-499	500-999	1000-2499
105D	SPDT	On-None-On	$0.95	$0.80	$0.76	$0.75
105E	SPDT	On-Off-On	1.15	.96	.91	.88
105F	SPDT	None-On-On*	1.15	.96	.91	.88
105G	SPDT	On*-Off-On*	1.15	.96	.91	.88
105H	SPDT	On-Off-On*	1.15	.96	.91	.88
205N	DPDT	On-None-On	1.28	1.07	1.01	.99
205P	DPDT	On-Off-On	1.55	1.30	1.20	1.14
205PA	DP3T	On-On-On	1.75	1.45	1.36	1.30
205R	DPDT	None-On-On*	1.55	1.30	1.20	1.14
205S	DPDT	On*-Off-On*	1.55	1.30	1.20	1.14
205T	DPDT	On-Off-On*	1.55	1.30	1.20	1.14
305D	3PDT	On-None-On	2.52	2.17	1.73	1.65
305E	3PDT	On-Off	2.70	2.34	1.86	1.78
405N	4PDT	On-Off-On	3.20	2.78	2.21	2.11
405P	4PDT	On-None-On	3.47	3.02	2.53	2.42

*Momentary position.

FLATTED TOGGLE, STANDARD TERMINALS

105D49	SPDT	On-None-On	$1.93	$1.75	$1.65	$1.45
105E49	SPDT	On-Off-On	1.93	1.75	1.65	1.45
205N49	DPDT	On-None-On	2.10	1.90	1.80	1.65
205P49	DPDT	On-Off-On	2.35	2.10	2.05	1.85

STANDARD TOGGLE, P.C. TERMINALS

105D2	SPDT	On-None-On	$1.30	$1.17	$1.11	$1.02
105E2	SPDT	On-Off-On	1.50	1.35	1.30	1.20
205N2	DPDT	On-None-On	1.75	1.60	1.50	1.35
205P2	DPDT	On-Off-On	2.00	1.80	1.70	1.60
305D2	3PDT	On-None-On	2.85	2.55	2.45	2.25
405N2	4PDT	On-None-On	3.70	3.30	3.15	2.90

SHORT TOGGLE, RIGHT ANGLE P.C. TERMINALS

105DPC	SPDT	On-None-On	$1.34	$1.18	$1.14	$1.09
105E3	SPDT	On-Off-On	1.40	1.20	1.16	1.08
105F3	SPDT	None-On-(On)	1.40	1.20	1.16	1.08
205P3	DPDT	On-Off-On	2.05	1.80	1.70	1.54

PUSHBUTTON SWITCHES

Momentary contact pushbutton switches available in both snap action "feel" and butt contact styles. Contacts on "P" style are gold on brass rated at 1 amp resistive load at 120 VAC. Designed for use in low energy circuits. Contacts on "MP" style are coin silver rated at 1 amp resistive load at 120 VAC. "P" style can be wired as normally open or normally closed. Nylon snap-on caps for "P" series available in white, black, red, orange, yellow, green, blue, brown or gray; black supplied unless otherwise specified.

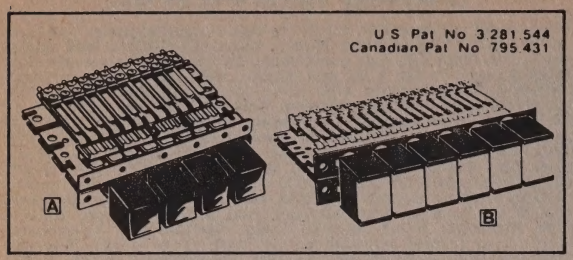
Raytheon No.	Description	Net Each, Lots of 1-24	25-99
P1F1	SPST	$2.55	$1.70
P2F1	DPDT	3.45	2.30
MP1F1	SPST-NO (red plunger)	.90	.60
MP1E1	SPST-NC (black plunger)	.90	.60

ROCKER, LEVER SWITCHES

Snap-in front panel mounting. Fits into .500″ x .600″ hole—spring clips lock in place on panels with thickness of .062″ to .125″. Rated 5 amps at 125 VAC. Available in both single or double pole. Attractive snap-on nylon bezel; actuator and bezel available in black, white or red. Supplied with black actuator and bezel unless other color specified when ordering. UL Listed.

Raytheon No.	Style	Action	Net Each, Lots of 1-24	25-99
R1A1	Rocker	SPDT On-None-On	$1.75	$1.35
R2A1	Rocker	DPDT On-None-On	2.30	1.65
LF1A1	Lever	SPDT On-None-On	1.75	1.35
LE2A1	Lever	DPDT On-None-On	2.30	1.65

LITTEL "MULTI-SWITCH"® SWITCHES



Compact, versatile high-quality, multiple station pushbutton switches. Standard functions available: **Interlock**—actuating a pushbutton automatically restores to normal the pushbutton previously actuated. **Lock-Out**—prevents operation of more than one pushbutton at a time. This feature is included on all interlock frames. **Push-Lock/Push-Release**—pushbuttons locks when depressed and is released when again depressed. Buttons on $^{5}/_{8}$" centers.

SERIES 35000 NON-ILLUMINATED SWITCHES

A Switches mount on panels up to $^{1}/_{8}$" thick. Provides 6PDT switching in .6 sq. in. Narrow rectangular silhouette permits stacking in parallel rows on $^{3}/_{4}$" centers. Only $2^{5}/_{16}$" depth behind panel. End brackets have four 6-32 tapped mounting holes. A square black pushbutton is furnished for each station. Plungers made from .050" x .187" steel will accept std. push-on pushbuttons as well as Switchcraft pushbuttons, Series 590, A-590, C-590, D-590, E-590, 600 and "Glo-Button" pushbuttons Series X, Y, and Z. On **2-C PER STATION** switches, each station includes two No. 83P switch stacks. On **4-C PER STATION** switches, each station includes four No. 83P switch stacks. The following part numbers cover completely assembled and factory tested switches.

Part Numbers/2-C PER STATION						
Interlock with Lock-Out	Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99
35041K-206	35047-206	4	14.36	13.50	12.38	11.25
35061K-206	35067-206	6	20.48	18.90	17.33	15.75
35081K-206	35087-206	8	26.33	24.30	22.28	20.25
35101K-206	35107-206	10	32.18	29.70	27.23	24.75
35121K-206	35127-206	12	38.16	35.22	32.29	29.35
Part Numbers/4-C PER STATION						
35041K-212	35047-212	4	20.61	19.02	17.44	15.85
35061K-212	35067-212	6	29.48	27.21	24.94	22.68
35081K-212	35087-212	8	38.42	35.46	32.51	29.55
35101K-212	35107-212	10	47.32	43.68	40.04	36.40
35121K-212	35127-212	12	56.16	51.84	47.52	43.20

SERIES 37000 SINGLE LAMP ILLUMINATED SWITCHES

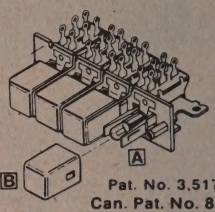
B Identical in switching functions and characteristics as non-illuminated Series 35000, but features large rectangular shaped pushbuttons which serve as a color or legend coded panel indicator light which actuates up to 6PDT switching. Switches mount in parallel rows from 1" centers and up. Depth behind panel $2^{5}/_{16}$". Pushbuttons with large transparent clear display screen and white legend insert, can be hot stamped or engraved, are furnished for switching and release stations. On **2-C PER STATION** switches, each station includes two Nos. 83P switch stacks, one No. H-83P lighting stack and one No. H (convenience) lighting spring. Lighting arrangements such as "L"—pushbuttons light in "IN" position; "M"—pushbuttons light in "OUT" position; and "N"—pushbuttons light in both "IN" and "OUT" positions, can be effected by wiring direct to the No. H-83; and No. H lighting stacks. A single 6V or 28V lamp can be used at each station, not furnished with switch. The following part numbers cover completely assembled and factory tested switches.

Part Number/2-C PER STATION						
Interlock with Lock-Out	Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99
37041K-1206	37047-1206	4	25.61	23.64	21.67	19.70
37061K-1206	37067-1206	6	36.79	33.96	31.13	28.30
37081K-1206	37087-1206	8	48.30	44.58	40.87	37.15
37101K-1206	37107-1206	10	59.54	54.96	50.38	45.80
37121K-1206	37127-1206	12	70.85	65.40	59.95	54.50

DW "MULTI-SWITCH"® SWITCHES

New, economy multiple station pushbutton switch. Max. switching per station is 4-C (D.P.D.T.). Each station utilizes specially designed switching modules with U-shaped, high reliable bifurcated contactors rated at 3 amps, A.C.; 0.5 amp, D.C., 125 V, non-inductive load. DW "Multi-Switch"® switches are available in 5 series: 65000, 67000. All provide standard functions: **Interlock**—actuating a pushbutton automatically restores to normal the pushbutton previously actuated. **Lock-Out**—prevents operation of more than one pushbutton at a time. This feature is included on all interlock switches. **All-Lock**—all pushbuttons, except release, lock when depressed. All pushbuttons restored to normal by actuating (momentary) release pushbutton. **Push-Lock/Push-Release**—pushbuttons lock when depressed and release when again depressed. **All Series**—pushbuttons on $^{5}/_{8}$" centers.

Pat. No. 3,517,140
Can. Pat. No. 882,307



Pat. No. 3,517,140
Can. Pat. No. 882,307

SERIES 65000

Series 65000 switches are completely assembled and tested at the factory. All standard assemblies have 2-C and or 4-C switch modules with solder-lug terminals. Integral black pushbutton-actuators at each station. Eliminates possible pushbutton loss. Mount with only two No. 6 screws (not furnished). Depth behind panel—2-C assemblies—$1^{1}/_{16}$"; 4-C assemblies—$1^{13}/_{16}$". Overall switch height is $^{27}/_{32}$". The following part numbers cover a completed switch assembly. Only the most commonly used switch assemblies are listed here:

Part Numbers/2-C PER STATION							
Interlock with Lock-Out	All-Lock	Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99	100-249
65041K-206	65043-206	65047-206	4	4.40	3.30	3.03	2.75	2.20
65061K-206	65063-206	65067-206	6	6.32	4.74	4.35	3.95	3.16
65081K-206	65083-206	65087-206	8	8.24	6.18	5.67	5.15	4.12
65101K-206	65103-206	65107-206	10	10.20	7.65	7.01	6.38	5.10
65121K-206	65123-206	65127-206	12	12.16	9.12	8.36	7.60	6.08
Part Numbers/4-C PER STATION								
65041K-212	65043-212	65047-212	4	5.28	3.96	3.63	3.30	2.64
65061K-212	65063-212	65067-212	6	7.88	5.76	5.28	4.80	3.84
65081K-212	65083-212	65087-212	8	10.00	7.50	6.88	6.25	5.00
65101K-212	65103-212	65107-212	10	12.40	9.30	8.53	7.75	6.70
65121K-212	65123-212	65127-212	12	14.80	11.10	10.18	9.25	7.40

SERIES 67000

A New illuminated (Series 67000) DW "Multi-Switch"® switches retain all quality construction and reliable switching of Series 65000. Series 67000 has large square pushbutton, B providing brilliant, evenly-diffused lighting. Standard white pushbuttons easily snap-off actuators for simple front-of-panel relamping. Lamp sockets, at each station, accept a single 6V, and/or 28V lamp. Lamp socket terminals separate from switching terminals. Series 67000 mount with only two #6-32 machine screws (not furnished). Two #6-32 tapped studs ("stand offs") are integral with the frame and are used to provide proper positioning of the switches. Depth behind panel $1^{1}/_{2}$" (2-C switching); $2^{1}/_{8}$" (4-C switching). Series 67000 is $1^{1}/_{16}$" high.

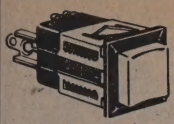
SERIES 67000/2-C PER STATION								
Interlock with Lock-Out	All-Lock	Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99	100-249
67021K-506	67023-506	67027-506	2	3.32	2.49	2.28	2.08	1.66
67041K-506	67043-506	67047-506	4	5.92	4.44	4.07	3.70	2.96
67061K-506	67063-506	67067-506	6	8.56	6.42	5.89	5.35	4.28
67081K-506	67083-506	67087-506	8	11.20	8.40	7.70	7.00	5.60
67101K-506	67103-506	67107-506	10	13.88	10.41	9.54	8.68	6.94
67121K-506	67123-506	67127-506	12	16.52	12.39	11.36	10.33	8.26
SERIES 67000/4-C PER STATION								
Interlock with Lock-Out		Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99	100-249
67021K-512		67027-512	2	3.72	2.79	2.56	2.33	1.86
67041K-512		67047-512	4	6.80	5.10	4.68	4.25	3.40
67061K-512		67067-512	6	9.88	7.41	6.79	6.18	4.94
67081K-512		67087-512	8	13.00	9.75	8.94	8.13	6.50
67101K-512		67107-512	10	16.04	12.03	11.03	10.03	8.02
67121K-512		67127-512	12	19.16	14.37	13.17	11.98	9.58

SERIES 38000 TWIN LAMP ILLUMINATED SWITCHES

B Same compact assembly and versatility as Series 37000, except features twin lamp illumination at each station for redundant or two color, split-face (alternate) lighting. On **2-C PER STATION** switches, each station includes three No. H-83P lighting switch stacks and one No. H lighting spring. This arrangement provides up to 3PDT circuitry. One pole is needed for lighting lamps. Series 38000 accepts standard industry No. 718 flange base lamp. Two at each station. Lamps are not furnished with switch. The following part numbers cover completely assembled and factory tested switches.

Part Numbers/2-C PER STATION						
Interlock with Lock-Out	Push-Lock/ Push-Release	No. of Stations	Ea. 1-9	10-24	25-49	50-99
38041K-1206	38047-1206	4	33.02	30.48	27.94	25.40
38061K-1206	38067-1206	6	47.9₁	44.22	40.54	36.85
38081K-1206	38087-1206	8	63.18	58.32	53.46	48.60
38101K-1206	38107-1206	10	78.00	72.00	66.00	60.00
38121K-1206	38127-1206	12	92.95	85.80	78.65	71.50

U.S. Pat. No. 3,446,467



"UNISWITCH" SWITCH

New, low cost momentary action pushbutton switches. Only 1 1/16" sq. and mount in a single panel cutout, .615" sq. from front of panel. Contacts rated at 250 ma., 30 watts max., A.C. non-inductive load. **Series US** non-illuminated. **Series LUS** illuminated. Use one 6V, 1/2 watt, T-1 3/4 bi-pin lamp. (Not supplied with switch.). Lamps replaced from front of panel. Both switches incorporate a special "Adjusto-Clip" which allows simple, "snap-lock" mounting. The "Uniswitch" switches mount in panels 1 3/16" min. to 1/64" max. thick in .615" sq. holes. Depth behind panel only 15/16" max. "Uniswitch" switches available in 1-A circuit (SPST n.o.).

Part Numbers

Pushbutton Colors							
Red	White	Yellow	Ea. 1-9	10-24	25-49	50-99	100-249
LUS-01-1 US-01-1	LUS-05-1 US-05-1	LUS-08-1 US-08-1	1.68 1.28	1.26 .96	1.16 .88	1.05 .80	.84 .64

"TINY-SWITCH" PUSHBUTTON SWITCHES

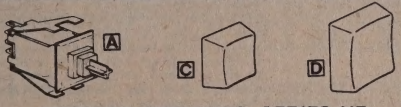
Series 950, red button, and Series 960, black button, sub-miniature pushbutton switches for limited space applications. Integral contacts suitable for low level circuits where contact resistance is not important. Mounts in 1/4" hole in panels up to 3/32" thick; depth behind panel 3/8".

Part Number Red Button	Part Number Black Button	Action	Schematic	Ea. 1-9	10-24	25-49	50-99	100-249
951	961 963	S.P.S.T. n.o. S.P.D.T.	1-A 1-C	1.00 1.24	.75 .93	.688 .853	.625 .775	.50 .62

"BOX SWITCH" SERIES BXR

Miniature non-illuminated momentary pushbutton switch offers broad switching capabilities in minimum panel space. 11/16" square switch mounts in panels up to 9/32" thick and occupies only 17/32" maximum behind panel space. (17/32" less panel thickness.) Molded plastic body protects against dust and dirt; prevents bending/disfiguring of contacts caused by excessive handling. Attractive bezel frames pushbutton and acts as built-in escutcheon plate. Unique "Adjusto-Clip" mounting; provides snap-in, front of panel mounting in panels from 3/64" to 9/32" thick in .615" square holes. Red, black, green, or white pushbuttons with 7/64" button stroke. Integral slide contacts of special spring tempered phosphor bronze, silver-plated, rated at 250 ma., 30 watts max., A.C., non-inductive load. Choose solder lug, quick connect (AMP FASTON Series 110) or P.C. terminals.

Part Numbers Red Button	Black Button	Green Button	White Button	Action	Schem.	Ea. 1-9	10-24	25-49	50-99	100-249
BXR -01-B	BXR -02-B	BXR -03-B	BXR -05-B	DPDT	2-C	3.48	2.61	2.39	2.18	1.74
P.C. TERMINALS										
BXR -01-BPC	BXR -02-BPC	BXR -03-BPC	BXR -05-BPC	DPDT	2-C	3.48	2.61	2.39	2.18	1.74



UNIPUSH SWITCHES, SERIES UP

Low-cost, single-station, pushbutton switches with gold alloy contacts to provide up to 10 million operations (1-10 ma., 4-14 vdc, resistive). Fig. A **Series UP-100:** momentary action, front-of-panel mounting, solder lug quick connect terminals. **Series UP-200:** same as Series UP-100 except P.C. Terminals; 1-A and 2-A switching only. **Series UP-500:** push-lock, push release function, front mounting, solder lug quick connect terminals.

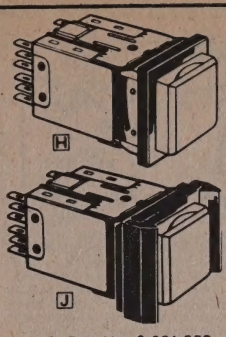
Part No.	Fig.	Circuitry	Ea. 1-9	10-24	25-49	50-99	100-249
UP-101M	A	1-A	1.08	.81	.743	.675	.54
UP-104M	A	2-A	1.24	.93	.853	.775	.62
UP-201M	A	1-A	1.08	.81	.743	.675	.54
UP-204M	A	2-A	1.24	.93	.853	.775	.62
UP-501L	A	1-A	1.28	.96	.88	.80	.64
UP-504L	A	2-A	1.44	1.08	.99	.90	.72
UP-513L	A	1-A & 1-B	1.44	1.08	.99	.90	.72

PUSHBUTTONS, SERIES PB11 AND PB12

Attractive, rugged, square pushbuttons designed for Unipush switches. Fig. C **Series PB11** 11/16" sq. Fig. D **Series PB12** 1/2" sq. Concave pushbutton faces provide positive fingertip "feel."

Part No.	Fig.	Color	Part No.	Fig.	Color
PB11-01	C	Red	PB11-05	C	White
PB11-02	C	Black	PB11-08	C	Yellow
PB11-03	C	Green	PB11-11	C	Grey
PB11-04	C	Blue			

Series No.	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
PB-11	C	.16	.12	.11	.10	.08
PB-12	D	.16	.12	.11	.10	.08

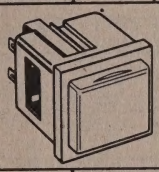


U.S. Pat. No. 3,681,552

SERIES PL "PUSH-LITE" SWITCHES

"Push-Lite" switch is the first completely enclosed, lighted pushbutton switch which features long-life, highly-reliable leaf-spring switching. Available in **momentary** or **push-lock/push-release** functions; single or twin lamps; with or without barriers; full or split-face display; 1-C to 4-C switching; black switch housing. Standard pushbutton color is **white.** Molded crossbar palladium contacts rated at 2 amps, 200 watts, max., A.C., non-inductive load are standard. Mount with clamp-type bracket, no screws, washers or nuts needed. H **Flange** mounting requires 1" x .875" panel cutout; J **barrier** mounting requires 1 3/16" x .875" panel cutout. Can be mounted in vertical or horizontal rows and in matrixes. Depth behind panel only 1 1/4". "Push-Lite" switch accepts standard T-1 3/4 flange base lamps (not furnished with switch) in either 6V or 28V. Specify one lamp for single lamp type or two lamps of twin-lamp type when redundant or split-face lighting is required. Barriers optional.

Momentary Action—Single Lamp Black Housing White Pushbutton	Action	Schematic	Ea. 1-9	10-24	25-49	50-99	100-249
PL-1032-05	S.P.D.T.	1-C	8.56	6.42	5.89	5.35	4.28
PL-1062-05	D.P.D.T.	2-C	8.76	6.57	6.02	5.48	4.38
PL-1122-05	4 P.D.T.	4-C	9.48	7.11	6.52	5.93	4.74
PUSH-LOCK/PUSH-RELEASE—SINGLE LAMP							
PL-1037-05	S.P.D.T.	1-C	9.04	6.78	6.22	5.65	4.52
PL-1067-05	D.P.D.T.	2-C	9.24	6.93	6.35	5.78	4.62
PL-1127-05	4 P.D.T.	4-C	9.96	7.47	6.85	6.23	4.98
PUSH-LOCK/PUSH-RELEASE—TWIN LAMP							
PL-2037-05	S.P.D.T.	1-C	9.96	7.47	6.85	6.23	4.98
PL-2067-05	D.P.D.T.	2-C	10.16	7.62	6.99	6.35	5.08
PL-2127-05	4 P.D.T.	4-C	10.88	8.16	7.48	6.80	5.44



SERIES PL-9000 "PL" INDICATORS

Designed as perfect match for front panel appearance of "Push-Lite" switches—but functions only as a lighted indicator. Create unlimited combinations of rows and/or matrix arrays with or without "Push-Lite" switches. Mounts same as "Push-Lite"; behind panel depth 1 25/64" max. Uses same lamps, color filter snap inserts, light divider, and optional mounting barriers as "Push-Lite" switches.

Part No.	Description	1-9	10-24	25-49	50-99	100-249
PL-9105	Black housing; uses 1 or 2 lamps. White screen.	2.24	1.68	1.54	1.40	1.06

PUSHBUTTONS/INDICATOR SCREENS

Series PL-500 Pushbutton/Indicator Screens are available separately for use with "Push-Lite" or "PL" Indicators for in-the-field substitution and or replacement.

Part No.	Color	1-9	10-24	25-49	50-99	100-249
PL-512	Clear	.20	.15	.138	.125	.10

LIGHT DIVIDER

Light divider for use in standard "Push-Lite" switch pushbuttons and "PL" Indicator screens to separate lighting from twin-lamps. Order a light divider for each switch or indicator specified where split-face lighting is desired.

Switchcraft No.	Ea. 1-9	10 -24	25 -49	50 -99	100 -249
PL-551	.08	.06	.055	.05	.04

OPTIONAL MOUNTING BARRIERS

Barriers, molded of plastic, can be used to separate "Push-Lite" switches, "PL" Indicators, or combinations of "Push-Lite" switches and "PL" Indicators and prevent accidental operation of adjacent switches. **Series PL-100** is an end barrier. One is required when switches are adjacently mounted; two are required when switches are individually mounted. **Series PL-200** is a center barrier. Two are required between switches when adjacently mounted. "Push-Lite" switch J (above) is shown with two. Part No. PL-102 end barriers installed.

Part No.	Description	1-9	10-24	25-49	50-99	100-249
PL-102	End barrier—black	.12	.09	.083	.075	.06
PL-202	Center barrier—black	.12	.09	.083	.075	.06

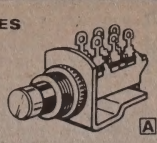
"CORD-SWITCH" SWITCHES

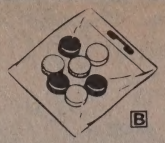
Attractive cord mounted switch for remote control applications. Momentary action. Rated at 250 mils, A.C., non-inductive load, 30 watts max. Part Nos. E-903 and E-913 have bright nickel plated brass housing. Housing dia. 11/16", length 2 3/16".

Part Nos. Red Button	Black Button	Action	Schem.	Ea. 1-9	10-24	25-49	50-99	100-249
E-903	E-913	S.P.D.T. "Break-Make"	1-C	2.40	1.80	1.65	1.50	1.20

Pushbutton, Lever Switches

DVR SWITCH SERIES DVR-2000





Recognition of individual switch positions occurs quickly, even from a distance, with this single station non-illuminated pushbutton switch. With plunger in the "out" position, a black recognition color band contrasts with the recognition cap color. With plunger set to the "in" position, only the colored recognition cap is visible. Special copper alloy, silver plated, U-shaped contactors assure uniform tension. Contactors are rated at 0.5 amp, D.C., 3 amps, A.C., 125 volts, non-inductive load. Threaded bushing mounts in a single-hole .468" ($^{15}/_{32}$") diameter in panels up to $^{1}/_{4}$" thick. Mounting centers are $^{1}/_{4}$" minimum. If non-turn mounting is required, bushing has machined slot to mate with keyed panel hole. Nickel plated copper alloy mounting nut is supplied. [A] Series DVR-2000: 1-C or 2-C circuitry: requires $^{15}/_{32}$" behind panel; 3-C or 4-C circuitry requires $^{21}/_{32}$" behind panel. Solder lug terminals have $^{3}/_{64}$" diameter hole and wrap-around wiring notches. Order Recognition Color Cap Kits for custom color coding according to your individual requirements.

Part No. Momentary (Non-Lock)	Part No. Push-Lock/ Push-Release	Switching	Ea. 1-9	10-24	25-49	50-99	100-249
DVR-2203	DVR-2703	1-C	1.36	1.02	.935	.85	.68
DVR-2206	DVR-2706	2-C	1.58	1.17	1.07	.975	.78
DVR-2212	DVR-2712	4-C	1.96	1.47	1.35	1.23	.98

[B] RECOGNITION COLOR CAP KITS

Part No.	Contents	Ea. 1-9	10-24	25-49	50-99	100-249
K-132	Assortment Kit, 1 ea.: red, black, green, blue, white, brown and yellow caps.	.64	.48	.44	.40	.32

"LITTEL-SWITCH" SWITCHES

Series 100, 200, tiny momentary contact pushbutton switches. Rugged, dependable action. All contacts insulated from panel bushing with interlocking phenolic washers. Series 100 and 200, springs are of nickel silver, recommended only for low level circuits where contact resistance is unimportant. One-piece plastic button and shaft in red or black. Mounts in $^{7}/_{16}$" hole in panels up to $^{1}/_{4}$".

Part Nos. Red Button	Part Nos. Black Button	Action	Schem.	Ea. 1-9	10-24	25-49	50-99	100-249
101	201	S.P.S.T. n.o.	1-A	1.24	.93	.853	.775	.62
103	203	S.P.D.T.	1-C	1.24	.93	.853	.775	.62

"BUTTON-SWITCH" SWITCHES

Series 903, 923. Usually small, momentary action pushbutton switches. Enclosed in metal housing; black or red plastic button. Series 903, Fig. F, back panel mounting; $^{15}/_{32}$" hole, mounts in panels up to $^{19}/_{64}$" thick. Series 923, Fig. G, front panel mounting; $^{1}/_{4}$" hole, mounts in panels up to $^{3}/_{32}$" thick. Both rated at 250 mils, A.C., non-inductive load, 30 watts max.

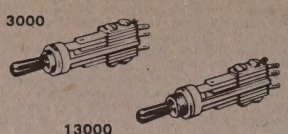
Part Nos. Red Button	Part Nos. Black Button	Action	Schem.	Ea. 1-9	10-24	25-49	50-99	100-249
903	913	S.P.D.T. "Break-Make"	1-C	1.52	1.14	1.05	.95	.76
923	933	S.P.D.T. "Break-Make"	1-C	1.60	1.20	1.10	1.00	.80

NON-LOCKING FLAT FRAME SWITCHES

NF Switches, Series 4000, ideal for mounting in ultra-compact equipment. Only $^{1}/_{2}$" W., $1^{1}/_{8}$" L., mounts in $^{3}/_{8}$" hole in panels up to $^{1}/_{16}$" thick. Flat frame construction provides multiple pole switching with minimum depth behind panel. Fine silver contacts rated at 3 amps, 300 watts max., A.C., non-inductive load. One-piece black button and shaft $^{3}/_{16}$" diameter threaded shank.

SERIES 4000							
Part No.	Action	Schem.	Ea. 1-9	10-24	25-49	50-99	100-249
4001	S.P.S.T. n.o.	1-A	1.44	1.08	.99	.90	.72
4003	S.P.D.T.	1-C	1.56	1.17	1.07	.975	.78
4006	D.P.D.T.	2-C	2.00	1.50	1.38	1.25	1.00

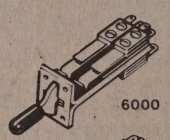
"LEV-R" SWITCHES

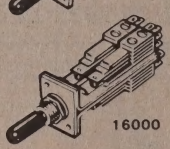


Small lever action switches in two and three position types, locking and non-locking action. Requires half the space usually needed for a lever switch; frame bushing and shaft nickel plated brass. Supplied with locknut and screw-on black knob. Fine silver contacts rated at 3 amps, 300 watts, max., A.C., non-inductive load. Non-locking types have spring return. Series 3000 mounts in panels up to $^{3}/_{32}$" thick; Series 13000 mounts in panels up to $^{1}/_{4}$" thick. Both Series are $^{7}/_{8}$" wide; requires $2^{1}/_{4}$" behind panel; mounts in single $^{1}/_{2}$" dia. hole. *Add suffix letter "L" to Part No. to indicate locking type.

SERIES 3000 TWO POSITION TYPES								
Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Schematic Circuit Pos. 2	Ea. 1-9	10-24	25-49	50-99	100-249
3003	S.P.D.T.	1-C		3.04	2.28	2.09	1.90	1.52
THREE POSITION TYPES								
3034	S.P.S.T. n.o. Ea. Sec.	1-A	1-A	3.40	2.55	2.34	2.13	1.70
3036	S.P.D.T. Ea. Sec.	1-C	1-C	3.84	2.88	2.64	2.40	1.92
30312	D.P.D.T. Ea. Sec.	2-C	2-C	5.16	3.87	3.55	3.23	2.58
SERIES 13000 TWO POSITION TYPES								
13001	S.P.S.T. n.o.	1-A		2.76	2.07	1.90	1.73	1.38
13006	D.P.D.T.	2-C		3.84	2.88	2.64	2.40	1.92
THREE POSITION TYPES								
13036	S.P.D.T. Ea. Sec.	1-C	1-C	4.20	3.15	2.89	2.63	2.10
130312	D.P.D.T. Ea. Sec.	2-C	2-C	5.40	4.05	3.71	3.38	2.70

"TELEVER" SWITCHES



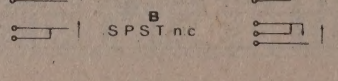


Series 6000 and 16000. Rugged telephone type lever switches featuring "T-Beam" frame construction which results in a relatively light construction with sturdiness of a structural "T-Beam". Available in two and three positions, locking and non-locking types. Nylon rollers on the lever actuate the special nickel silver springs, providing smooth action; assures long dependable spring life. Welded crossbar palladium contacts are standard, rated at 2 amps, 200 watts max., A.C., non-inductive load. Series 6000 mounts with four No. 3-48 machine screws. Mounting centers $^{17}/_{32}$" x $^{13}/_{16}$", mounts in panels up to $^{1}/_{4}$" thick. Series 16000 features single hole mounting; $^{15}/_{32}$"-32 threaded bushing. Mounts in $^{1}/_{2}$" dia. hole in panels up to $^{1}/_{4}$" thick. Part No. 545, "Stop Plate" provides positive "stops" for two position action. Both Series switches supplied with black insulated knob. All have tinned solder-lug terminals. *Add suffix letter "L" to Part No. to indicate locking type. Series 16000 non-locking type can be converted to locking type by removing "Stop Plate".

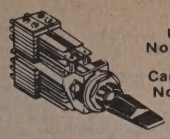
SERIES 6000 TWO POSITION TYPES								
Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Schematic Circuit Pos. 2	Ea. 1-9	10-24	25-49	50-99	100-249
6006	D.P.D.T.	2-C		5.88	4.41	4.04	3.68	2.94
THREE POSITION TYPES								
6036	S.P.D.T. Ea. Sec.	1-C	1-C	5.88	4.41	4.04	3.68	2.94
SERIES 16000 TWO POSITION TYPES								
16006	D.P.D.T.	2-C		6.12	4.59	4.21	3.83	3.06
160012	4 P.D.T.	4-C		8.36	6.27	5.75	5.23	4.18
THREE POSITION TYPES								
16036	S.P.D.T. Ea. Sec.	1-C	1-C	6.12	4.59	4.21	3.83	3.06
160312	D.P.D.T. Ea. Sec.	2-C	2-C	8.36	6.27	5.75	5.23	4.18

BASIC SCHEMATIC CIRCUITS

Switch circuitry can be described as combinations of basic schematic circuits as shown below. N.O. means normally open; N.C. means normally closed.



"LT SWITCH"



U.S. Pat. No. 3,433,906

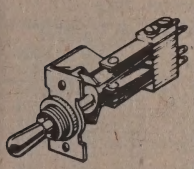
Canadian Pat. No. 850,234

Series 41000. Smallest, high-quality, telephone type lever switch available. Two or three position types with positive locking and/or non-locking action. Special damping block guards against transient leaf bounce. "Can't-Cheat" detent guide prevents accidental actuator by-pass of switching positions. Switch has rigid "U"-shaped, twin girder frame. Its parallel steel members terminate in an interlocked box where spring combinations are mounted. The special long life, nickel-silver springs can be individually fastened to any one of the frame's four switch stacks mounting positions. Welded crossbar palladium contacts rated at 2 amps, 200 watts max., A.C., non-inductive load are standard. Series 41000 mounts on $^{23}/_{32}$" centers in a $^{15}/_{32}$" dia. hole in panels up to $^{1}/_{4}$" thick. Requires only $2\,^{1}/_{8}$" depth behind panel. The bushing includes a keyway to accept the non-turn ring which prevents switch turning or twisting in panel. *Add suffix "L" to Part No. to indicate locking type.

SERIES 41000
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuits Pos. 1	Pos. 2	Ea. 1-9	10-24	25-49	50-99	100-249
41203	S.P.D.T.	1-C		4.68	3.51	3.22	2.93	2.34
41206	D.P.D.T.	2-C		5.88	4.41	4.04	3.68	2.94
41212	4 P.S.T.	4-C		7.96	5.97	5.47	4.98	3.98
THREE POSITION TYPES								
41306	S.P.D.T. Ea. Sec.	1-C	1-C	5.88	4.41	4.04	3.68	2.94
41312	D.P.D.T. Ea. Sec.	2-C	2-C	7.96	5.97	5.47	4.98	3.98
41324	4 P.D.T. Ea. Sec.	4-C	4-C	11.68	8.76	8.03	7.30	5.84

"FEATHER-LEVER" SWITCHES

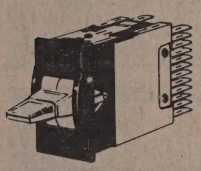


Miniature lever switches, lightweight, compact, mount on $^{7}/_{16}$" centers. Available in 2 and 3 position, locking and non-locking types. Actuator designed with nylon roller for smoother, easy lever operation over entire life of switch. Rugged steel frame withstands rough usage, shock and vibration. Nickel silver springs with fine silver contacts, rated at 2 amperes, 200 watts, max., A.C. non-inductive load. Supplied with black plastic push-on knob. Series 29000, with bushing, mounts in $^{9}/_{16}$" O.D. panel hole. Supplied with locknut. Require only $^{19}/_{32}$" depth behind panel, mount in panels up to $^{1}/_{8}$" thick.

TWO POSITION TYPES

Part No. Non-Locking	Part No. Locking	Action	Schematic Circuit Pos. 1	Pos. 2	Ea. 1-9	10-24	25-49	50-99	100-249
29206	29206L	D.P.D.T.	2-C		3.20	2.40	2.20	2.00	1.60
THREE POSITION TYPES									
29312	29312L	D.P.D.T. Ea. Sec.	2-C	2-C	4.48	3.36	3.08	2.80	2.24

"LEVER-LITE" III* SWITCHES SERIES 84000



"Lever-Lite" III, Series 84000, is the third generation illuminated lever switches which embody the most modern electrical, mechanical, and human factors design concepts. Available in 2- and 3-position types with locking, non-locking, and talk-listen functions. Contact springs are silver plated phosphor bronze. Contacts are welded crossbar palladium rated at 2 amps, 200 watts max., A.C., non-inductive load.

Lever illumination is multi-color, i.e., 2-position switches have AMBER color (NEUTRAL position) and GREEN (DOWN position); 3-position switches have RED (UP position), AMBER (NEUTRAL), and GREEN (DOWN position). Switch uses one, standard T-$1\,^{3}/_{4}$ flange base lamp (not supplied).

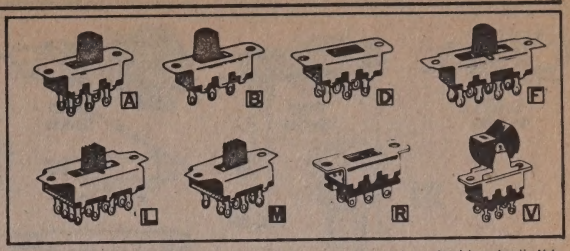
"Lever-Lite" III is mounted, relamped (without tools), terminated, and removed from front of panel. Color filters changeable from front. Terminals are solder lug type, which also accept AMP 110 FASTON.

Mounting hole is $^{7}/_{8}$" x $1\,^{1}/_{2}$". Behind panel dimensions are $1\,^{3}/_{8}$" H. x $^{3}/_{4}$" W. x $1\,^{13}/_{16}$" D. maximum.

SERIES 84000
TWO POSITION TYPES

Part No. Non-Locking*	Action	Schematic Circuit Pos. 1	Pos. 2	Ea. 1-9	10-24	25-49	50-99	100-249
84206	D.P.D.T.	2-C		8.24	6.18	5.67	5.15	4.12
THREE POSITION TYPES								
84312	D.P.D.T. Ea. Sec.	2-C	2-C	10.16	7.62	6.99	6.35	5.08

*Add suffix "L" to part number to indicate locking type.



Series 46000R, 49000, 50000, 51000R, low-cost, precision "double-wipe" slide switches. Switches use special U-shaped, bifurcated sliders to assure continuous wiping action. Contacts rated at 0.5 amp, D.C., 3 amps, A.C., 125 volts, non-inductive load. Standard solder lug terminals have a $^{3}/_{64}$" dia. center hole and wrap-around notch for wiring ease. Most switches furnished with black $^{11}/_{32}$" knob and .140" ($^{9}/_{64}$") dia. mounting holes. Nos. 46206LFR, 46256LFR flush screwdriver actuated knob. All slide and rocker switches are U.L. approved unless otherwise noted.

New Phase III Switches, Series 46000E, high performance switches, feature glass filled nylon terminal boards, allowing excellent mechanical stability, high leakage resistance, the ability to withstand high temperatures, flame retardance, and self extinguishing characteristics. Standard knob color is black. Terminal holes in solder lug are .070" x .085" and accept wires as large as #14 AWG. Series 46000E, are U.L. and C.S.A. listed.

SERIES 46000R AND 46000E
2 AND 3 POSITION GENERAL PURPOSE TYPE

Series 46000R rated at 3 amps, A.C., 0.5 amp, D.C., 125 volts, non-inductive load. Nos. 46206LFR and 46256LFR feature a flush screwdriver slotted knob. All Series 46000R U.L. listed. Series 46000E, 2 position types with locking or momentary functions. U.L. and C.S.A. listed. Rated at 0.5 amp, D.C., 3 amps, A.C., 125 volts, non-inductive load. Unless otherwise indicated, switches have non-shorting contacts and black nylon knob with serrated crown. Nos. 46256LFE have flush actuators.

Three position types with positive center detent action. All have shutter type dust cover to prevent dirt and dust from contaminating switch contacts. Series 46300LDR type—locking in all positions.

Part No.	Action	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
46202LR	S.P.S.T. Locking	A	.52	.39	.358	.325	.26
46203LR	S.P.D.T. Locking	A	.56	.42	.385	.35	.28
46206LFR	D.P.D.T. Locking	D	.76	.57	.523	.475	.38
46206LR	D.P.D.T. Locking	A	.64	.48	.44	.40	.32
46206MR	D.P.D.T. Momentary	B	.88	.66	.605	.55	.44
46256LFE	D.P.D.T. Locking	R	.88	.66	.605	.55	.44
46256LFR	D.P.D.T. Locking	D	.80	.60	.55	.50	.40

Part No.	Circuitry	Action Positions #1	Center	#2 Locking	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
46311LDR	S.P.T.T.	L		L	F	.76	.57	.523	.475	.38
46313LDR	D.P.T.T.	L		L	F	.80	.60	.55	.50	.40

SERIES 49000
3 POSITION GENERAL PURPOSE TYPE

Large, heavy duty 3 and 4 pole slide switches. Knob height $^{1}/_{2}$". Mounting holes $^{9}/_{64}$". Series 49000L, non-shorting, U.L. listed as approved.

Part No.	Action	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
49309L	3 P.D.T. Locking	L	1.72	1.29	1.18	1.08	.86
49312L	4 P.D.T. Locking	L	1.76	1.32	1.21	1.10	.88

SERIES 50000 2 POSITION GENERAL PURPOSE TYPE

Series 50000L, non-shorting contacts; U.L. listed.

2 POSITION GENERAL PURPOSE TYPE

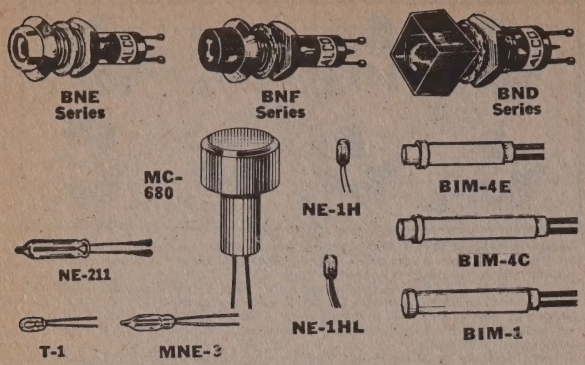
Part No.	Action	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
50209L	3 P.D.T. Locking	M	1.12	.84	.77	.70	.56
50212L	3 P.D.T. Momentary	M	1.16	.87	.798	.725	.58

SERIES 51000R
2 POSITION ROCKER SWITCHES

Compact rocker switches offer same quality and dependability as standard slide switches. Rocker pivot mounting allows free actuation of switch mechanism. Black rocker knobs. Series 51000R has rugged rocker bracket, precision welded to standard flush switch housing. U.L. listed. Black nylon rocker knobs have legend areas and serrations on operating faces. U.L. and C.S.A. listed.

2 POSITION ROCKER SWITCHES

Part No.	Action	Schem.	Fig.	Ea. 1-9	10-24	25-49	50-99	100-249
51202LR	S.P.S.T. Locking	II	V	.98	.72	.66	.60	.48
51204LR	D.P.S.T. Locking	2-I	V	1.04	.78	.715	.65	.52
51206LR	D.P.D.T. Locking	2-III	V	.81	.743	.875	.54	.513



NEON PILOT LIGHT ASSEMBLIES

BNE Series—Compact lens assembly protrudes slightly above panel; mounts with single 5/16"-32 nut. Operates from 75 VDC without resistor, 115 VAC with resistor (150K for standard intensity, 33K for high intensity); resistor not supplied unless otherwise indicated. Temperature range, −10° C to +70° C. **BNF Series**—Similar to BNE, but with long lens assembly extending further beyond panel for brighter illumination. **BND Series**—Similar to above series, but with square lens assembly; mounts in 3/8" hole. Specify red, amber, clear or white for all models.

Alco No.				Net Each, Lots of			
BNE-	BNF-	BND-	Description	1-24	25-99	100-499	500-999
2	2	2	Std. intensity	$1.04	$0.71	$0.62	$0.52
.....	.....	2R	With inter. resis.	1.09	.74	.65	.55
3	3	3	High intensity	1.09	.74	.65	.55
.....	.....	3R	With inter. resis.	1.19	.81	.71	.60
4R	4R	.....	With inter. resis.	1.19	.81	.71	.60

BRITE GLO® INCANDESCENT LAMPS

Ultraminiaturized series mounts in a 3/16" hole. Available with 5 V at 60 mA rated lamps having 100,000 hours life. Model ME-680 can be used for PC boards. Specify red, white, green, blue or yellow (amber for ME Series). With #683 T-1 lamp and mounting rings.

ME-680	With pin contacts	$1.29	$0.88	$0.77	$0.65
ME-680LT*	With 6" insulated leads	1.39	.95	.83	.70
MC-680	With pin contacts	1.49	1.01	.89	.75
MC-680LT*	With 6" insulated leads	1.59	1.08	.95	.80

*Solder tin dipped, hi-temp leads, 24 AWG wire.

PANEL MOUNTED ASSEMBLIES

Model PLN-100 incorporates the crater electrode T-1 3/8 MNE-4L in a black phenolic case. Model PL-105 is ultraminiature in size, a mate to PLN-100. With 10" insulated leads, mt. in 1/4" hole.

PLN-100A	Neon lamp	$0.99	$0.67	$0.59	$0.50
PL-105	Incandescent lamp	.89	.61	.53	.45

EXTRA LONG NEON LAMP

Replaces readout tubes in "overrange" position of digital voltmeters; also usable as "+" or "−" display or where a longer light source than a conventional NE-2 is needed. Bare leads. **Breakdown:** 90 VDC. **Maintained Voltage:** 65 VDC. **Design Current:** 1.3 mA. **Life:** 2,000–8,000 hours.

NE-211	11 mm glow	$0.49	$0.33	$0.29	$0.25
NE-214	14 mm glow	.69	.47	.41	.35

HIGH INTENSITY NEON LAMP

High intensity lamp with lens end magnification. Ignition voltage, 60 VAC or 67 VDC. Recommended 33K ohms ballast resistor at 115 VAC.

NE-1H	With short bare leads	$0.69	$0.47	$0.41	$0.35
NE-1-HL	With 10" insulated leads	.79	.54	.47	.40

SNAP-FIT 110-125 V NEON LIGHT INDICATORS

Unit snapfits into 5/16" mounting hole. Has built-in 30K resistor. Leads, approx. 6" long with heavy insulation, withstand temperatures up to 105° C. Models BIM-1, BIM-1B lenses extend only .075" from panel front. Models BIM-4C, BIM-4E have elongated lens for better side illumination, extend .338" from panel front. Acrylic lens, nylon body. Specify color: Red, amber, clear. UL Listed.

BIM-1	**Long body, White trim**	$0.79	$0.54	$0.47	$0.40
BIM-1B	**Long body, Black trim**	.79	.54	.47	.40
BIM-4C	**Long body, Chrome trim**	.84	.57	.50	.42
BIM-4E	**Short body, Chrome trim**	.84	.57	.50	.42
BIM-W	**Ring fastener**	.....	.....	2.50/c	2.00/c

MINIATURE T-1 1/8 NEON LAMPS

Alco's smallest neon lamp is unique for its size and brilliance. Ignition voltage, 75 VAC or 95 VDC; current should be limited to 800 μA; 150K series resistor recommended for 115 V operation, 180K for 220 V operation. Light output variations possible with changes in voltage or series resistance, with resultant changes in life expectancy of 10,000 hours. Bare leads.

Alco No.	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
MNE-3	Standard intensity	$0.59	$0.40	$0.35	$0.30

NEON LAMP HOLDERS

Low-cost snap type holders for miniature neon lamps such as NE-2; available in five different sizes for particular panel thicknesses; write for details. Specify red, amber or clear; supplied less lamps.

BNG-51, 52, 53, 54, 55	Snap-type neon lamp holder	$0.25	$0.17	$0.15	$0.13

INCANDESCENT LAMP HOLDERS

Relampable miniature holders have 3/8" dia. lens. **MCM-100** is .7" long and mounts with 5/16"-32 nut; for use with No. 685, 718, 1112 or 856 lamp, below. **MCM-175** is 1" long and mounts with 3/8"-32 nut; for use with No. 815, 381, 330, 382, 327 or 387 lamp, below. Specify red, green, amber, blue or white lens.

MCM-100T	Subminiature flange holder	$1.49	$1.01	$0.89	$0.74
MCM-175T	Miniature flange holder	1.69	1.15	1.01	.85

INCANDESCENT LAMP ASSEMBLY

Relampable assembly comes with #680 T-1 lamp (see below); lens unscrews to expose lamp. Specify red, green, blue, yellow or white lens.

BFK-5	Incandescent assembly	$1.79	$1.22	$1.07	$0.90

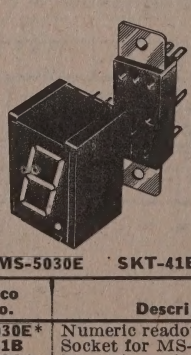
INCANDESCENT LAMPS

Designed for applications where space is at a premium and long life is required. Current ratings are ±10%.

Alco No.	Size	Current, Amps	MSCP	Net Each, Lots of 1-9	10-99	100-499	500-999
5-VOLT TYPES							
680-AS15	T-1†	.060	.032*	$1.03	$0.67	$0.52	$0.44
680-AS25	T-1†	.060	.032	.78	.51	.39	.34
683-AS15	T-1†	.060	.053*	1.03	.67	.52	.44
683-AS25	T-1†	.060	.053	.78	.51	.39	.34
713-AS15	T-1†	.075	.088*	1.03	.67	.52	.44
713-AS25	T-1†	.075	.088	.78	.51	.39	.34
715-AS15	T-1†	.115	.147*	1.03	.67	.52	.44
715-AS25	T-1†	.115	.147	.78	.51	.39	.34
RM3-5V30	T-1†	.030	.030	.56	.36	.28	.24
685	T-1‡	.060	.050	1.28	.83	.64	.55
718	T-1‡	.115	.147	1.28	.83	.64	.55
815	T-1 3/4§	.115	.147	.86	.56	.43	.37
6.3-VOLT TYPES							
2181	T-1 3/4†	.200	.400	$0.49	$0.32	$0.25	$0.21
381	T-1 3/4§	.200	.400	.86	.56	.43	.37
379	T-1 3/4#	.200	.400	.73	.47	.37	.31
378	T-1 3/4•	.200	.400	.95	.62	.48	.41
14-VOLT TYPES							
1112	T-1‡	.065	.150	$1.28	$0.83	$0.64	$0.55
2182	T-1 3/4†	.080	.300	.49	.32	.25	.21
330	T-1 3/4§	.080	.500	.83	.54	.42	.36
382	T-1 3/4§	.080	.300	.86	.56	.43	.37
386	T-1 3/4#	.080	.300	.73	.47	.37	.31
362	T-1 3/4•	.080	.300	.95	.62	.48	.41
28-VOLT TYPES							
856	T-1‡	.024	.150	$2.65	$1.72	$1.33	$1.14
327	T-1 3/4§	.040	.340	.78	.51	.40	.34
387	T-1 3/4§	.040	.300	.83	.54	.42	.36
388	T-1 3/4#	.040	.300	.73	.47	.37	.31
399	T-1 3/4•	.040	.300	.95	.62	.48	.41

* ±15%. †Wire terminals. ‡Subminiature flange. §Miniature flange base. #Miniature grooved base. •Miniature screw base.

INCANDESCENT READOUT INDICATORS



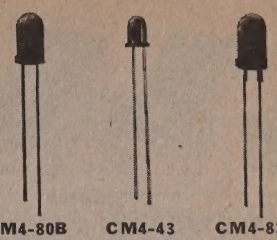
MS-5030E SKT-41B

MS-5030E—Seven-segment plug-in display, molded phenolic housing has large, well styled characters with bright, wide angle view. Reads out numeral plus decimal. Character size, 0.79" high. Case size, .795" w. x .870" d. x 1.30" h. Uses 5 volts at 30 mA per segment. Order socket separately. **MS-250A**—Smaller version of above readouts. With socket and plastic housing. Uses 2.5 V lamps at 20 mA/segment; current drain, 40 mA min. Power consumption, 160 mA min., 400 mA max.

Alco No.	Description	Net Each, Lots of 1-24	25-99	100-499
MS-5030E*	Numeric readout w/decimal	$5.25	$4.46	$3.94
SKT-41B	Socket for MS-5030E	.48	.41	.36
MS-250A*	Numeric readout w/socket	8.25	7.01	6.19
MS-250S*	Symbol readout w/socket	8.25	7.01	6.19

*Add either suffix **R** for red filter or **C** for clear filter.

LED Indicators



CM4-7000, CM4-8000 SERIES RED T-1¾ SOLID STATE SUBMINIATURE LED INDICATORS

CM4-7 Series bi-pin and CM4-8 Series midget flange LED indicators interchangeable with industry standard T-1¾ incandescent lamps. Available with clear or red, transparent or translucent (diffused) epoxy lens. Bi-pin base has nylon shell, gold-plated nickel pins. Midget flange base has nickel-plated brass shell, phenolic insulator and solder contact. **Luminous Intensity:** 2.0 mcd at 20 mA. **Wavelength:** 660 nM at peak. **Size, CM4-7000 Bi-pin:** .230″ dia. max. x .625″ long, plus two .25″, .020″ dia. gold plated leads. **CM4-8000 Midget Flange:** .245″ dia. lens, .285″ dia. flange, .625″ long.

CM4-7000 SERIES BI-PIN BASE

Operating Range Volts, DC	mA @ Max. Volts	Transparent Red CM4-	Transparent Clear CM4-	Translucent Red CM4-	Translucent Clear CM4-
1.4– 1.7	50	7025*	7027*	7026*	7028*
1.7– 3.0	50	7001	7013	7007	7019
3.0– 5.0	50	7002	7014	7008	7020
5.0–10.0	30	7003	7015	7009	7021
10.0–14.0	20	7004	7016	7010	7022
14.0–18.0	15	7005	7017	7011	7023
18.0–28.0	10	7006	7018	7012	7024

CM4-8000 SERIES MIDGET-FLANGE BASE

1.4– 1.7	50	8025*	8027*	8026*	8028*
1.7– 3.0	50	8001	8013	8007	8019
3.0– 5.0	50	8002	8014	8008	8020
5.0–10.0	30	8003	8015	8009	8021
10.0–14.0	20	8004	8016	8010	8022
14.0–18.0	15	8005	8017	8011	8023
18.0–28.0	10	8006	8018	8012	8024

*Requires external current limiting resistor.

QUANTITY NET PRICES FOR ABOVE

Net Each, Lots of						
1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
$1.47	$1.38	$1.23	$0.99	$0.93	$0.88	$0.83

CM44 SERIES SOLID-STATE LED CARTRIDGE INDICATORS RED-AMBER-GREEN

LED cartridge indicators in red, amber and green have two transparent cap styles (short cylindrical or round capt) utilizing an internal fresnel ring pattern for optimum visibility. Red GaAsP LED provides typical peak wavelength of 660 nM, Yellow GaP LED—600 nM, Green GaP—560 nM. CM44 available in variety of brightness, color and cap styles; rated voltages available in 10 and 20 mA, although only 20 mA is listed in table. Black anodized aluminum housing, black nylon insulator, stainless steel pins. Further information available on request. Size: .330″ dia. x 1.140″ long, max.

RED LED CARTRIDGE INDICATORS

CML No.	Rated		Net Each, Lots of						
CM44-	Volts	mA	1-9	10-24	25-99	100-249	250-399	500-999	1000-2499
110261	1.6	20*	$1.70	$1.63	$1.47	$1.36	$1.25	$1.15	$1.07
110311	3.6	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110021	5.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110041	10.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110061	14.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110081	18.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110101	28.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07

AMBER LED CARTRIDGE INDICATORS

110273	2.2	20*	$1.70	$1.63	$1.47	$1.36	$1.25	$1.15	$1.07
110333	3.6	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110123	5.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110143	10.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110163	14.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110183	18.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110203	28.0	20	1.70	1.63	1.47	1.37	1.25	1.15	1.07

GREEN LED CARTRIDGE INDICATORS

110282	2.2	20*	$1.70	$1.63	$1.47	$1.36	$1.25	$1.15	$1.07
110352	3.6	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110212	5.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110222	10.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110232	14.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110242	18.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07
110252	28.0	20	1.70	1.63	1.47	1.36	1.25	1.15	1.07

†CML Nos. listed are for short cylindrical cap style. To order round cap, change first digit after 44 from 1 to 2 (e.g., **CM44-210011: Round cap, red transparent**). *Requires external current limiting resistor.

CM4-20, CM4-21, CM4-22, CM4-23 RED

Each unit supplied with snap-in mounting clip for panel mounting. Rigid terminals allow device to be connected in a variety of ways, soldered, welded or wire-wrapped, as well as being pluggable. Tin-plated leads. Choice of clear and red lenses, transparent or translucent. **Power Dissipation:** 180 mW (derate 2.0 mW/° C above 25° C). **Forward Voltage:** 1.6 volts typical at 20 mA, 2.0 volts max. **Reverse Voltage:** 3 volts. **Storage and Operating Temperature:** −55° C to +100° C. **Wavelength** 660 nM at peak. **Turn On and Turn Off Time:** 50 ns. **Soldering Time at 260° C:** 5 seconds. **Size:** .190″ dia. x .340″ length, plus two .55″ leads. **Hole for mounting clip:** ¼″ dia. **Max. Panel Thk.:** ⅛″.

CML No.	Lens Tint	Lens Diffusion	Luminous Int. @ I_F = 20 mA Typical	Viewing Angle Typical
CM4-20	Clear	Transparent	2.0 mcd	90°
CM4-21	Clear	Diffused	1.6 mcd	90°
CM4-22	Red	Transparent	1.6 mcd	90°
CM4-23	Red	Diffused	0.4 mcd	180°

Net Each, Lots of: 1–99 ..... **$0.52**
100–999 ..... **$0.35**; 1000–Up ..... **.32**

CM4-43B RED

The red diffused lens and T-1 size make the CM4-43B the perfect choice for high-density array and indicator applications. **Luminous Intensity:** 1.0 mcd at 20 mA. **Peak Wavelength:** 660 nM. **Power Dissipation:** 100 mW (derate 1.3 mW/°C above 25° C). **Forward Voltage:** 1.6 volts typical at 20 mA., 2.0 volts max. **Reverse Voltage:** 5.0 volts. **Turn On and Turn Off Time:** 50nS. **Size:** 0.120″ dia. max. x 0.2″ length, plus two 1.00″ min. leads.
No. CM4-43B—Net Each, Lots of: 1–99 ..... **$0.58**
100–999 ..... **$0.38**; 1000–Up ..... **.35**

CM4-50 SERIES RED

Small size, gallium arsenide phosphide light-emitting diode packaged in a planer configuration for use on circuit boards or where size and low cost are major considerations. Clear epoxy lens for uniform brightness. Tin-plated leads can be bent at a right angle and inserted through the holes of a PC board for dip or wave soldering. **Power Dissipation:** 80 mW (derate 1.0 mW/°C for CM4-50; 1.6 mW/°C for CM4-53). **Forward Voltage:** 1.6 volts typical at 20 mA, 2.0 volts max. **Reverse Voltage:** 3 volts. **Storage/Operating Temperature:** −55° C to +100° C. **Wavelength:** 660 nM at peak. **Turn On/Turn Off Time:** 50 ns. **Soldering Time at 260° C:** 5 sec. **Size:** .100″ dia. x .100″ h. Length, including leads, .6″ min.

CML No.	Lens Tint	Lens Diffusion	Luminous Int. at I_F = 20 mA Typical	Net Each, Lots of 1-99	100-999	1000-Up
CM4-50	Clear	Transparent	1.4 mcd	$0.29	$0.20	$0.18
CM4-53	Red	Diffused	1.0 mcd	.25	.17	.15

CM4-80B SERIES RED

Red gallium arsenide phosphide light-emitting diodes. Variety of lens styles and luminance intensities widens design choice. **Power Dissipation:** 180 mW (derate 2.0 mW/°C. above 25°C). **Forward Voltage:** 1.7 volts typical at 20 mA, 2.2 volts max. **Reverse Voltage:** 5.0 volts. **Wavelength:** 660 mM at peak. **Turn On and Turn Off Time:** 50nS. **Size:** 0.2″ dia. x 0.340″ length plus two 0.75 leads.

CML No.	Lens Tint	Lens Diffusion	Luminous Int. @ I_F = 20mA. Typical	Viewing Angle Typical
CM4-80B	Clear	Transparent	2.0 mcd	50°
CM4-81B	Clear	Diffused	1.6 mcd	72°
CM4-82B	Red	Transparent	2.0 mcd	50°
CM4-84B	Red	Diffused	1.6 mcd	80°
CM4-85B	Red	Diffused	0.8 mcd	110°
CM4-86B	Red	Diffused	0.8 mcd	150°

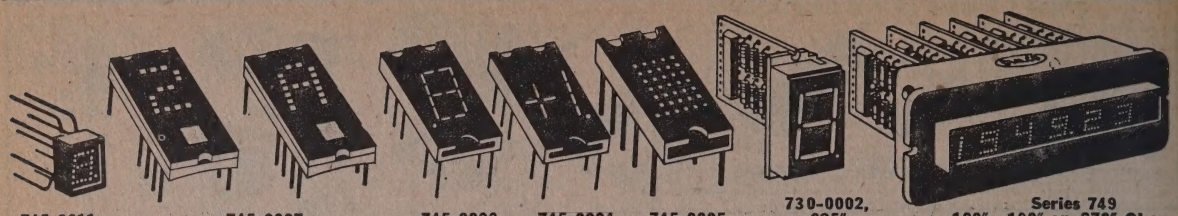
Net Each, Lots of 1–99 ..... **$0.52**
100–999 ..... **$0.35**; 1000–Up ..... **.32**

CM4-83 RED

The red diffused lens and T-1¾ size are ideally suited for panel and back-lighting applications. **Luminous Intensity:** 2.0 mcd at 10 mA. **Wavelength:** 660nM. **Power Dissipation:** 180 mW (derate 2.0 mW/°C above 25° C), **Forward Voltage:** 1.6 volts typical at 20 mA, 2.2 volts max. **Reverse Voltage:** 3.0 volts. **Turn On and Turn Off Time:** 50nS. **Size:** 0.2″ dia x 0.34″ length, plus two 0.85″ leads.
No. CM4-83—Net Each, Lots of 1–99 ..... **$0.34**
100–999 ..... **$0.23**; 1000–Up ..... **.21**

DIALIGHT LED READOUTS AND ACCESSORIES

DIALCO®



745-0011 745-0007 745-0006 745-0004 745-0005 730-0002, .625" Series 749 .100", .190" or .270" Char.

MODEL 745-0011 DIODE-LITE® READOUT
(CHARACTER HEIGHT .100")

Single digit readout module designed for use in hand operated; portable or desk top instruments such as calculators, data terminals, test equipment and status indicators. Solid state, extremely long life and high reliability. Highly legible bright red characters read at 3 to 5 ft.; wide 140° viewing angle. Fully encapsulated, withstands rough production handling and user environments. Variable brightness; compact, 12 digits in less than 3" panel width; IC compatible. **Forward Voltage:** 1.65 volts at 5 mA. **Peak Wavelength:** 660 nM bright red. **Reverse Voltage:** 3 V. **Operating Temperature Range:** −20° C to +100° C. **Size:** Overall, .220" w. x .125" d. x .270" h.; digit, .090" w. x .125" h. **Characters:** 0 to 9 with decimal point.

SERIES 745 READOUTS, HEXADECIMAL DISPLAY
(CHARACTER HEIGHT .270")

Compatible with most TTL and DTL circuits. Standard 14 or 16 pin DIP. Gallium arsenide phosphide light source, single-plane wide angle visibility. Available with left or right decimal. **Reverse Voltage at 25° C Ambient:** 6 volts, each segment; 3 volts, decimal point. **Peak Forward Current:** 75 mA. **Continuous Forward Current:** Each segment or decimal point, 30 mA; total for 745-0006, 240 mA; total for 745-0004, 150 mA. **Luminance:** 550 fL. typical. **Wavelength at Peak Emission:** 6500° A. **Static Forward Voltage:** 3.2 V typ. **Ambient Temperature Range:** 0° to 70° C. **Size:** 745-0006, overall, .400" w. x .120" d. x .740" h.; digit, .187" w. x .270" h. 745-0004, overall, .400" w. x .120" d. x .740" h.; digit, .270" h.; plus sign, .130" w. x .170" h. **Characters:** 745-0006, 0 to 9, five special functions and blank (total 16); 745-0006 has decimal point to left. 745-0004, plus-minus one with a decimal point. Model 745-0007 has hexadecimal display with left and right hand decimals. Model 745-0008 has numeric display with left hand decimal including latch. Model 745-0009 has numeric display, left hand decimal, plus counter and latch.

MODEL 745-0005 ALPHA-NUMERIC DISPLAY
(CHARACTER HEIGHT .300")

Gallium arsenide phosphide display mounted on a 14 pin dual inline substrate and cast within an electrically non-conductive transparent epoxy. High brightness, low power requirements, single-plane wide-angle visibility, compatible with USASCII and EBCDIC codes. Complete alpha-numeric and symbol capability, 35 dot matrix. 5 x 7 array with X-Y select and decimal point. **Reverse Voltage at 25° C Ambient:** 3 volts. **Peak Forward Current:** Each diode, 100 mA. **Continuous Forward Current:** Each diode, 20 mA; total, 400 mA. **Luminance:** 300 fL typical. **Wavelength at Peak Emission:** 6500° A typ. **Static Forward Voltage:** 1.6 V typ. **Ambient Temperature Range:** 0° to 70° C. **Size:** Overall, .400" w. x .120" d. x .740" h. **Characters:** Alpha-numeric with decimal point.

SERIES 730 DIODE-LITE READOUTS
(CHARACTER HEIGHT .625")

Unique lens design in seven segment format results in bright highly legible red characters with lowest cost per character for comparable size. Available in green on special request. **Model 730-0002:** Decoder/driver requires four lines or bits of information in a 8421 BDC code for each character in display. Terminals are brought out on PC board where user has the option of wiring directly to it or using an edge connector, automatic blanking of leading and/or trailing edge zeros, resulting in easily readable displays. Display malfunction can be checked by built-in lamp-test. Model 730-0002 includes decimal point. **Models 730-0004 and 730-0005:** These units require a resistor for each LED. Resistor value is 180 ohms ¼ watt for 5 volts operation. 730-0004 includes decimal point, 730-0005 is plus-minus one module with decimal point. **Model 730-0011:** Plus-minus one module with decimal point with resistors. **Model 730-1002:** Readout with decoder/driver. **Model 730-1005:** Plus-minus. **Model 730-1011:** Plus-minus with PC board. SPECIFICATIONS: **Supply Voltage per Character (Typical):** 730-0002, 5 V at 175 mA; 730-0004, 5V at 120 mA; 730-0005 and 730-0011, 5V at 105 mA; 730-1002, 5 V at 281 mA; 730-1005, 5 V at 175 mA; 730-1011, 5 V at 175 mA. **Logical Inputs:** Four lines of BCD per character. **Logic "1":** 2.4–5.5 volts. **Logic "0":** 0–.8 volt sink mA. **Operating Temperature:** 0–70° C. **Size:** .688" w. x .473" d. x 1.375" h. all models; Model 730-0002 with 1.589" x 1.062" h., decoder/driver; Model 730-0011 with 1.589" x 1.062" h. resistors card.

SERIES 730 FOR BEZEL ASSEMBLY MOUNTING

Same as Series 730 above, but mounts in Series 733 bezel assembly.

730-0007—Same as 730-0002. **730-1007**—Same as 730-1002.
730-0009—Same as 730-0004. **730-1009**—Same as 730-1004.
730-0010—Same as 730-0005. **730-1010**—Same as 730-1005.
730-0012—Same as 730-0011.

SERIES 733 BEZEL ASSEMBLIES

Dialco No.	*	Panel Cutout†	Mtg. Ctrs.	Dialco No.	*	Panel Cutout†	Mtg. Ctrs.
733-0002	2	1.570"	1.906"	733-0007	7	5.010"	5.346"
733-0003	3	2.258"	2.594"	733-0008	8	5.698"	6.034"
733-0004	4	2.964"	3.282"	733-0009	9	6.386"	6.722"
733-0005	5	3.634"	3.970"	733-0010	10	7.074"	7.410"
733-0006	6	4.322"	4.658"				

*No. of characters. †Height of panel cutout, 1.114", all models.

SERIES 749 READOUT ASSEMBLIES
(CHARACTER HEIGHT .100", .190", .270" & .300")

The 749 Series displays are supplied with a stylish black bezel for simplified panel mounting of multi-digit groupings. The displays feature bright, highly legible characters in a 7-segment format, .100", .190", and .270" in height. The alphanumeric display is a 5 x 7 dot matrix, with a .300" high character. When supplied with decoder/drivers, latch and counters, all components are either mounted on a PC board, or provided as an integral MSI chip, with terminations provided for automatic blanking of leading and/or trailing edge zeros and for intensity control. The user has the option of hard wiring to the board or using edge card connectors.

Dialco Number	Characters	Dimensions A"	Dimensions B"	Dialco Number	Characters	Dimensions A"	Dimensions B"
749-0701	1	.958	1.259	749-0601	1	1.100	1.401
749-0702	2	1.379	1.680	749-0602	2	1.663	1.964
749-0703	3	1.800	2.101	749-0603	3	2.226	2.527
749-0704	4	2.221	2.522	749-0604	4	2.787	3.088
749-0705	5	2.642	2.943	749-0605	5	3.352	3.653
749-0706	6	3.063	3.364	749-0606	6	3.915	4.216
749-0707	7	3.484	3.785	749-0607	7	4 478	4.779
749-0708	8	3.905	4.206	749-0608	8	5.041	5.342
749-0709	9	4.326	4.627	749-0609	9	5.603	5.904
749-0710	10	4.747	5.048	749-0610	10	6.167	6.488

A = panel cutout, B = mounting centers
Dimensions also apply to 749-08xx & 749-12xx. Dimensions also apply to 749-09xx.

Dialco Number	Dialco Number	Characters	Dimensions A"	Dimensions B"
749-0101	749-0201	1	.899	1.218
749-0102	749-0202	2	.899	1.218
749-0103	749-0203	3	1.587	1.906
749-0104	749-0204	4	1.587	1.906
749-0105	749-0205	5	2.275	2.594
749-0106	749-0206	6	2.275	2.594
749-0107	749-0207	7	2.963	3.282
749-0108	749-0208	8	2.963	3.282
749-0109	749-0209	9	3.651	3.970
749-0110	749-0210	10	3.651	3.970

A = panel cutout, B = mounting centers
Dimensions also apply to 749-10xx and 749-11xx.

SERIES 749 READOUT ASSEMBLIES

Character Height	Description	Complete* Assembly Series No.	Module Part No.	Bezel No.* for use with Modules	Modified Modules for Individual Mounting
.100"	Display w/Decoder	749-01xx	740-0023	743-00xx	740-0021
.190"	Display w/Decoder	749-02xx	740-0024	743-00xx	740-0022
.270"	Display w/Decoder/Driver	749-06xx	740-0006	743-10xx	740-0005
.270"	Display	749-07xx	745-0006	743-20xx	—
.270"	Display w/Decoder/Driver & Latch	749-09xx	740-0012	743-10xx	740-0011
.100"	Display w/Decoder & Latch	749-10xx	740-0029	743-00xx	—
.190"	Display w/Decoder & Latch	749-11xx	740-0030	743-00xx	—
.270"	Hexadecimal Display w/Latch, Decoder/Driver	749-12xx	745-0007	743-20xx	—
.300"	Alphanumeric	749-08xx	745-0005	743-20xx	—

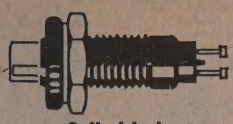
*The last two digits are determined by the number of digits in the assembly.

CHECK WITH YOUR DISTRIBUTOR FOR PRICING ON THESE PRODUCTS.

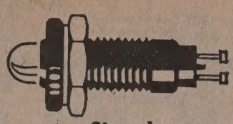
DIALIGHT LED Indicator Lights

DIALCO®

SERIES 249



Cylindrical



Stovepipe

SERIES 507

Cylindrical

Datalamp Holder

Stovepipe

249 SERIES ULTRAMINIATURE INDICATOR LIGHTS WITH RED, GREEN OR YELLOW DIODE-LITES (LED)

Complete solid state indicator package consisting of light source, housing and lens, ready for permanent panel mounting. Light source is a solid state (LED) lamp that provides the advantages of low power with extremely long life measured in years. Compatible with IC's (can be driven directly by RTL, DTL and TTL logic). Unique lens design uses an internal fresnel ring to assure maximum distribution of the light output. Positive terminal is marked "+" for proper installation. Mounting bushing and flange ring are black anodized aluminum; terminals are low carbon steel, solder plated; lens is high strength plastic. Size: 7/8" behind panel (including 3/16" terminals); 3/8"-32 threaded body with 1/2" hex nut; fits panels to 5/16" thick. Lens, 9/32" dia. x 3/16".

SERIES 249 WITH RED LED

VDC at 20 mA	Lens Color	Dialco Lens No.		Net Each, 1-9*
		Short Cylindrical	Short Stovepipe	
3.6	Red	249-7867-3331-504	249-7867-3731-504	$2.70
3.6	White	249-7867-3335-504	249-7867-3735-504	2.70
3.6	Clear	249-7867-3337-504	249-7867-3737-504	2.70
5	Red	249-7868-3331-504	249-7868-3731-504	2.70
5	White	249-7868-3335-504	249-7868-3735-504	2.70
5	Clear	249-7868-3337-504	249-7868-3737-504	2.70
6	Red	249-7869-3331-504	249-7869-3731-504	2.70
6	White	249-7869-3335-504	249-7869-3735-504	2.70
6	Clear	249-7869-3337-504	249-7869-3737-504	2.70
10	Red	249-7870-3331-504	249-7870-3731-504	2.70
10	White	249-7870-3335-504	249-7870-3735-504	2.70
10	Clear	249-7870-3337-504	249-7870-3737-504	2.70
14	Red	249-7871-3331-504	249-7871-3731-504	2.70
14	White	249-7871-3335-504	249-7871-3735-504	2.70
14	Clear	249-7871-3337-504	249-7871-3737-504	2.70
28	Red	249-7872-3331-504	249-7872-3731-504	2.92
28	White	249-7872-3335-504	249-7872-3735-504	2.92
28	Clear	249-7872-3337-504	249-7872-3737-504	2.92

SERIES 249 WITH GREEN LED

Green white or clear transparent lens available. To order white or clear transparent lens use Part Nos. listed above for Series 249 with red LED and change 4th and 5th digits from 78 to **79** (e.g., 249-**79**67-3335-504). For green transparent lens use following Part Nos.:

VDC	Short Cylindrical	Short Stovepipe
3.6	249-7967-3332-504	249-7967-3732-504
5	249-7968-3332-504	249-7968-3732-504
6	249-7969-3332-504	249-7969-3732-504
10	249-7970-3332-504	249-7970-3732-504
14	249-7971-3332-504	249-7971-3732-504
28	249-7972-3332-504	249-7972-3732-504

SERIES 249 WITH YELLOW LED

Yellow, white or clear transparent lens available. To order white or clear transparent lens use Part Nos. listed above for Series 249 with red LED and change 4th and 5th digits from 78 to **80** (e.g., 249-**80**67-3335-504). For yellow transparent lens use following Part Nos.:

VDC	Short Cylindrical	Short Stovepipe
3.6	249-8067-3333-504	249-8067-3733-504
5	249-8068-3333-504	249-8068-3733-504
6	249-8069-3333-504	249-8069-3733-504
10	249-8070-3333-504	249-8070-3733-504
14	249-8071-3333-504	249-8071-3733-504
28	249-8072-3333-504	249-8072-3733-504

★QUANTITY PRICING

249 AND 507 SERIES WITH RED LED

Series	VDC	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
249	3.6–14	$2.70	$2.39	$2.21	$2.04	$1.88	$1.73	$1.58
249	28	2.92	2.59	2.41	2.21	2.04	1.89	1.72
507	3.6–14	1.87	1.66	1.53	1.41	1.30	1.19	1.09
507	28	2.07	1.83	1.69	1.55	1.43	1.32	1.20

249 AND 507 SERIES WITH GREEN OR YELLOW LED

249	3.6–14	$2.96	$2.62	$2.44	$2.24	$2.06	$1.91	$1.74
249	28	3.21	2.85	2.65	2.44	2.24	2.08	1.90
507	3.6–14	2.07	1.83	1.68	1.55	1.43	1.32	1.20
507	28	2.27	2.01	1.87	1.70	1.57	1.45	1.33

Cartridge Connector—Ask for No. **515-0050** or **515-0012.**
Speed Clip—Ask for No. **515-0051.**

507 SERIES DATALAMP CARTRIDGES WITH RED, GREEN OR YELLOW SOLID STATE DIODE-LITES

Light source is a solid state lamp that provides the advantages of low power with extremely long life and reliability. IC compatible; interchangeable with standard incandescent cartridges. Oper. temperature, −55° to +60° C. For operation directly from RTL, DTL or TTL logic, the 10 mA cartridge is recommended; for optimum brightness, the 20 mA cartridge is recommended. Unique lens design features an internal fresnel ring to assure maximum distribution of light output. Polarity is marked on housing; terminal base is keyed. Housing is black anodized aluminum for high contrast; connections are stainless steel pins mounted in nylon insulated header, offset for polarization; lens is high strength plastic, permanently attached. Cartridge may be mounted with Datalamp Holder or cartridge connector with speed clip (listed below). Size, .284" dia. x 1.140" max. overall (including .203" terminals).

20 mA DATALAMP CARTRIDGES WITH RED LED

VDC	Lens Color	Dialco Lens No.		Net Each, 1-9*
		Short Cylindrical	Short Stovepipe	
3.6	Red	507-4756-3331-500	507-4756-3731-500	$1.87
3.6	White	507-4756-3335-500	507-4756-3735-500	1.87
3.6	Clear	507-4756-3337-500	507-4756-3737-500	1.87
5	Red	507-4757-3331-500	507-4757-3731-500	1.87
5	White	507-4757-3335-500	507-4757-3735-500	1.87
5	Clear	507-4757-3337-500	507-4757-3737-500	1.87
6	Red	507-4758-3331-500	507-4758-3731-500	1.87
6	White	507-4758-3335-500	507-4758-3735-500	1.87
6	Clear	507-4758-3337-500	507-4758-3737-500	1.87
10	Red	507-4759-3331-500	507-4759-3731-500	1.87
10	White	507-4759-3335-500	507-4759-3735-500	1.87
10	Clear	507-4759-3337-500	507-4759-3737-500	1.87
14	Red	507-4760-3331-500	507-4760-3731-500	1.87
14	White	507-4760-3335-500	507-4760-3735-500	1.87
14	Clear	507-4760-3337-500	507-4760-3737-500	1.87
28	Red	507-4761-3331-500	507-4761-3731-500	2.07
28	White	507-4761-3335-500	507-4761-3735-500	2.07
28	Clear	507-4761-3337-500	507-4761-3737-500	2.07

20 mA DATALAMP CARTRIDGES WITH GREEN LED

Green, white or clear transparent lens available. To order white or clear transparent lens use Part Nos. listed above for Series 507 with red LED and change 4th and 5th digits from 47 to **48** (e.g., 507-**48**56-3335-500). For green transparent lens use following Part Nos.:

VDC at 20 mA	Short Cylindrical	Short Stovepipe
3.6	507-4856-3332-500	507-4856-3732-500
5	507-4857-3332-500	507-4857-3732-500
6	507-4858-3332-500	507-4858-3732-500
10	507-4859-3332-500	507-4859-3732-500
14	507-4860-3332-500	507-4860-3732-500
28	507-4861-3332-500	507-4861-3732-500

20 mA DATALAMP CARTRIDGES WITH YELLOW LED

Yellow, white or clear transparent lens available. To order white or clear transparent lens use Part Nos. listed above for Series 507 with red LED and change 4th and 5th digits from 47 to **49** (e.g., 507-**49**56-3335-500). For yellow transparent lens use following Part Nos.:

VDC at 20 mA	Short Cylindrical	Short Stovepipe
3.6	507-4956-3333-500	507-4956-3733-500
5	507-4957-3333-500	507-4957-3733-500
6	507-4958-3333-500	507-4958-3733-500
10	507-4959-3333-500	507-4959-3733-500
14	507-4960-3333-500	507-4960-3733-500
28	507-4961-3333-500	507-4961-3733-500

Series 507 Datalamp Cartridges also available at 10 mA. Write for complete information.

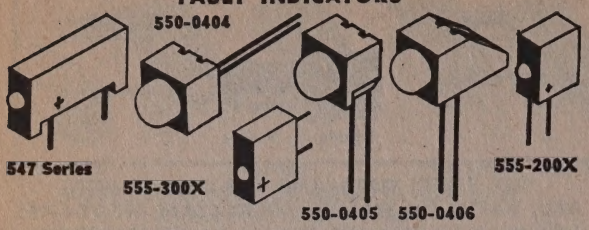
DATALAMP HOLDERS FOR 507 SERIES

Black anodized mtg. bushing, collar, flange nut; gold plated phosphor bronze terminals. Series 508 has collar (33/64" dia. x 9/32"); extends 57/64" behind panel. Series 250 has no collar, extends 1 1/32". Mount in 3/8" hole in panels to 9/32" thick.

Dialco No.	Terminals	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
508-8738-504	Turret	$1.82	$1.52	$1.38	$1.16	$1.05	$0.94	$0.84
508-7538-504	Cup†	1.82	1.52	1.38	1.16	1.05	.94	.84
508-7438-504	Blade†	1.51	1.26	1.13	.97	.89	.79	.71
508-9038-504	Taper*	2.99	2.55	2.39	2.07	1.92	1.72	1.48
250-8738-14-504	Turret	1.65	1.37	1.25	1.05	.97	.85	.79
250-7538-14-504	Cup†	1.65	1.37	1.25	1.05	.97	.85	.79
250-7438-14-504	Blade†	1.32	1.10	.99	.84	.75	.67	.61
250-9038-14-504	Taper*	2.81	2.40	2.25	1.94	1.85	1.64	1.42
515-0051	Speed Clip	.15	.13	.12	.08	.07	.06	.05
515-0012	Connector	.91	.75	.65	.54	.47	.42	.39

*Amp "53" taper pin receptacle. †Solder type.

DIODE-LITE® LED LOGIC/STATE FAULT INDICATORS



SERIES 547 FAULT INDICATOR

Compact, versatile unit may be used as a fault indicator for trouble shooting complex printed circuit cards, as logic/state indicator, or indicator light. Binary data display permits stacking so multiple functions can be displayed. Features gallium arsenide phosphide LED; identified polarity; built-in series resistor. Can be driven directly from DTL and TTL logic. Gold plated leads. Size, .094″–.098″ w. x .540″ d. overall x .248″ h. Pin length, .150″.

Dialco No.	Volts	mA	Dialco No.	Volts	mA
547-2001	1.7*	. . . . .	547-2005	10.0	14
547-2002	3.6	20	547-2006	14.0	10
547-2003	5.0	6	547-2007	5.0	3
547-2004	5.0†	16			

Dialco No.	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
547-2001 Red	$1.95	$1.81	$1.70	$1.57	$1.45	$1.33	$1.20
547-2002 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23
547-2003 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23
547-2004 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23
547-2005 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23
547-2006 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23
547-2007 Red	1.99	1.85	1.74	1.61	1.48	1.36	1.23

SERIES 550 SOLID STATE LED RED, GREEN, YELLOW DIFFUSED LIGHT SOURCE

Ideal for indicator light, panel illumination, logic/state indicator, binary data display. Allows for high density packaging. Polarity identified. Model 550-0x06 designed for installations where a more rigid assembly is required. V_F: 1.8 volts typical at 50 mA, 2.3 volts max. I_F: 50 mA max. V_R: 3 volts max. BV_R: 3.0 volts min. at 10 μA, 8.0 volts typical. **Power Dissipation:** 100 mW (derate 1.3 mW/° C above 25° C). **Storage Operating Temp.:** −40° to +100° C. **Solder Temp.:** 250° C at 0.1″ from seating plane for 5 seconds. **Luminous Intensity:** 2.0 mcd at 20 mA. **Wavelength:** Red 650 nM, Green, 560 nM, Yellow 580 nM at peak. **Rise and Fall Time:** 10 ns for 10–90% of light.

Dialco No.	Net Each, Lots of 1-99	100-999	1000-2499
550-0204 Green	$1.19	$0.88	$0.80
555-0205 Green	1.19	.88	.80
550-0206 Green	1.19	.88	.80
550-0304 Yellow	1.19	.88	.80
550-0305 Yellow	1.19	.88	.80
550-0306 Yellow	1.19	.88	.80
550-0404 Red	.59	.45	.39
550-0405 Red	.59	.45	.39
550-0406 Red	.59	.45	.39
550-0504 Red*	.89	.73	.62
550-0505 Red*	.89	.73	.62
550-0506 Red*	.89	.73	.62

*Built-in series resistor.

SERIES 555 LOGIC/STATE FAULT INDICATOR

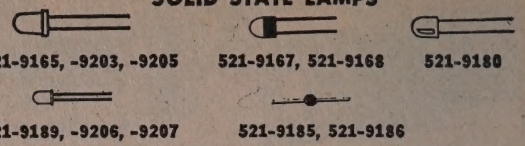
Use as fault indicator for trouble shooting complex circuits, logic/state indicator, indicator light, or binary data display. High intensity red diffused light. Gallium arsenide phosphide LED. Polarity identified. Built-in series resistor. Size, .100″ w. x .240″ d. x .250″ h. Lead length, .281″ min. Lamp, .080″ diameter.

Dialco No.	Volts	mA	Dialco No.	Volts	mA
555-2001 Red	1.7	*	555-3001 Red	1.7	*
555-2002 Red	3.6	20	555-3002 Red	3.6	20
555-2003 Red	5.0	6	555-3003 Red	5.0	6
555-2004 Red	5.0†	16	555-3004 Red	5.0†	16
555-2005 Red	10.0	14	555-3005 Red	10.0	14
555-2006 Red	14.0	10	555-3006 Red	14.0	10
555-2007 Red	5.0	3	555-3007 Red	5.0	3

Dialco No.	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
555-2001 Red	$1.00	$0.91	$0.83	$0.76	$0.69	$0.63	$0.57
555-2002 Red	1.11	1.01	.92	.84	.76	.69	.62
555-2003 Red	1.11	1.01	.92	.84	.76	.69	.62
555-2004 Red	1.11	1.01	.92	.84	.76	.69	.62
555-2005 Red	1.11	10.1	.92	.84	.76	.69	.62
555-2006 Red	1.11	1.01	.92	.84	.76	.69	.62
555-2007 Red	1.11	1.01	.92	.84	.76	.69	.62
555-3001 Red	1.10	1.00	.91	.84	.76	.69	.63
555-3002 Red	1.22	1.11	1.01	.92	.84	.76	.68
555-3003 Red	1.22	1.11	1.01	.92	.84	.76	.68
555-3004 Red	1.22	1.11	1.01	.92	.84	.76	.68
555-3005 Red	1.22	1.11	1.01	.92	.84	.76	.68
555-3006 Red	1.22	1.11	1.01	.92	.84	.76	.68
555-3007 Red	1.22	1.11	1.01	.92	.84	.76	.68

*Requires external resistor. Maximum DC forward current, 50 mA. Typical operating current, 20 mA. †For higher brightness, can be operated at 6 V at 20 mA.

SERIES 521 DIODE-LITES® SOLID STATE LAMPS



High luminance light sources offer longer lamp life, lower current at low cost. For applications requiring direct mounting through a panel. IC compatible; vibration and shock resistant; wide viewing angle. Solid state reliability, with life measured in years. Consist of a light emitting diode, completely encapsulated, with clear or diffused lens. Light source for Nos. 521-9167 and 521-9168 is contained in a black case, giving excellent contrast when "On", yet appearing black when "Off". The 521-9165 base has a flat on one side which gives the device an antirotation feature as well as indicating which lead is the cathode. Leads are flexible enough for bending and rigid enough for direct mounting to a PC board. **Forward Voltage:** 1.8 volts typical at 50 mA, 2.3 volts max. **Forward DC Current:** 50 mA max. **Reverse Voltage:** 3 volts max. **Reverse Breakdown Voltage:** 3.0 volts minimum at 10 μA, 8.0 volts typical. **Power Dissipation:** 100 mW (derate 1.3 mW/° C above 25° C). **Storage/Operating Temperature:** −40° to +100° C. **Relative Humidity:** 98% at 65° C. **Solder Temperature:** 250° C at 0.1″ from seating plane for 5 seconds. **Luminous Intensity:** 2.0 mcd at 20 mA, except 521-9167, 521-9168, 1.0 mcd; 521-9189, 1.35 mlumen. **Wavelength:** red, 650 nM; green, 560 nM; yellow, 580 nM. **Spectral Line Width:** 25 nM. **Rise and Fall Time:** 10 ns for 10–90% of light intensity for step change in current. **Angle of Half Intensity:** 35°. **Angle of 0.1 Intensity:** 85°.

Dialco No.	Diffusion	Lens Size, In. Dia.	Lens Size, In. Height	Net Each, Lots of 1-99	100-999	1000-2499
521-9165	Red	.192	.240	$0.50	$0.37	$0.33
521-9166	Clear	.192	.240	.50	.37	.33
521-9167	Red	.190–.210	.190	.59	.45	.39
521-9168	Clear	.190–.210	.190	.59	.45	.39
521-9180	Red	.185	.190	.50	.37	.33
521-9185	Red*	.120	.100	.45	.25	.17
521-9186	Red	.120	.100	.45	.25	.17
521-9189	Red	.125	.190	.29	.19	.15
521-9190	Clear*	.192	.240	.50	.37	.33
521-9200	Red	.192	.240	.28	.21	.17
521-9202	Green*	.192	.240	.99	.75	.55
521-9203	Green	.192	.240	.99	.75	.55
521-9204	Yellow*	.192	.240	.99	.75	.55
521-9205	Yellow	.192	.240	.99	.75	.55
521-9206	Green	.120	.190	.99	.75	.55
521-9207	Yellow	.120	.190	.99	.75	.55
521-9215	Red†	.120	.190	.75	.60	.50
521-9216	Red	.120	.190	.29	.19	.15
521-9217	Red	.200	.340	.30	.21	.17
521-9179	Red	.200	.340	.50	.37	.33
521-9183	Red†	.200	.340	.75	.60	.50
521-9184	Clear*†	.200	.340	.75	.60	.50
521-9195	Red	.120	.100	.62	.50	.39
521-9214	Red	.192	.240	.56	.42	.34

*Non-diffused, balance diffused. †Rated 5 V with integral resistor.

SERIES 558 AND 559 DIODE-LITES®

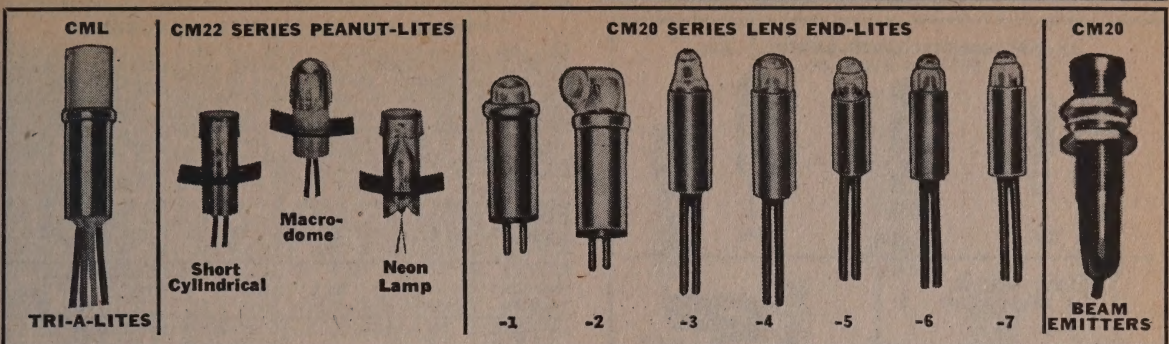
Snap-in mounting design requires no additional hardware and provides quick positive insertion in panels from .031″ through .062″. The black housing enhances the contrast ratio of the high brightness LED. Available with and without integral current-limiting resistors. **Mounting Hole Size:** Series 558, .156″ dia.; Series 559, .250″ dia. **Mounting Centers:** Series 558, 0.2″; Series 559, 0.3″. **Terminals:** .020″ sq. pins for wire wrap or solder.

TYPICAL RESISTOR VALUES SERIES 558 AND 559 W/O RESISTOR

DC	Red		Green/Yellow	
Volt.	R_L @ 10 mA	R_L @ 20 mA	R_L @ 10 mA	R_L @ 20 mA
3.6	200Ω	100Ω	150Ω	75Ω
5	330Ω	180Ω	330Ω	150Ω
6	430Ω	220Ω	390Ω	180Ω
10	820Ω	390Ω	820Ω	390Ω
14	1200Ω	620Ω	1200Ω	620Ω
28	2700Ω	1300Ω	2700Ω	1300Ω

Dialco No.	LED Color	Integral Resistor	Net Each, Lots of 1-9	10-99	100-999	1000-2499
558-0101-001	Red	No	$0.75	$0.60	$0.40	$0.33
558-0102-001	Red	Yes	1.00	.85	.65	.58
558-0201-001	Green	No	1.10	.95	.75	.65
558-0202-001	Green	Yes	1.40	1.25	.95	.85
558-0301-001	Yellow	No	1.10	.95	.75	.65
558-0302-001	Yellow	Yes	1.40	1.25	.95	.85
559-0101-001	Red	No	.75	.60	.40	.33
559-0101-003*	Red	No	1.13	.98	.84	.71
559-0102-001	Red	Yes	1.00	.85	.65	.58
559-0102-003*	Red	Yes	1.47	1.27	1.09	.92
559-0201-001	Green	No	1.10	.95	.75	.65
559-0201-003	Green	No	1.49	1.29	1.11	.94
559-0202-001	Green	Yes	1.40	1.25	.95	.85
559-0202-003*	Green	Yes	2.02	1.75	1.50	1.27
559-0301-001	Yellow	No	1.10	.95	.75	.65
559-0301-003*	Yellow	No	1.49	1.29	1.11	.94
559-0302-001	Yellow	Yes	1.40	1.25	.95	.85
559-0302-003*	Yellow	Yes	2.02	1.75	1.50	1.27

Panel Indicators



CML SERIES TRI-A-LITES

A unique indicator device that appears white in the off position and turns red, green, or yellow when an input voltage is applied to one of the color coded lead wires. Uses type T-¾ lamps rated at 5V, .115A/lamp, 15,000 hours average life. Unit mounts in a 1⁹⁄₆₄″ clearance hole with 10380 mounting clip (supplied). Housed in clear anodized aluminum with translucent polycarbonate cap. Terminates in 24 AWG stranded wire, color coded, end stripped leads. CML 9501-RGY has flush style white cap; CML 9601-RGY has a short cylindrical style white cap. Optional features are other color combinations, different lead length, hot stamped legends, and black anodized housings.

CML Number CML-	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499	500-999
9501 or 9601-RGY	$7.06	$6.48	$6.02	$5.33	$4.83	$4.28

CM22 SERIES PEANUT-LITES

Versatile, low-cost indicator assemblies with incandescent or neon lamps. Ideal for stereo amplifiers, mobile equipment, instrumentation, computer and display panels, etc. Incandescent types have high-temperature polycarbonate shells with T-1¾ lamps and 6″ wire leads, permanently potted in place for strain relief. Available in two cap styles, macrodome (Type CM22-1) or short cylindrical (Type CM22-2). Type CM22-1000 Peanut-Lites include T-2 neon lamps which snap into place in butyrate shells. All types include speed clips for mounting.

HOW TO ORDER: Insert two digits in CML number, replacing **XX**, to indicate cap color: **01**, clear transparent; **02**, red transparent; **03**, amber transparent; **04**, green transparent (incandescent types only); or **05**, white translucent. CM22-1000-01-A1A (NE-2) has clear transparent short cylindrical cap with NE-2 neon lamp.

WITH T-1¾ INCANDESCENT LAMP

Size: .340″ dia. x .800″ long; #24 AWG wire leads, 6″ long. Type B lead insulation per MIL-W-16878. Semi-resilient thermosetting resin encapsulant. Numbers shown are for macrodome cap; for short cylindrical cap, change **1** in CML number to **2**; e.g., CM22-**2**-XX-15; prices are the same.

CML Number* CM22-	Volts	Amps	M.S. C.P.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
1-XX-15	1.35	.06	.01	500	$1.14	$1.05	$0.97	$0.86
1-XX-17	2.5	.20	.22	500	1.14	1.05	.97	.86
1-XX-18	2.7	.06	.04	6,000	1.14	1.05	.97	.86
1-XX-43	3.0	.015	.004	10,000	1.88	1.73	1.61	1.42
1-XX-50	3.0	.03	.02	1,800	1.49	1.35	1.27	1.11
1-XX-41	5.0	.06	.05	100,000	1.14	1.05	.97	.86
1-XX-12	6.0	.04	.03	10,000	1.08	.99	.91	.81
1-XX-06	6.0	.20	.63†	1,000	1.14	1.05	.97	.86
1-XX-52	6.3	.20	.55	3,000	1.02	.94	.87	.77
1-XX-27	6.3	.04	.02	50,000	1.24	1.14	1.07	.95
1-XX-19	6.3	.075	.22	500	1.14	1.05	.97	.86
1-XX-13	6.3	.20	.40	50,000	1.43	1.32	1.22	1.08
1-XX-20	6.3	.20	.55	3,000	1.14	1.05	.97	.86
1-XX-07	10.0	.014	.002	10,000	1.02	.94	.87	.77
1-XX-08	10.0	.04	.08	5,000	1.08	.99	.91	.81
1-XX-28	14.0	.08	.30	50,000	1.24	1.14	1.07	.95
1-XX-09	14.0	.08	.50	750	1.02	.94	.87	.77
1-XX-10	18.0	.04	.15	10,000	1.39	1.28	1.19	1.05
1-XX-40	28.0	.04	.30	25,000	1.20	1.10	1.02	.90
1-XX-29	28.0	.04	.30	25,000	1.24	1.14	1.07	.95
1-XX-11	28.0	.04	.34	7,000	1.20	1.10	1.02	.90
1-XX-45	28.0	.06	.34	25,000	1.20	1.10	1.02	.90

WITH T-2 NEON LAMP

Short cylindrical cap. Size: .370″ dia. x .850″ long; Dumet wire leads. For 105–125 VAC. **Series Resistance Required:** A1A, 200K ohms; A9A, 62K ohms; C2A, 22K ohms.

CML Number* CM22-1000-	Nominal mA	Nominal Watts	Aver. Life, Hours	Net Each, Lots of* 1-9	10-49	50-99	100-499
6140-100-603	1.0	1/10	5000	$0.31	$0.29	$0.26	$0.23
6141-100-603	2.0	1/4	5000	.31	.29	.26	.23

*See How To Order information above and insert two digits in CML no. as indicated. †At 5 volts.

CM20 SERIES SUBMINIATURE LENS END-LITES

Subminiature end-lites produce axially centered spots for minimal adjustment problems and easy lamp replacement. Ideal for close proximity use with photo sensors, where an intense spot of luminous and infrared energy is required. Typical applications include encoders, tape sensors, card readers and optical scanners. Types CM20-1, -2, -17 and -19 have clear anodized aluminum cartridge body; stainless steel terminals (CM20-19 #24 AWG stranded wire leads); nylon insulation. Types CM20-3 thru -7 and -20 have gold anodized aluminum shell; #24 AWG stranded wire leads; Type B insulation per MIL-W-16878; semi-resilient thermosetting resin encapsulation. Types CM20-5 thru CM20-7 are small enough to be mounted on .250″ centers for card reader applications. **Spot Specifications:** CM20-1, -19: When projected ⅜″ from end of bulb, spot covers ⅛″ dia. target, concentric with long axis at minimum intensity of 750 ft.-candles. CM20-2: When projected 1″ from end of bulb, spot covers 1″ dia. target with minimum of 350 ft.-candles. CM20-3: When projected ¾″ from end of bulb, spot covers 1⁄16″ dia. target concentric with sleeve; intensity ⅜″ from bulb is minimum of 750 ft.-candles; spot is narrow elliptical. CM20-4: Same as CM20-3 except covers ⅛″ dia. target; spot is "round" elliptical. CM20-5 thru -7, -20 have no spot specifications, but have axially aligned lamp; CM20-17 spot is axially aligned with housing.

CML No.	Lamp Type	V	Amps (±10%)	Aver. Life, Hours	Net Each, Lots of* 1-9	10-49	50-99	100-499
CM20-1	TL-1¾	2.5	.350	10,000	$2.75	$2.55	$2.27	$2.05
CM20-2	SL-2	2.5	.325	10,000	5.17	4.81	4.25	3.85
CM20-3	TL-1¾	2.5	.350	10,000	2.82	2.63	2.32	2.10
CM20-4	TL-1¾	2.5	.350	10,000	3.43	3.19	2.83	2.56
CM20-5	TL-1¼	2.5	.200	1,000	2.75	2.55	2.27	2.05
		2.1	.180	10,000				
CM20-6	TL-1¼	6.0	.200	1,000	2.57	2.39	2.11	1.91
		5.1	.180	10,000				
CM20-7	TL-1¼	28.0	.040	1,000	2.64	2.45	2.17	1.97
		24.0	.036	10,000				
CM20-17	TL-1¾	5.0	.180	10,000	4.68	4.35	3.84	3.48
CM20-19	CM20-1 with 6″ leads				3.45	3.21	2.84	2.57
CM20-20	TL-1¾	5.0	.180	10,000	5.19	4.82	4.27	3.86

CM20 SERIES BEAM EMITTERS

Compact assemblies designed to project narrow cones of infrared and luminous energies over distances of 3″ to 20″. Spots produced are round, varying from ⅜″ to 1¼″. Infrared outputs are approximately 75% of input power, ideal for integration with silicon type sensors. Low power consumption (782 mW), axially aligned spots, easy mounting and long life. **Volts:** 2.3. **Current:** .340 amps, ±10%. **Average Life:** 10,000 hours. **Construction:** Anodized aluminum housing, #24 AWG wire leads, semi-resilient thermosetting resin encapsulation. **Size:** .475″ dia.; CM20-8-01, 1.33″ long; CM20-9-01, 2.08″ long.

CML Number	Focal Distance	Projected Spot Dia.	Net Each, Lots of* 1-9	10-24	25-49	50-99
CM20-8-01	7″–9″	1¼″–1¾″	$22.56	$19.97	$18.08	$11.18
CM20-9-01	14″–16″	1″–1⅓″	26.05	23.05	20.86	12.90

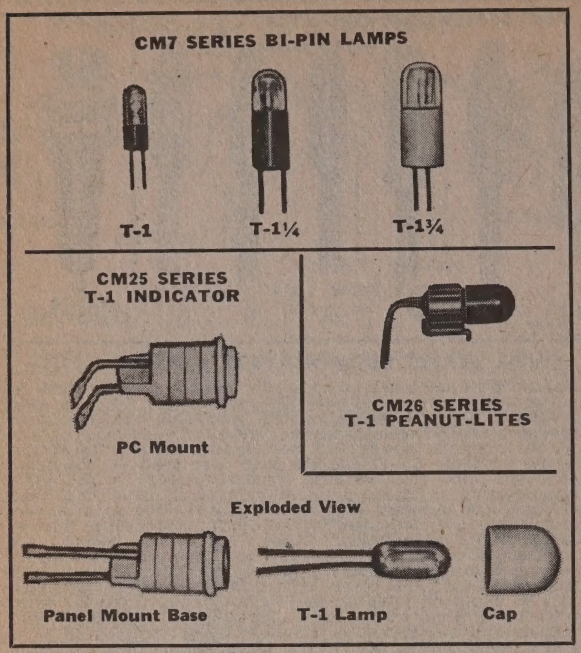
CM39 SERIES LAMP FILTERS (Not Illus.)

Slip-on filters are translucent, precision molded silicone rubber caps; for subminiature and miniature lamps. They assume basic lamp contours, are impervious to color shift. Replaceable and reusable. Temperature range, −62° to +225° C. **TO ORDER:** Add suffix to CML Number to indicate color: **-1**, red; **-2**, blue/white; **-3**, clear; **-4**, amber; **-5**, green; **-6**, blue; **-7**, yellow.

CML Number	Lamp Size	Size, In. Dia. x L.	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
CM39-02	T-¾	.090 x .230	$0.29	$0.27	$0.25	$0.22	$0.20
CM39-03	T-1	.096 x .3125	.29	.27	.25	.22	.20
CM39-04	T-1	.096 x .219	.29	.27	.25	.22	.20
CM39-05	T-1¼	.175 x .265	.29	.27	.25	.22	.20
CM39-06	T-1¾	.214 x .375	.29	.27	.25	.22	.20
CM39-07	T-1¾	.218 x .3125	.29	.27	.25	.22	.20
CM39-08	T-1¼	.325 x .279	.29	.27	.25	.22	.20
CM39-09	T-2	.250 x .522	.29	.27	.25	.22	.20
CM39-10	T-2	.250 x .272	.29	.27	.25	.22	.20
CM39-11	T-3¼	.370 x .672	.38	.35	.33	.29	.26
CM39-12	S-6	.584 x 1.120	.38	.35	.33	.29	.26

★WRITE FOR PRICES ON LARGER QUANTITIES

Panel Indicators



CM7 SERIES BI-PIN INDICATOR LAMPS

High quality, low cost incandescent lamps fit CM21 sockets below. Available with variations (right angle leads, flying leads, etc.) or with commercial or aviation color coating, on special order. Write for information.

T-1 BI-PIN INDICATOR LAMPS

Size: .130″ dia. x .350″ long; .020″ dia. pins, .190″ long.

CML No. CM7-	Volts	Amps	M.S. C.P., Approx.	Aver. Life, Hours	Net Each, per Pkg. of 10	100	500
7680	5.0	.06	.03	100,000	$1.78	$1.56	$1.34
7683	5.0	.06	.05	100,000	1.78	1.56	1.34
7714	5.0	.075	.09	25,000	1.78	1.56	1.34
7715	5.0	.115	.15	40,000	1.78	1.56	1.34
8095	10.0	.027	.10	10,000	2.76	2.42	2.07
8097	12.0	.06	.15	16,000	2.76	2.42	2.07
8099	18.0	.026	.15	16,000	2.76	2.42	2.07
7839	28.0	.024	.15	16,000	2.45	2.14	1.84

T-1¼ BI-PIN INDICATOR LAMPS

Size: .200″ dia. x .600″ long; .020″ dia. pins, .250″ long.

7636	1.35	.03	.006	100	$3.01	$2.63	$2.26
7637	3.0	.19	.25	350	2.59	2.27	1.94
7660	6.0	.04	.03	1,000	3.01	2.63	2.26
7628	6.0	.20	.63	1,000	2.59	2.27	1.94
7646	14.0	.08	.50	1,000	2.59	2.27	1.94

T-1¾ BI-PIN INDICATOR LAMPS

Size: .230″ dia. x .625″ long; .020″ dia. pins, .250″ long.

7931	1.35	.06	.01	500	$0.95	$0.83	$0.71
7868	2.5	.350	.21	10,000	.91	.80	.68
7968	2.5	.20	.22	500	.91	.80	.68
7838	2.7	.06	.04	6,000	.87	.77	.66
7375	3.0	.015	.003	10,000	1.50	1.31	1.13
7945	6.0	.04	.03	10,000	1.00	.88	.75
7328	6.0	.20	.60	1,000	.66	.58	.50
7380	6.3	.04	.02	50,000	.98	.84	.69
7377	6.3	.075	.22	500	.74	.65	.55
7349	6.3	.20	.55	3,000	.91	.78	.64
7381	6.3	.20	.40	50,000	.98	.84	.69
7344	10.0	.014	.002	10,000	1.23	1.05	.86
7382	14.0	.08	.30	50,000	.98	.84	.69
7330	14.0	.08	.50	750	.74	.65	.56
7370	18.0	.04	.15	10,000	1.30	1.14	.98
7459	22.0	.04	.30	2,000	1.24	1.09	.93
7387	28.0	.04	.30	25,000	.97	.82	.68
7327	28.0	.04	.34	7,000	.73	.62	.51

CM21 SERIES SOCKETS FOR BI-PIN LAMPS

Pushfit Teflon® sockets accept all CM7 Bi-Pin lamps listed above. Snap directly into panels, brackets or PC boards. Type CM21-1 has beryllium copper contacts with .050″ pin centers, for T-1 lamps. CM21-2 has phosphor bronze contacts with gold over silver plating, with .125″ pin centers for T-1¼ and T-1¾.

®Registered DuPont trademark.

CML No.	For Bi-Pin Lamp	Mtg. Hole	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
CM21-1	T-1	.122″	$0.73	$0.67	$0.62	$0.55	$0.50
CM21-2	T-1¼, T-1¾	.221″	.95	.87	.81	.72	.65

CM26 SERIES T-1 PEANUT-LITES

Low cost commercial substitutes for MS25446 and MS90308 indicators. Each T-1 Peanut-Lite contains a subminiature lamp sealed in a high-temperature polycarbonate housing. Lamps range from 3 to 28 volts. Can be mounted with spring mounting clips (CM26-1012) which are provided with T-1 Peanut-Lites. Type 10384 clip for circuit board mounting is also available. Three types of terminal material are available—CM26-1 has .750″ tinned wire leads; CM26-2 has .312″ long .020″ nickel pins; CM26-3 has #26 AWG stranded wire, 6″ long. White, red, amber, green, and blue caps are standard; other colors available. Also available are special length and type pins and leads. Write for information. **HOW TO ORDER:** For cap color, substitute for **XX** in CML number: **05,** white; **07,** red; **09,** amber; **10,** green; **11,** blue. Example: CM26-1-07-19 is the wire lead version with red cap and 5V, .06A lamp.

CML Number* CM26-	Volts	Amps	M.S. C.P.	Aver. Life, Hrs.	Net Each, Lots of* 1-9	10-24	25-99	100-249
1-XX-02	3.0	.0125	.001	16,000	$2.20	$2.02	$1.88	.....
1-XX-05	5.0	.03	.03	75,000	1.96	1.80	1.66	.....
1-XX-19	5.0	.06	.05	50,000	1.08	1.00	.92	.....
1-XX-20	5.0	.11	.05	25,000	1.08	1.00	.92	.....
1-XX-14	10.0	.027	.10	10,000	1.73	1.58	1.47	.....
1-XX-15	12.0	.06	.15	16,000	1.73	1.58	1.47	.....
1-XX-17	18.0	.026	.15	16,000	2.05	1.88	1.74	.....
1-XX-18	28.0	.024	.15	16,000	2.07	1.89	1.76	.....
2-XX-02	3.0	.0125	.001	16,000	2.39	2.20	2.05	.....
2-XX-05	5.0	.03	.03	75,000	2.15	1.97	1.83	.....
2-XX-19	5.0	.06	.05	50,000	1.29	1.18	1.09	.....
2-XX-20	5.0	.11	.05	25,000	1.29	1.18	1.09	.....
2-XX-14	10.0	.027	.10	10,000	1.91	1.76	1.63	.....
2-XX-15	12.0	.06	.15	16,000	1.91	1.76	1.63	.....
2-XX-17	18.0	.026	.15	16,000	2.23	2.06	1.91	.....
2-XX-18	28.0	.024	.15	16,000	2.25	2.08	1.93	.....
3-XX-02	3.0	.0125	.001	16,000	2.43	2.23	2.08	.....
3-XX-05	5.0	.03	.03	75,000	2.20	2.02	1.88	.....
3-XX-19	5.0	.06	.05	50,000	1.33	1.22	1.14	.....
3-XX-20	5.0	.11	.05	25,000	1.33	1.22	1.14	.....
3-XX-14	10.0	.027	.10	10,000	1.97	1.82	1.68	.....
3-XX-15	12.0	.06	.15	16,000	1.97	1.82	1.68	.....
3-XX-17	18.0	.026	.15	16,000	2.28	2.09	1.95	.....
3-XX-18	28.0	.024	.15	16,000	2.31	2.11	1.96	.....

*See How To Order information above and insert two digits in CML no. as indicated.

CM25 SERIES T-1 INDICATORS

Subminiature T-1 indicators which meet MS-90308. Unbased T-1 lamp is inserted into housing and cap is snapped on to hold lamp and provide color identification. Features include dimpled terminals (patent pending) for positive electrical contact and internally flared lead guides for easy wire-terminal lamp insertion. Hot-stamped legends can be provided with new cylindrical cap style. Units are small enough to mount on .250″ centers and still allow adequate wiring room and space to replace lamp. Base and cap are polycarbonate. **HOW TO ORDER:** For **base style,** substitute for first **X** in CML number: **5,** panel mount; **6,** PC mount. For **cap style,** substitute for second **X** in CML number: **7,** round; **8,** lens; **9,** square. For **cap color,** substitute for final **XX** in CML number; **01,** clear transparent; **02,** red transparent; **03,** yellow transparent; **04,** green transparent; **05,** white translucent; **06,** blue transparent; **07,** red translucent; **08,** yellow translucent; **09,** green translucent; **10,** blue translucent; **11,** amber translucent. Final number is lamp number; to order less lamp, omit lamp number. **Example:** CM25-5-706-715 is panel mounted with a round, blue transparent cap and a 5 V, .115 A lamp. CM25-5-706 is the same thing without the lamp. Also available as MS90308-X (**2,** red; **4,** yellow; **5,** green; **6,** blue; **9,** clear) -XXX (lamp number 680, 683, or 715). Requires .190″/.186″ dia. round mounting hole.

CML No. CM25- X-XX-	Volts	Amps	M.S. C.P.	Aver. Life, Hrs.	Net Each, Lots of* 1-9	10-24	25-99
7201	1.5	.015*	.01†	5,000	$2.54	$2.34	$2.18
8846	3.0	.008*	.001†	16,000	2.54	2.34	2.18
2128	3.0	.0125*	.001†	16,000	2.54	2.34	2.18
7207	3.0	.060	.03	100,000	2.54	2.34	2.18
7210	5.0	.030	.03	75,000	2.54	2.34	2.18
6150	5.0	.060	.15	5,000	2.06	1.90	1.76
680	5.0	.060	.03	100,000	2.06	1.90	1.76
683	5.0	.060	.05	100,000	2.06	1.90	1.76
713	5.0	.075	.09	25,000	2.06	1.90	1.76
715	5.0	.115	.15	40,000	2.06	1.90	1.76
7218	10.0	.027	.10	10,000	2.57	2.35	2.19
7219	12.0	.060	.15	16,000	2.57	2.35	2.19
7220	18.0	.026	.15	16,000	2.57	2.35	2.19
6838	28.0	.024	.15	16,000	2.65	2.43	2.26

*±20%. †Nominal.

Base Only

CML Number	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
CM25-1005	$0.78	$0.72	$0.66	$0.59	$0.54
CM25-1006	.78	.72	.66	.59	.54

Cap Only

CM25-1007-XX*	$0.25	$0.23	$0.21	$0.20	$0.17
CM25-1008-XX*	.25	.23	.21	.20	.17
CM25-1009-XX*	.25	.23	.21	.20	.17

*Replace **XX** with color indicators; see How to Order, above.

★WRITE FOR PRICES ON LARGER QUANTITIES

CML SERIES CARTRIDGE INDICATORS

Cartridge housings with incandescent or neon lamps; cool operating temperatures for long life. Mount in cartridge holder, or panel mounting with speed clip (not included). Clear anodized aluminum housings, nylon insulation, transparent or translucent polycarbonate or butyrate (color matched to industrial standards) caps. Meet requirements of MIL-L-3661. Stainless steel pins are located off-center for polarization. Stainless steel pin terminals, or #24 AWG wire leads. Available with hot stamped legends; write for prices. **Body Size:** .284" dia. x .634" long.

HOW TO ORDER: Insert two interfixes in CML number, replacing **XX** shown in tables below. First interfix indicates cap style and terminal configuration: **1,** flush cap with wire leads; **2,** short cylindrical cap with wire leads; **3,** long cylindrical cap with wire leads; **4,** macrodome cap with wire leads; **5,** flush cap with pin terminals; **6,** short cylindrical cap with pin terminals; **7,** macrodome cap with pin terminals; **8,** long cylindrical cap with pin terminals. Second interfix indicates cap type: **1,** butyrate, transparent; **2,** butyrate, translucent; **3,** polycarbonate, transparent; or **4,** polycarbonate, translucent.

Also replace final **X** in CML no., to indicate cap color: **1,** red; **2,** green; **3,** amber; **4,** blue; **5,** white; **6,** yellow; or **7,** clear. Examples: CML-530077 has clear transparent flush cap, pin terminals, and 10 V, 14 mA lamp. CML-140431 has red translucent flush cap, wire lead terminals, and 3.0 V, 15 mA lamp. CML-830012 has green transparent long cylindrical cap, pin terminals and 0.3 mA, 1/25 watt neon lamp.

WITH T-1¾ INCANDESCENT LAMPS

CML Number* CML-	Volts	Amps	M.S. C.P., Approx.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
XX015X	1.35	.06	.01	500	$1.08	$1.00	$0.92	$0.83
XX017X	2.5	.20	.22	500	1.12	1.04	.96	.85
XX018X	2.7	.06	.04	6,000	1.05	.96	.87	.79
XX043X	3.0	.015	.004	10,000	1.75	1.66	1.51	1.29
XX012X	6.0	.04	.03	10,000	.97	.90	.83	.73
XX006X	6.0	.20	.63	1,000	.97	.90	.83	.73
XX027X	6.3	.04	.02	50,000	1.26	1.16	1.06	.97
XX019X	6.3	.075	.22	500	1.12	1.04	.96	.85
XX013X	6.3	.20	.40	50,000	1.17	1.05	.97	.89
XX020X	6.3	.20	.55	3,000	1.12	1.04	.96	.85
XX007X	10.0	.014	.002	10,000	1.50	1.33	1.23	1.12
XX008X	10.0	.04	.08	5,000	1.56	1.41	1.30	1.18
XX028X	14.0	.08	.30	50,000	1.26	1.16	1.06	.97
XX009X	14.0	.08	.50	750	.97	.87	.81	.75
XX010X	18.0	.04	.15	10,000	1.29	1.19	1.08	.97
XX040X	28.0	.04	.20	50,000	1.19	1.09	1.02	.90
XX029X	28.0	.04	.30	25,000	1.25	1.14	1.05	.95
XX011X	28.0	.04	.34	7,000	1.04	.96	.87	.79

WITH T-2 INCANDESCENT LAMPS (NO CAP)

CML Number CML-	Volts	Amps	End Ft.-Candles, Approx.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
0X047X	10	.017	100	5,000	$1.38	$1.27	$1.19	$1.05
0X069X	12	.170	2500	5,000	1.38	1.27	1.19	1.05
0X048X	16	.017	150	5,000	1.44	1.32	1.22	1.08
0X035X	28	.040	2000	5,000	1.38	1.27	1.19	1.05
0X033X	48	.053	1500	5,000	1.38	1.27	1.19	1.05
0X068X	60	.050	2600	5,000	1.38	1.27	1.19	1.05

WITH NEON LAMPS (105-125 VAC)

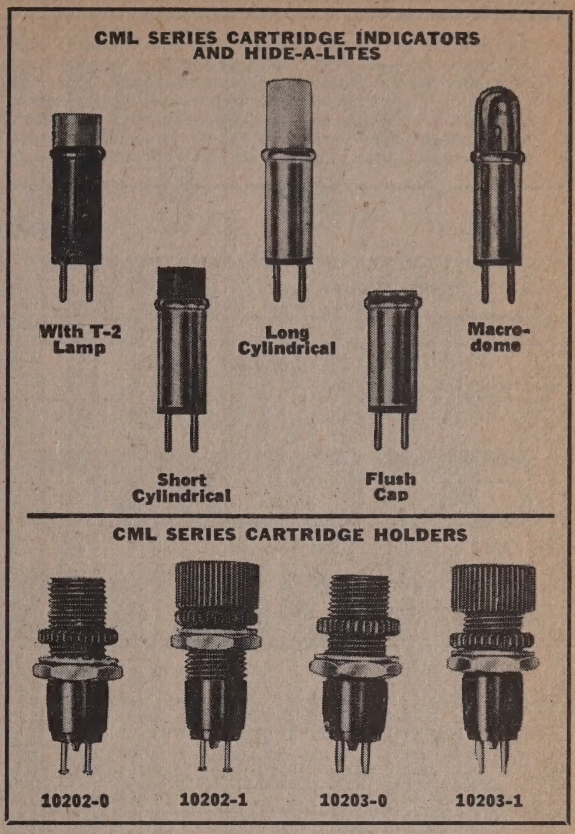
CML Number* CML-	Nominal mA	Nominal Watts	Built-in Resis.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
XX001X	0.3	1/25	220K†	25,000	$0.97	$0.90	$0.83	$0.73
XX004X	0.8	1/10	68K†	25,000	.97	.90	.83	.73
	1.2‡	1/9	22K	2,000				
XX014X	1.7§	1/45	33K	5,000	1.90	1.75	1.62	1.44
XX016X	2.0§	1/4	22K	14,000	1.90	1.75	1.62	1.44
XX022X	1.9§	1/4	30K†	25,000	.85	.78	.72	.64
XX023X	1.0§	1/10	56K	8,500	1.90	1.75	1.62	1.44
XX024X	0.7§	1/15	100K	25,000	1.90	1.75	1.62	1.44
XX025X	0.7§	1/15	None	25,000	.85	.78	.72	.64
XX030X	0.9	1/8	47K	12,000	2.02	1.85	1.72	1.52
XX031X	0.35	1/16	150K	16,000	2.02	1.85	1.72	1.52
XX032X	0.3	1/25	220K	25,000	2.02	1.85	1.72	1.52
XX036X	0.7§	1/15	None	25,000	.92	.84	.78	.69
XX042X	1.0§	1/10	56K	100,000#	1.90	1.75	1.62	1.44

*See How To Order information above, and add two interfixes and suffix, as indicated. †Valve of external resistor required. ‡Not available in flush cap style. §Available only in long cylindrical and macrodome cap styles. #Over 100,000 hours.

No. CML-10380 Cartridge Indicator Mounting Clip—For mounting CML series indicators directly in panel, in 9/32" clearance hole. Spring tempered steel. Net Each, Lots of 1-9 . . . . . **10c***

No. CM21-3 Cartridge Indicator Connector—Accepts CML series indicators for low-cost mounting (not in panels). Phenolic body, cadmium plated brass contacts. Net Each, Lots of 1-9 . **29c***

★WRITE FOR PRICES ON LARGER QUANTITIES



CML SERIES HIDE-A-LITES

Electrical and mechanical specifications identical to CML Series Cartridge Indicators except all indicators appear **white** in off position and take on color only when activated. Colors available: Red, green, blue, amber. Translucent cap only. **HOW TO ORDER:** Replace **XX** in CML number with 50, 60, 70, or 80 to indicate cap style and terminal configuration—**50,** flush, pin; **60,** short cylindrical, pin; **70,** long cylindrical, pin; **80,** macrodome, pin. Replace final suffix **X** with R, G, B, or A for activated color—**R,** red; **G,** green; **B,** blue; **A,** amber. Example: CML 50406 W/R—Flush, translucent cap, 6 volt, .20A, white (red when activated).

CML Number* CML- XX4	V	A	M.S. C.P.	Avg. Life, Hrs.	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
17 W/X	2.5	.20	.22	500	$1.77	$1.63	$1.51	$1.34	$1.21
06 W/X	6.0	.20	.63	1,000	1.64	1.50	1.39	1.23	1.12
52 W/X	6.3	.20	.55	3,000	1.64	1.50	1.39	1.23	1.12
19 W/X	6.3	.075	.22	500	1.77	1.63	1.51	1.34	1.21
13 W/X	6.3	.20	.40	50,000	1.92	1.76	1.64	1.45	1.31
20 W/X	6.3	.20	.55	3,000	1.77	1.63	1.51	1.34	1.21
28 W/X	14.0	.08	.30	50,000	1.92	1.76	1.64	1.45	1.31
09 W/X	14.0	.08	.50	750	1.64	1.50	1.39	1.23	1.12
53 W/X	14.0	.09	.50	10,000	2.21	2.03	1.89	1.67	1.51
10 W/X	18.0	.04	.15	10,000	1.92	1.76	1.64	1.45	1.31
54 W/X	22.0	.04	.30	2,000	1.92	1.76	1.64	1.45	1.31
40 W/X	28.0	.04	.30	25,000	1.92	1.76	1.64	1.45	1.31
11 W/X	28.0	.04	.34	7,000	1.67	1.54	1.43	1.26	1.14
45 W/X	28.0	.06	.34	25,000	2.16	1.98	1.84	1.62	1.48
55 W/X	28.0	.06	.60	5,000	2.31	2.12	1.97	1.74	1.58

*See How To Order information above.

CML SERIES CARTRIDGE HOLDERS

Panel mounting holders for T-1¾ or T-2 lamps. Body, collar and facing nut are black anodized aluminum. Molded phenolic insulation. Turret terminals are spring brass, gold over nickel plate; solder cup terminals are spring brass, tintilate plate. Types 10202-1 and 10203-1 have 9/32" thick knurled collar nut. Mount in round or "D" hole, .375" dia., in panels to 15/32" thick (when not using collar nut). Terminal pins are polarized.

CML Number CML-	Mounting	Terminals	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
10202-0	Front/rear	Turret	$1.01	$0.93	$0.83	$0.77	$0.70
10202-1	Front	Turret	1.15	1.06	.94	.88	.80
10203-0	Front/rear	Solder	1.01	.93	.83	.77	.70
10203-1	Front	Solder	1.15	1.06	.94	.88	.80

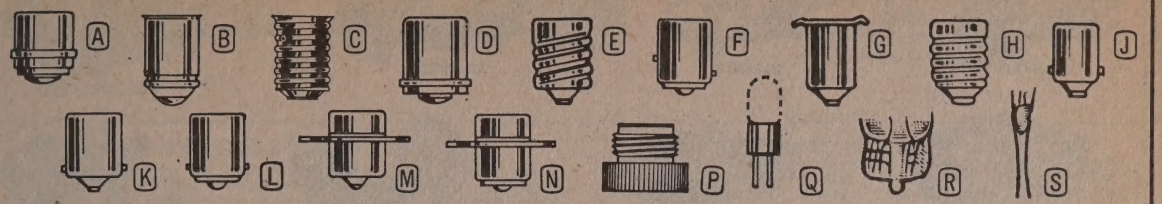
This is a partial listing of miniature and subminiature lamps. Miniature lamps are most commonly used in numerous applications for panel indicators, aircraft, flashlight and radio or TV pilot lights. The subminiature lamps were specifically designed for modern, up-to-date special equipment such as computers, miniature switches, medical electronic equipment, aircraft, aerospace, etc. Many other uses are met where the ultimate in precision miniature lamp techniques is demanded. Engineered to military specifications, they are used as standards on many classified government projects and business machines. Lamps listed herein are the most popular types available from Chicago Miniature. If your application requires a special lamp or one not shown, send us your application needs. We will be pleased to submit our recommendations.

MINIATURE LAMPS

Lamp No.	Design V	Design A	MSCP* Approx.	Base Fig.	Bulb	Net/10-Pack 1-9 Pkgs.	Net/10-Pack 10-49 Pkgs.	Net/10-Pack 50 Up Pkgs.
PR-2	2.38	.50	.80	G§	B-3½	$ 2.15	$ 1.80	$ 1.46
PR-3*	3.57	.50	1.50	G§	B-3½	2.21	1.86	1.50
PR-4	2.33	.27	.40	G§	B-3½	2.21	1.86	1.50
PR-6*	2.47	.30	.45	G§	B-3½	2.21	1.86	1.50
PR-7	3.70	.30	.90	G	B-3½	2.54	2.13	1.73
PR-12	5.95	.50	3.10	G§	B-3½	2.21	1.86	1.50
PR-13	4.75	.50	2.20	G§	B-3½	2.21	1.86	1.50
PR-16	12.5	.25	.27	G	B-3½	3.29	2.77	2.23
12	6.3	.15	.35	Q	G-3½	2.55	2.02	1.87
13*	3.7	.30	.98	H	G-3½	1.75	1.47	1.19
14*	2.47	.30	.50	H	G-3½	1.75	1.47	1.19
27*	4.9	.30	1.4	H	G-4½	2.94	2.13	1.87
31*	6.15	.30	2.0	H	G-4½	2.69	2.57	2.48
40*	6.3	.15	.52	H	T-3¼	1.25	1.06	.88
42*	3.2	.35	.50	H	T-3¼	3.63	3.04	2.48
43	2.5	.50	.50	J	T-3¼	2.78	2.34	1.89
44*	6.3	.25	.90	J	T-3¼	1.50	1.26	.93
45*	3.2	.35	.50	J	T-3¼	2.36	1.99	1.36
46*	6.3	.25	.90	H	T-3¼	1.33	1.13	.86
47*	6.3	.15	.52	J	T-3¼	1.37	1.15	.93
48	2.0	.06	.04	H	T-3¼	2.64	2.24	1.85
49	2.0	.06	.04	J	T-3¼	2.02	1.73	1.42
50	7.5	.22	1.0	H	G-3½	1.92	1.68	1.44
51*	7.5	.22	1.0	J	G-3½	1.56	1.37	1.17
53*	14.4	.12	1.0	J	G-3½	1.62	1.42	1.21
55*	7.0	.41	2.0	J	G-4½	2.36	2.07	1.77
57	14.0	.24	2.0	J	G-4½	1.70	1.49	1.28
67*	13.5	.59	4.0	K	G-6	2.26	1.98	1.70
68*	13.5	.59	4.0	L	G-6	3.16	2.77	2.37
72	22.0	.18	3.0	L	G-6	7.02	6.14	5.27
82*	6.5	1.05	6.0	L	G-6	2.44	2.14	1.83
87*	6.8	1.91	15.0	K	S-8	5.80	5.08	4.35
88*	6.8	1.90	15.0	L	S-8	4.08	3.57	3.06
90*	13.0	.58	6.0	L	G-6	2.52	2.21	1.89
93*	12.8	1.04	15.0	K	S-8	3.20	2.80	2.40
94*	12.8	1.0	15.0	L	S-8	3.86	3.38	2.90
113	1.3	.22	.....	H	GTL-3	3.64	3.07	2.55
123	1.25	.30	10.0	H	G-3½	1.84	1.55	1.14
131*	1.3	.10	.03	H	G-3½	2.02	1.70	1.25
136	1.25	.60	.20	H	G-4½	3.64	2.73	2.37
159	6.3	.15	3.8	R	T-3¼	2.50	2.10	1.69
209	6.5	1.78	15.0	K	B-6	4.28	4.10	3.94
222*	2.25	.25	.....	H	GTL-3	2.50	2.11	1.70
224	2.15	.22	.....	SP‡	GTL-2¾	2.43	2.33	2.24
233	2.33	.27	.42	H	G-3½	2.28	1.94	1.57
239	6.3	.36	.67	J	T-3¼	2.96	2.49	2.03
240	6.3	.36	.67	J	T-3¼	2.70	2.25	1.82
245	2.46	.50	.90	H	G-3½	2.61	2.26	1.83
252	2.5	.35	.....	D	GTL-1¾	26.49	22.96	19.43
253X	2.5	.35	.....	D	GTL-1¾	31.96	27.71	23.45
261	2.5	.35	.....	B	GTL-1¾	51.53	44.68	37.81
276	28.0	.06	.340	B	T-1¾	10.00	8.68	7.34
301*	28.0	.17	3.0	K	G-5	4.68	4.47	4.30
304*	28.0	.30	6.0	L	G-6	5.23	4.39	3.55
305*	28.0	.51	15.0	K	S-8	6.44	5.39	3.97
307*	28.0	.66	21.0	K	S-8	5.05	4.38	4.00
309	28.0	.90	32.0	K	S-11	8.47	7.19	5.82
313*	28.0	.17	.35	J	T-3¼	3.15	2.65	2.14
323*	3.0	.19	.250	P	T-1¼	15.00	12.50	10.00
324	3.0	.19	.250	S	T-1¼	5.48	4.75	4.02
325	3.0	.19	.250	T‡	T-1¼	15.76	13.65	11.56
327*	28.0	.04	.340	D	T-1¾	5.80	4.90	3.94
328*	6.0	.20	.60†	D	T-1¾	3.41	2.85	2.32
330	14.0	.08	.500	D	T-1¾	7.87	6.61	5.34
331	1.35	.06	.01	D	T-1¾	9.49	8.01	6.48
334	28.0	.04	.340	B	T-1¾	8.81	7.40	5.93
337	6.0	.20	.60	B	T-1¾	16.95	14.24	11.52
344	10.0	.014	.002	B	T-1¾	13.47	11.80	10.12
346	18.0	.04	.15	B	T-1¾	12.40	9.81	7.21
363	14.0	.20	2.0	J	G-3½	2.26	1.91	1.59
370	18.0	.04	.15	D	T-1¾	14.98	12.30	10.18
375	3.0	.015	.003	D	T-1¾	21.09	17.93	14.76
376	28.0	.06	.340	D	T-1¾	10.57	8.99	7.40
380	6.3	.04	.020	D	T-1¾	20.77	17.45	14.12
381	6.3	.20	.40	D	T-1¾	11.06	9.29	7.52
386	14.0	.08	.30	B	T-1¾	15.11	12.69	10.27
387*	28.0	.04	.30	D	T-1¾	5.94	4.99	4.04
388	28.0	.04	.30	B	T-1¾	15.03	12.63	10.22
425	5.0	.50	2.3	H	G-4½	2.08	1.80	1.68
502	5.1	.15	.60	H	G-4½	1.68	1.41	1.14
503	5.1	.15	.60	J	G-4½	2.26	1.89	1.54
509K	24.0	.18	2.8	E	G-6	$ 7.34	$ 6.36	$ 5.38
958	5.5	2.00	14.0	L	G-16½	77.50	67.00	61.00
	6.0	.82	5.0					
965	9.8	.50	6.0	H	T-4½	2.96	2.56	2.17
1003	12.8	.94	15.0	K	B-6	2.93	2.44	2.10
1004	12.8	.94	15.0	L	B-6	2.93	2.46	2.05
1034	12.8	1.80	32.0	F	S-8	3.40	3.00	2.75
	14.0	.51	4.0					
1047	26.0	2.70	105.00	K	RP-11	17.41	13.10	11.06
1073*	12.8	1.80	32.00	K	S-8	3.29	2.66	2.39
1129*	6.4	2.63	21.00	K	S-8	3.70	3.10	2.72
1130*	6.4	2.00	21.00	L	S-8	5.52	4.62	4.00
1133*	6.2	3.91	32.00	K	RP-11	6.80	5.47	4.60
1141*	12.8	1.44	21.00	K	S-8	3.19	2.77	2.54
1142*	12.8	1.44	21.00	L	S-8	3.64	3.10	2.59
1143*	12.5	2.00	32.00	K	RP-11	10.56	8.84	7.64
1154*	6.4	2.63	21.00	F	S-8	4.98	4.36	3.74
	7.0	.75	3.0					
1184*	5.5	6.25	50.00	L	RP-11	12.32	10.78	9.24
1209	6.1	4.10	32.00	M	RP-11	23.88	20.90	17.91
1224	34.0	.16	3.8	E	G-6	11.60	10.15	8.70
1251*	28.0	.23	3.0	K	G-6	5.36	4.69	4.02
1252*	28.0	.23	3.0	L	G-6	6.33	5.24	4.59
1385*	28.0	.....	20W	K	R-12	26.79	22.42	19.00
1449	14.0	.20	2.0	H	G-3½	1.92	1.68	1.44
1458	20.0	.25	4.2	H	G-5	5.74	5.02	4.30
1471	12.0	.26	2.3	E	G-6	13.08	11.45	9.81
1476	18.0	.17	2.2	H	T-3	9.58	8.38	7.19
1477	24.0	.17	3.3	H	T-3	11.86	10.38	8.90
1483	6.0	.04	.10	H	G-4½	5.64	4.94	4.23
1487	14.0	.20	1.4	H	T-3¼	3.00	2.63	2.25
1488	14.0	.15	1.5	J	T-3¼	3.20	2.80	2.40
1489	6.5	2.75	25.0	K	T-5	56.46	49.40	42.35
1490	3.2	.16	.20	J	T-3¼	2.50	2.19	1.88
1491*	2.4	.80	1.3	L	G-8	15.74	13.77	11.81
1493	6.5	2.80	23	L	S-8	14.98	13.11	11.24
1503	5.9	6.53	50	M	RP-11	27.00	23.63	20.25
1630	6.5	2.75	23.0	N	S-8	17.72	15.51	13.29
1705D	14.0	.08	.50	S	T-1¾	6.55	5.50	4.45
1728D	1.35	.06	.01	S	T-1¾	4.12	3.50	2.88
1738D	2.7	.06	.04	S	T-1¾	4.84	4.07	3.29
1763	6.1	4.10	32.0	M	S-11	18.41	17.60	16.93
1764D	28.0	.04	.34	M	T-1¾	5.35	4.50	3.64
1767*	2.5	.20	.22	C	T-1¾	7.71	6.30	5.24
1768*	6.0	.20	.60	C	T-1¾	8.87	7.47	6.03
1783D	2.5	.20	.22	S	T-1¾	4.16	3.54	2.90
1813	14.4	.10	.86	J	T-3¼	2.78	2.43	2.09
1815*	14.0	.20	1.4	J	T-3¼	2.34	2.05	1.76
1816	13.0	.33	3.0	J	T-3¼	2.64	2.31	1.98
1819*	28.0	.04	.34	J	T-3¼	3.80	3.33	2.85
1820	28.0	.10	1.6	J	T-3¼	3.62	3.05	2.46
1821	28.0	.17	3.5	H	T-3¼	8.48	7.10	5.76
1822	36.0	.10	2.5	J	T-3¼	7.90	6.82	5.85
1828	37.5	.05	.65	J	T-3¼	6.06	5.58	5.20
1829*	28.0	.07	1.0	J	T-3¼	3.78	3.18	2.59
1835	55.0	.05	1.1	J	T-3¼	7.62	6.40	5.16
1847	6.3	.15	.38	J	T-3¼	1.79	1.51	1.22
1850	5.0	.09	.25	J	T-3¼	3.50	2.94	2.38
1855	6.3	.80	3.6	J	T-4½	6.10	5.30	4.55
1866	6.3	.25	.65	J	T-3¼	2.22	1.87	1.51
1869D	10.0	.014	.002	S	T-1¾	11.50	9.74	7.88
1891	14.0	.24	2.0	J	T-3¼	1.62	1.36	1.10
1892	14.4	.12	.75	J	T-3¼	2.56	2.15	1.75
1893	14.0	.33	2.0	J	T-3¼	1.86	1.57	1.26
2102D	18.0	.04	.15	S	T-1¾	8.58	7.21	5.83
2107D	10.0	.04	.08	S	T-1¾	13.11	11.01	8.90
2112D	6.3	.20	.55	S	T-1¾	7.81	6.56	5.31
2124D	2.5	.35	.....	S	GTL-1¾	21.51	18.00	14.61
2158D	3.0	.015	.003	S	T-1¾	11.60	9.85	8.10
2162D	14.0	.088	.100	S	T-1¾	6.68	5.61	4.54
2180D	6.3	.04	.02	S	T-1¾	11.03	9.27	7.50
2181D	6.3	.20	.40	S	T-1¾	5.99	5.03	4.07
2182D	14.0	.08	.30	S	T-1¾	6.44	5.51	4.38
2185D	28.0	.04	.20	S	T-1¾	11.00	9.24	7.48
2187D	28.0	.04	.30	S	T-1¾	9.31	7.82	6.33

*Mean Spherical Candlepower is the measurement of the total integrated light output of the lamp operated at design voltage. †At 5 volts. ‡Special, not illustrated. ***See following page for MS numbers.** §Single Contact.

BASE STYLES FOR CHICAGO MINIATURE LAMPS



(A) Sub-Midget Flanged, (B) Midget Grooved, (C) Midget Screw, (D) Midget Flanged, (E) Candelabra, (F) DC Bayonet Index, (G) Miniature Flange, (H) Miniature Screw, (J) Miniature Bayonet, (K) SC Bayonet, (L) DC Bayonet, (M) SC Prefocus, (N) DC Prefocus, (P) Threaded Knurled, (Q) Bi-Pin, (R) Wedge, (S) Wire Terminal. (SC for Single Contact; DC for Double Contact.)

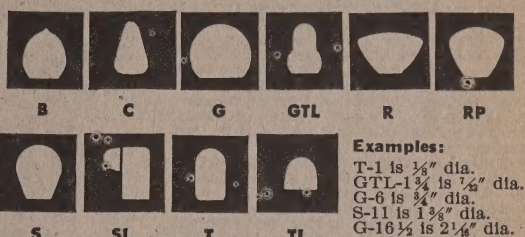
MINIATURE AND SUBMINIATURE LAMPS

Lamp No.	Design V	Design A	MSCP* Approx.	Base Fig.	Bulb	Net/10-Pack 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
276•	28.0	.06	.340	B	T-1¾	$10.00	$ 8.68	$ 7.34
313	28.0	.17	3.5	J	T-3¼	3.15	2.65	2.14
334	28.0	.04	.340	B	T-1¾	8.81	7.40	5.93
335	28.0	.04	.34	C	T-1¾	15.03	12.63	10.22
336	14.0	.08	.50	B	T-1¾	14.27	11.99	9.70
338	2.7	.06	.04	D	T-1¾	8.56	7.19	5.82
345	6.0	.04	.03	D	T-1¾	14.89	11.66	8.43
349	6.3	.20	.55	D	T-1¾	10.61	9.05	7.48
367	10.0	.04	.08	D	T-1¾	16.89	14.14	11.48
CM8-363	28.0	.04	.....	S	TL-1½	12.26	10.73	9.20
CM8-373	2.5	.35	.....	B	TL-1¾	23.88	20.90	17.91
CM8-374	2.5	.35	.....	S	TL-1¾	21.38	18.71	16.04
380	6.3	.04	.020	D	T-1¾	20.77	17.45	14.12
381	6.3	.20	.40	D	T-1¾	11.06	9.29	7.52
382	14.0	.08	.30	D	T-1¾	11.69	9.82	7.95
399	28.0	.04	.30	C	T-1¾	10.53	8.96	7.33
CM8-428	5.0	.18	.35	D	T-1¾	43.76	38.29	32.82
CM8-503	6.3	.35	.....	J	TL-2¾	68.80	60.20	51.60
634D	6.0	.20	.63	S	T-1¼	10.05	8.70	7.37
680*	5.0	.06	.03	S	T-1	18.98	15.90	12.70
680AS15*	5.0	.06	.03	S	T-1	21.81	18.09	14.70
682*	5.0	.06	.03	A	T-1	22.70	19.00	15.39
682AS15*	5.0	.06	.03	A	T-1	25.48	21.37	21.70
683*	5.0	.06	.05	S	T-1	18.98	15.90	12.70
683AS15*	5.0	.06	.05	S	T-1	21.81	18.29	14.70
685*	5.0	.06	.05	A	T-1	22.70	19.00	15.39
685AS15*	5.0	.06	.05	A	T-1	25.48	21.37	17.20
713*	5.0	.075	.09	S	T-1	18.98	15.90	12.70
713AS15*	5.0	.075	.09	S	T-1	21.81	18.29	14.70
714*	5.0	.075	.09	A	T-1	22.70	19.00	15.39
714AS15*	5.0	.075	.09	A	T-1	25.48	21.37	17.20
715*	5.0	.115	.15	S	T-1	18.98	15.90	12.70
715AS15*	5.0	.115	.15	S	T-1	21.81	18.29	14.70
718*	5.0	.115	.15	A	T-1	22.93	19.20	15.49
718AS15‡	5.0	.115	.15	A	T-1	25.48	21.37	17.20
755	6.3	.15	.33	J	T-3¼	3.15	2.65	2.14
757	28.0	.08	.62	J	T-3¼	4.63	3.89	3.15
965	9.8	.50	6.0	H	T-4½	2.96	2.56	2.17
CM8-967	120	.025	.36	J	T-2	18.76	16.42	14.07
6803	5.0	.06	.03	S	T-¾	26.88	23.52	20.16
6833	5.0	.06	.05	S	T-¾	20.70	17.95	15.19
6839	28.0	.024	.15	A	T-1	24.29	21.05	17.82
7153	5.0	.115	.15	S	T-¾	21.19	18.37	15.55
7216•	5.0	.125	.22	S	T-1	25.27	21.90	18.54
8610•	6.3	.20	.55	S	T-1¼	9.13	7.92	6.70
8627	28.0	.04	.32	S	T-1¼	11.41	9.89	8.38
8628•	6.0	.20	.63	D	T-1¼	16.52	14.32	12.12
8631•	1.35	.06	.006	D	T-1¼	11.87	10.28	8.70
8632	28.0	.04	.32	‡	T-1¼	18.63	16.14	13.66
8635	28.0	.04	.32	§	T-1¼	20.26	17.56	14.87
8637•	3.0	.19	.25	D	T-1¼	19.17	16.62	14.07
8640•	14.0	.08	.50	S	T-1¼	8.67	7.52	6.36
8666	5.0	.08	.15	S	T-1¾	24.65	21.37	18.09
8805D•	5.0	.06	.03	A	T-1¾	6.00	5.10	4.20

*Mean Spherical Candlepower. †Silvered base. ‡Special midget flanged, not illus. §Special screw, not illus. •New vs. former No.: 7216 = CM8-715F1; 8610 = CM8-610; 8628 = CM8-628; 8631 = CM8-631; 8637 = CM8-637; 8640 = CM8-640; 8805 = CM8-805; 276 = 334LSV.

BULB SHAPES AND SIZES

The bulb is the glass envelope which houses the lamp filament assembly, and contains the vacuum or gas seal. A letter and number identifies bulb shape and approximate bulb diameter in eighths of an inch. Popular bulb shapes are:



Examples:
T-1 is ⅛″ dia.
GTL-1¾ is ⅛″ dia.
G-6 is ¾″ dia.
S-11 is 1⅜″ dia.
G-16½ is 2⅛″ dia.

CM7 SERIES BI-PIN LAMPS

Lamp No. CM7-	Design Volts	Design Amps	MSCP* Approx.	Base Fig.	Bulb	Net/10-Pack 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
7327	28.0	.04	.34	Q	T-1¾	$ 7.25	$ 6.16	$ 5.07
7328	6.0	.20	.60	Q	T-1¾	6.62	5.79	4.97
7330	14.0	.08	.50	Q	T-1¾	7.40	6.48	5.55
7838	2.7	.06	.04	Q	T-1¾	8.74	7.65	6.56
7375	3.0	.015	.003	Q	T-1¾	15.00	13.13	11.25

*Mean Spherical Candlepower.

STANDARD VOLTAGE LAMPS

Lamp No.	Design Volts	Design Watts	Base Fig.	Bulb	Net Each
3S6/5	120–125	3	E	S-6	$1.100
6S6	115–125	6	E	S-6	.405
6S6	130	6	E	S-6	.469
6S6	145	6	E	S-6	1.100
6S6DC	120	6	L	S-6	.672
6T4½/1	115–125	6	E	T-4½	1.248
7C7	115–125	7	E	C-7	.331
10C7	115–125	10	E	C-7	.592
10C7DC*	115–125	7.0	L	C-7	.794
10S6C	230	10	E	S-6	1.248

NEON GLOW LAMPS

Cold-cathode gas discharge type lamps. Neon gas ionizes and glows when voltage is applied. Lamp 83(5AH) is a circuit glow lamp; all others are neon indicator lamps.

Lamp No. NE-§	Design Volts	Design W	A	Base Fig.	Bulb	Net/10-Pack 1-99 Pkgs.	100-499 Pkgs.	500Up Pkgs.
2(A1A)	105–125	1/17	0.5	S	T-2	$1.77	$ 1.49	$1.18
2D(C7A)*	105–125	1/12	0.7	D‡	T-2	9.52	8.00	6.45
2H(C2A)	105–125AC	1/4	1.9	S	T-2	1.41	1.19	.95
45(B7A)	105–125	1/4	2.0	E	T-4½	13.50	11.40	9.20
48(B9A)	105–125	1/4	2.0	L	T-4½	11.00	9.23	7.45
51(B1A)	105–125	1/25	0.3	J	T-3¼	3.88	3.26	2.64
51H(B2A)	105–125AC	1/7	1.2	J	T-3¼	3.88	3.26	2.64
83(5AH)	60–65	.....	10.0	S	T-2	3.41	2.86	2.31

§Numbers in parentheses are ASA (American Standards Association) numbers. ‡Single contact.

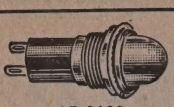
★MILITARY (MS) EQUIVALENTS

Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number
PR-3	15610-2	46	15536-1	88	15584-1	313	25231-313	1133	15565-1	1385	35480-2	683‡	24367-683‡
PR-6	15610-1	47	15571-2	90	15569-4	323	25236-323	1141	35478-4	1491	15568-1	685‡	24515-685‡
13	15611-1	51	15573-1	93	35478-93	327	25237-327	1142	15584-4	1767	15612-3	713‡	24367-713‡
14	15611-3	53	15573-3	94	15584-2	328	25237-328	1143	15565-3	1768	15612-1	714‡	24515-714‡
27	15587-1	55	15572-1	131	15611-4	365	15611-2	1154	35481-1	1815	15571-8	715‡	24367-715‡
31	15587-2	64	15569-1	222	28798-222	387	18209	1158	15584-13	1819	15571-6	718‡	24515-718‡
40	15536-4	67	15570-4	301	25238-301	1016	35481-2	1184	15564-1	1829	25231-1829	NE2D	
42	15536-3	68	15569-6	304	15569-8	1073	35478-1073	1240	15618-5	10C7DC	16123	(C7A)	25257-C7A
44	15571-1	82	15569-3	305	35478-305	1129	35478-1129	1251	*	680‡	24367-680‡		(NE-2D)
45	15571-11	87	35478-87	307	35478-307	1130	15584-3	1252	15569-7	682‡	24515-682‡		

*15570-1251. ‡Also AS15 (aged and selected with candlepower indicated) versions; e.g., 680AS15 = 24367-680AS15.

DIALIGHT Indicator Lights

DIALCO®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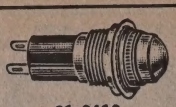
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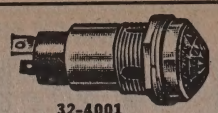
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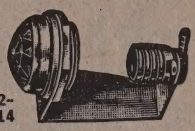
103-3101-1331

103-3101-1211

125-0408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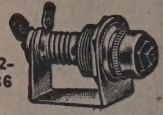

502-8136

NEON SERIES 95-0408, 52-0408, & SERIES 135-0408

Now also available with new High Brightness B2A Neon Glow Lamp. Have Patented Built-in Resistor.

Series 95—Two types available: Series 95-0408 enclosed neon indicator light has 56K-ohm, ⅓-watt resistor built-in for use with the regular B1A neon lamp on 105–125 volt circuit. Series 95-0463 has built-in 22K-ohm resistor for use with new B2A high brightness neon lamp on 110–125 VAC circuits. Rugged design; resistor fully insulated in molded phenolic. Plastic head gives 180° light spread. Mounting bushing is black nickel plated. Solder terminals. Size: 2⅛" long, 1⅝" O.D.; mounts in 1 1/16" hole in panels up to ⅜" thick. UL and CSA Listed. Meets requirements of MIL-L-3661A. **Series 52-0408** same as 95-0408 and **52-0463** same as 95-0463, but with internally fluted stovepipe lens. **Series 135-0408** same as 95-0408 and **135-0463** same as 95-0463, but with cylindrical (screw-in) lens. Shpg. Wt., 3 oz. Less lamp.

Net Each, 1–9 . . . . . **$1.87**
Net Each, 10–24 **$1.59**; 25–99 . **1.50**

WITH 56K-OHM RESISTOR

*	Dialco No.† 95-0408-	52-0408-	135-0408-
R	0931-241	0991-241	1431-241
A	0933-241	0993-241	1433-241
W	0935-241	0995-241	1435-241
C	0937-241	0997-241	1437-241

WITH 22K-OHM RESISTOR

*	Dialco No.† 95-0463-	52-0463-	135-0463-
R	0931-211	0991-211	1431-211
A	0933-211	0993-211	1433-211
W	0935-211	0995-211	1435-211
C	0937-211	0997-211	1437-211

*Lens: R, red; A, amber; W, white; C, clear. †Black nickel finish as listed; for polished chrome finish change 11th digit to 3 (e.g., 95-0408-0931-341).

INCANDESCENT SERIES 81-0410 SERIES 95-0410, 52-0410

Series 81-0410—For use with T-3¼ bulb, miniature bayonet base incandescent, for 2–55 V circuits. Replaceable from front of panel. Aviation type assembly with socket shell encased in molded phenolic. Smooth face lenses in ½" brass lens holder. Black nickel bushing on all assemblies. Also black nickel holder on 81-Series. Solder terminals. Size: 2¼" lg., 1⅝" O.D.; mounts in 1 1/16" hole in panels up to ⅜" thick. UL and CSA Listed. Meets MIL-L-3661A requirements.

Net Each, 1–9 . . . . . **$1.89**
Net Each, 10–24 **$1.64**; 25–99 . **1.55**

Series 95-0410 and **52-0410**—Same as 81-0410, but ⅝" plastic stovepipe lens. Series 52-0410 lens is internally fluted. Wt., 3 oz. Less lamp. **For polished chrome finish** change third-from-last digit to 3 (e.g., 81-0410-0111-301). Net Ea., 1–9 . . **$1.60**
Net Each, 10–24 **$1.37**; 25–99 . **1.27**

*	Convex No. 81-0410-	Stovepipe No. 95-0410-	Fluted No. 52-0410-
R	0111-201	0971-201	0991-201
G	0112-201	0972-201	0992-201
A	0113-201	0973-201	0993-201
W	0135-201†	0975-201	0995-201

*Lens: R—red, G—green, A—amber, W—white. †Translucent unfrosted lens.

ENCLOSED ASSEMBLIES ONE-INCH SERIES 32-4001

Series for use with S-6 incandescent bulbs with candelabra screw base for 6–125 volt circuits. Lamp replaceable from front of panel. Faceted lens in choice of colors with friction-fit lens holder of polished chrome; white nickel plated mounting bushing. Iridite coated, cadmium plated steel hex nut and split lockwasher. Solder terminals. Size, 2 2/32" long, 1¾6" O.D.; mounts in 1" hole. UL and CSA Listed. Shpg. Wt., 4 oz. Less lamp.

Dialco Nos. 32-4001-0431-302 (Red), **32-4001-0432-302** (Green), **32-4001-0433-302** (Amber) or **32-4001-0437-302** (Clear)—Same, but with convex back frosted lens. **Dialco Nos. 32-4001-0111-302** (Red), **32-4001-0112-302** (Green), **32-4001-0113-302** (Amber), **32-4001-0117-302** (Clear).

Net Each, 1–9 . . . . . **$2.20**
Net Each, 10–24 **$2.07**; 25–99 . **1.94**

1" OIL-TIGHT SERIES

For Heavy Duty Industrial Applications

Enclosed rugged design gasketed with oil-proof gaskets impervious to oil, water and dust. Rugged binding screw terminals. Caps unscrew from face of panel. One-piece, solid brass mounting bushing; solid brass knurled lens holder; chrome finish. Glass lens gives omnidirectional (180°) light spread. High impact phenolic insulation. Size, 1⅞" long, 1⅜" O.D. Mounts in 1" clearance hole. Shpg. Wt., 3 oz., average. Less lamp.

Screw Base Types—Net Ea., 1–9 . . **$4.16**
Net Each, 10–24 **$3.82**; 25–99 . **3.58**
Bayonet Base Types—Net, 1–9 . . . **4.56**
Net Each, 10–24 **$4.20**; 25–99 . **3.93**

FOR 656 INCANDESCENT LAMPS
Torpedo Faceted Lens

For Screw Base	*	For Bayonet Base
103-3101-1331-403	R	103-3502-1331-403
103-3101-1332-403	G	103-3502-1332-403
103-3101-1333-403	A	103-3502-1333-403
103-3101-1334-403	B	103-3502-1334-403
103-3101-1335-403	W	103-3502-1335-403
103-3101-1336-403	Y	103-3502-1336-403
103-3101-1337-403	C	103-3502-1337-403

Dome Type Lens (Frosted Back)

103-3101-1211-403	R	103-3502-1211-403
103-3101-1212-403	G	103-3502-1212-403
103-3101-1213-403	A	103-3502-1213-403
103-3101-1214-403	B	103-3502-1214-403
103-3101-1235-403	W	103-3502-1235-403
103-3101-1216-403	Y	103-3502-1216-403
103-3101-1217-403	C	103-3502-1217-403

*R–Red; G–Green; A–Amber; B–Blue; W–Translucent, unfrosted white; Y–Yellow; C–Clear.

FOR NEON GLOW LAMPS
Dome Type Lens

For use with B7A candelabra screw base lamps. Resistor built into lamp base. Size, 2 7/32" long, 1¾6" O.D. Fits 1" clearance hole. Shpg. Wt., 3 oz. Less lamp.

Dialco No.	Lens Color	Net Ea., Lots 1-9	10-24
103-3114-1231-403	Red	$4.16	$3.82
103-3114-1233-403	Amber	4.16	3.82
103-3114-1236-403	Yellow	4.16	3.82
103-3114-1237-403	Clear	4.16	3.82
103-3114-1217-403	Clear*	4.16	3.82

*Frosted back.

11/16" OIL-TIGHT SERIES

Stovepipe Lenses—Fluted or Plain

With built-in resistor. Size, 2¾4" long, 1⅝" O.D. Mounts in 1 1/4" diameter hole. Shipping Weight, 2 oz. Less lamp.

FOR B1A NEON GLOW LAMP

Any model. Net Each, 1–9 . . . . . **$3.08**
Net Each, 10–24 **$2.84**; 25–99 . **2.68**

Fluted Lens	*	Plain Lens
125-0408-1191-443	R	125-0408-1131-443
125-0408-1193-443	A	125-0408-1133-443
125-0408-1196-443	Y	125-0408-1136-443
125-0408-1197-443	C	125-0408-1137-443
. . . . .	CI	125-0408-1117-443

11/16" OIL-TIGHT SERIES (CONT'D) FOR B2A NEON GLOW LAMP

Any model. Net Each, 1–9 . . . . . **$3.08**
Net Each, 10–24 **$2.84**; 25–99 . **2.68**

Fluted Lens	*	Plain Lens
125-0463-1191-413	R	125-0463-1131-413
125-0463-1193-413	A	125-0463-1133-413
125-0463-1195-413	W†	125-0463-1135-413
125-0463-1196-413	Y	125-0463-1136-413
125-0463-1197-413	C	125-0463-1137-413

FOR LOW-VOLTAGE T-3¼ MINIATURE BAYONET BASE LAMP

Any model. Net Each, 1–9 . . . . . **$2.78**
Net Each, 10–24 **$2.56**; 25–99 . **2.41**

Fluted Lens	*	Frosted Lens
125-0410-1191-403	R	125-0410-1111-403
125-0410-1192-403	G	125-0410-1112-403
125-0410-1193-403	A	125-0410-1113-403
125-0410-1194-403	B	125-0410-1114-403
125-0410-1195-403	W	125-0410-1135-403†
125-0410-1196-403	Y	125-0410-1116-403
125-0410-1197-403	C	125-0410-1117-403

*R–Red; G–Green; A–Amber; B–Blue; W–White; Y–Yellow; C–Clear; Cl–Frosted back, clear. †Translucent unfrosted.

OPEN SOCKET ASSEMBLIES SERIES 502-3214 ONE-INCH REMOVABLE JEWEL

Candelabra base, 115 volt pilot light assembly with faceted jewel in highly polished chrome plated brass holder. For standard bulbs. Requires 1" mounting hole. Solder terminals. Easily adjusted to panel. Secured to panel by separate bushings into which the lens holders are a friction fit, permitting removal for lamp replacement. **Dialco Nos. 502-3214-0431-302** (Red), **502-3214-0432-302** (Green) or **502-3214-0433-302** (Amber)—Net Each, 1–9 . . . . **$1.80**
Net Each, 10–24 **$1.65**; 25–99 . **1.54**

SERIES 502-8136, -8137 HALF-INCH REMOVABLE JEWEL

For operation with low volt, miniature bayonet and miniature screw base, incandescent lamps. Has white nickel finish. Requires 1 1/16 in. mounting hole. Faceted lens. Solder terminals. Effective lens diameter ½". All brackets are insulated from the live terminals. Unit secured by separate bushings; caps may be removed easily for access to the lamps. Less bulb.

Any model. Net Each, 1–9 . . . . . **$1.19**
Net Each, 10–24 . . . . . **1.06**

Bayonet Base	*	Screw Base
502-8136-2131-102	R	502-8137-2131-102
502-8136-2132-102	G	502-8137-2132-102
502-8136-2133-102	A	502-8137-2133-102

*R–Red; G–Green; A–Amber.

LENSES IN THREADED HOLDERS FOR PANEL MOUNTING

For use with separately mounted lamp sockets. All-purpose smooth jewels in polished chrome-plated brass holders for up to 2/32" panels, ¾", ½" and 1½" diameters—requiring 1 1/16", 7/16" and 9/32" holes, respectively for mounting. Shpg. Wt., 2 oz.

Dialco Nos. 514-2512-0111-302 (Red), **514-2512-0112-302** (Green), **514-2512-0113-302** (Amber)—Net Each, 1–9 . . . . . **$1.20**
Net Each, 10–24 **$1.12**; 25–99 . **1.06**

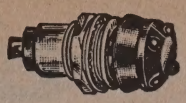
Dialco Nos. 514-1012-0621-102 (Red), **514-1012-0622-102** (Green), **514-1012-0623-102** (Amber)—Net Each, 1–9 . . . . . **$0.40**
Net Each, 10–24 **$0.38**; 25–99 . **.35**

Dialco Nos. 514-0512-0621-102 (Red), **514-0512-0622-102** (Green), **514-0512-0623-102** (Amber)—Net Each, 1–9 . . . . . **$0.40**
Net Each, 10–24 **$0.38**; 25–99 . **.35**

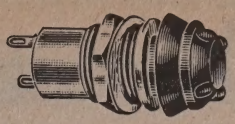
DIALIGHT Indicator Lights

DIALCO®

252-9951



270-1930



271-8430

SUB-SUBMINIATURE SERIES 252-9951

Reliable T-1 filament lamp enclosed in stovepipe, high-impact, translucent plastic lens molded to mounting bushing. Stainless steel housing. Steel, cadmium-plated mounting nut with chromate coating. Moisture and dust proof. High-temperature, Type E wire leads with silver-plated, stranded #26 copper conductor and fluorocarbon insulation. Anti-rotation (locked) construction. Long-life lamp, 60,000 hrs. at 5 volts. Requires only .193" panel mounting hole Conforms to MIL-L-3661B Size, 7/32" dia x 3 3/64" long (less terminal length).

Dialco Nos. 252-9951-0971 (Red), **252-9951-0972** (Green), **252-9951-0973** (Amber), **252-9951-0974** (Blue), **252-9951-0975** (White), **252-9951-0937** (Clear, transparent). Net Each, 1–9 ..... **$3.66** 10–24 ..... **$3.26**; 25–99 ..... **3.04**

SERIES 270 FOR PLASTIC PLATE EDGE-LIGHTING

Subminiature units for MIL-P-7788 plastic plate panels. Size, 1 7/16" long, 1 1/2" O D Mounts in 1 5/32" hole **Series 270-1930** has solder type terminals; **Series 270-1830**, screw-type terminals Shipping Weight, 2 oz Less lamp

Dialco No.	Filter Color	Terminal Type	Net Each, Lots of 1-9	10-24	25-99
270-1930-0111-702	Red	Solder	$1.20	$1.01	$0.91
270-1930-0171-702	Clear	Solder	1.20	1.01	.91
270-1930-3111-702	Red	Solder	1.20	1.01	.91
270-1930-3771-702	Clear	Solder	1.20	1.01	.91

SERIES 270 (CONT'D)

Dialco No.	Filter Color	Terminal Type	Net Each, Lots of 1-9	10-24	25-99
270-1830-0111-702	Red	Screw	$1.41	$1.15	$1.04
270-1830-0171-702	Clear	Screw	1.41	1.15	1.04
270-1830-3111-702	Red*	Screw	1.41	1.15	1.04
270-1830-3771-702	Clear*	Screw	1.41	1.15	1.04

*With light-emitting top.

NEW SUB-MINIATURE LIGHTS FOR TRANSLUCENT PANEL EDGE LIGHTING

Designed to emit light through a red or clear-colored filter. For use with MIL-P-7788 (plastic plate) panels. Insulated brass terminals have elongated slots. Cadmium-plated brass bushing. Cadmium-plated steel internal-tooth lockwasher and hex nut. Anti-rotation notch on face of flange. Opaque, light-seal washer. Mounting hole, 1 5/32". Max. panel thickness, 1/4". Max. projection back of panel, 3 1/32" O D , 5/8" Meet MIL-L-3661B, MS25010 Rev. D. Less lamp.

Dialco Nos. 271-8430-0111-702 (Red filter, black top), **271-8430-0171-702** (Clear filter, black top), **271-8430-3111-702** (Red filter, red top), **271-8430-3171-702** (Clear filter, red top), **271-8430-0212-702** (Red filter, gray top), **271-8430-0272-702** (Clear filter, gray top).
Net Each, 1–9 .... **$1.87**; 10–24 .... **$1.65**; 25–99 .... **$1.51**

508-7538-504 Lamp Holder

plus—

Dialco Lamp Cartridge

makes—

Complete Dialco DATALITE

250-8738

507-3906

507-3835

249-7841

DIALCO DATALITES®

Ultra-miniature indicator lights for computers, data processing equipment, automation, etc. Mount in 3/8" hole. "Datalites" are made in two basic styles—with Dialco's lamp cartridges, which are replaceable, and with built-in neon lamps which are permanent not replaceable.

SINGLE LAMP HOLDER

Use with Dialco's lamp cartridge, removable from front. Size, 1 13/16" long, 1/2" O.D. Mounts in 3/8" hole. Two insulated terminals offset for correct polarity when replacing cartridges in DC circuits. Conform to applicable MIL specs. Collar, flange ring, mounting bushing of black anodized aluminum. With mounting hardware, less cartridge.

Dialco No. 508-7538-504—Solder cup terminals.
Dialco No. 508-8738-504—Turret terminals.
Dialco No. 508-7545-504—Solder cup terminals, 5/64" longer to accommodate neon cartridge 507-4537 and high brightness type 507-4538.
Dialco No. 508-8745-504—Same as 508-7545-504, but with turret terminals.
Any Model—Net Each, 1–9 ..... **$1.82**
Net Each, 10–24 ..... **$1.52**; 25–99 ..... **1.38**

NEW PANEL-MOUNTING DATALAMP HOLDERS

Similar to 508 Series single lampholder, less collar. Collar utilized when conditions demand plug-in datalamp cartridge be very securely retained. Black, anodized alum. mtg. bushing, collar and flange nut. Brass, white nickel finish mounting nut. Internal-tooth lockwasher of phosphor bronze with white nickel finish. Phosphor bronze, gold-plated terminals. Choice of turret or solder cup terminals. Max. projection back of panel, 1 1/2". Max. panel thickness, 5/32". Collar and knurled flange nut, 3 3/64" dia.
Dialco Nos. 250-8738-14-504, 250-8745-14-504—With turret terminals; **Nos. 250-7538-14-504, 250-7545-14-504**—Same, but with solder cup terminals.
Net Each, 1–9 .... **$1.65**; 10–24 .... **$1.37**; 25–99 .... **$1.25**

NEON LAMP CARTRIDGES

For use with 508-8738-504, or 508-7538-504, and 250-7538-14-504, or 250-8738-14-504. Consists of NE-2E neon bulb, 1/25 watt with starting 65 VAC and 90 VDC; mounted in aluminum sleeve, capped with plastic stovepipe lens. Requires 1/3-watt ballast resistor. Size, 1 21/64" long, 1/3" O.D. Lens is transparent. **Lens Color:** Specify by changing 11th digit of part no. to: **1**, red, as listed; **3**, amber; **5**, white; **6**, yellow; **7**, clear (e.g., 507-3835-0933-600, amber lens). AC/DC models, standard brightness; AC models, high brightness.

Dialco No. 507-3835-0931-600—AC/DC, stovepipe lens.
Dialco No. 507-3835-1531-600—AC/DC, long cylindrical lens.
Dialco No. 507-3836-0931-600—AC, stovepipe lens.
Dialco No. 507-3836-1531-600—AC, long cylindrical lens.
Any Model—Net Each, 1–9 ..... **$1.32**
Net Each, 10–24 ..... **$1.10**; 25–99 ..... **1.00**

NEON CARTRIDGES

High brightness and standard brightness. Similar to Series 507-3835 and 507-3836 cartridges at left, but 1/8" longer. Built-in resistor.

Dialco No.* 507-	Built-In Resistor	Current, Volts	Lens Type	Net Each, Lots of 1-9	10-24	25-99
4537-0931-640	56 K-ohms	105–125 AC/DC	Stovepipe	$1.78	$1.49	$1.37
4538-0931-610	22 K-ohms	110–125 AC	Stovepipe	1.78	1.49	1.37
4537-1531-640	56 K-ohms	105–125 AC/DC	Long Cylinder	1.78	1.49	1.37
4538-1531-610	22 K-ohms	110–125 AC	Long Cylinder	1.78	1.49	1.37

***Lens Color:** Specify by changing 11th digit of part no. to: **1**, red, as listed; **3**, amber; **5**, white; **6**, yellow; **7**, clear (e.g., 507-3835-0933-600, amber lens).

INCANDESCENT LAMP CARTRIDGES

For use with 508-8738-504, or 508-7538-504, and 250-7538-14-504, or 250-8738-14-504. Uses T-1 3/4 incandescent bulb mounted in aluminum sleeve and capped with short cylindrical lens. Size, 1 7/64" long, 2 1/64" O.D. Shpg. Wt., 1 oz.

Dialco No.*	Volts	Amps	Hours	Net Each, Lots of 1-9	10-24	25-99
507-3906-1471-600	6	.20	1000	$1.71	$1.45	$1.33
507-3913-1471-600	14	.08	1500	1.80	1.51	1.37
507-3917-1471-600	28	.04	4000	1.65	1.38	1.26
507-3914-1471-600	14	.08	15000	1.92	1.61	1.48
507-3918-1471-600	28	.04	7000	1.95	1.63	1.50

***Lens Color:** Specify by changing 11th digit of part no. to: **1**, red, as listed; **2**, green; **3**, amber; **4**, blue; **5**, white; **6**, yellow; **7**, clear (e.g., 507-3906-1472-600, green lens).

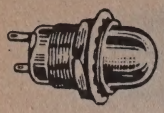
PERMANENT INDICATOR LIGHTS, NEON

Approximate life, 25,000 hours. With built-in resistors. Size, 1 53/64" long, 1/2" O.D. **Lens Color:** Specify by changing 11th digit of part no. to: **1**, red, as listed; **3**, amber; **5**, white; **7**, clear (e.g., 249-7841-0933-574, amber lens).

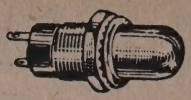
Dialco No. 249-7841-0931-574—Stovepipe lens, 100 K resistor.
Dialco No. 249-7866-0931-534—As above, but 33 K resistor.
Dialco No. 249-7841-1431-574—Short cylindrical, 100 K resistor.
Dialco No. 249-7866-1431-534—As above, but 33 K resistor.
Any Model—Net Each, 1–9 ..... **$2.21**
Net Each, 10–24 ..... **$1.98**; 25–99 ..... **1.86**

DIALIGHT Indicator Lights

DIALCO®


101-5030

101-3830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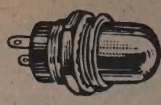
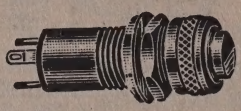

162-8430

177-8430


804-1710

801-1030

812-1030

SUBMINIATURE SERIES

For use with T-1¾ bulbs for 1.35–28 V. Bulb replaceable from front of panel. Military grade phenolic assures permanent isolation from ground. Fully insulated. Black nickel finish. Lockwasher and nut supplied. Size, 1⅜" long, ¾" O.D. Shpg. Wt., 2 oz. Less lamp.

OMNIDIRECTIONAL LENS

Radiate light in all directions. **Series 101-3830** and **140-3830** mount in 15/32" clearance hole, front or back of panel. **Series 101-5030** and **140-5030** mount in 17/32" clearance hole, front of panel. **Series 101-3830** has movable flange, others fixed flange. Solder terminals. Series 101 has stovepipe shaped lens; Series 140, cylindrical lens.

Dialco No. Front Mounting	Lens Color	Dialco No. Front or Back Mtg.	Net Ea., Lots of 1-9	10-24	25-99
101-5030-0971-201	Red	101-3830-0971-201	$1.90	$1.58	$1.41
101-5030-0972-201	Green	101-3830-0972-201	1.90	1.58	1.41
101-5030-0973-201	Amber	101-3830-0973-201	1.90	1.58	1.41
101-5030-0975-201	White	101-3830-0975-201	1.90	1.58	1.41
140-5030-1471-201	Red	140-3830-1471-201	1.90	1.58	1.41
140-5030-1472-201	Green	140-3830-1472-201	1.90	1.58	1.41
140-5030-1473-201	Amber	140-3830-1473-201	1.90	1.58	1.41
140-5030-1475-201	White	140-3830-1475-201	1.90	1.58	1.41

NEON SUBMINIATURE MS25257

Series 137-8836—Front mount in 15/32" hole. Built-in resistor (pat.). Accommodates C7A (NE-2D) lamp. For 105–125 VAC or DC. Size, 1½" x ⅝". Weight, 1½ oz. Less lamp. **Series 137-8864**—Same, but not for MS Drawing. Accommodates C9A (NE-2J) lamp.

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Yellow	137-8836-0933-552	MS25257-2	$3.03	$2.52	$2.28
Red	137-8836-0931-552	MS25257-4	3.03	2.52	2.28
Clear	137-8836-0937-552	MS25257-6	3.03	2.52	2.28
Red	137-8864-0931-512	.....	3.03	2.52	2.28
Amber	137-8864-0933-512	.....	3.03	2.52	2.28
White	137-8864-0935:512	.....	3.03	2.52	2.28
Yellow	137-8864-0936-512	.....	3.03	2.52	2.28
Clear	137-8864-0937-513	.....	3.03	2.52	2.28

INCANDESCENT SUBMINIATURE MS25256

Front mount in 15/32" hole. Use T-1¾ incandescent bulbs. Fully insulated. Size, 1 3/32" x ⅝". Weight, 1½ oz. Less lamp.

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Yellow	162-8430-0933-502	MS25256-2	$1.81	$1.52	$1.38
Green	162-8430-0932-502	MS25256-4	1.81	1.52	1.38
Red	162-8430-0931-502	MS25256-6	1.81	1.52	1.38
Clear	162-8430-0937-502	MS25256-8	1.81	1.52	1.38
White	162-8430-0975-502	MS25256-10	1.81	1.52	1.38
Blue	162-8430-0934-502	MS25256-12	1.81	1.52	1.38

WATER-TIGHT INCANDESCENT LIGHTS

Complete assemblies incandescent indicator lights in translucent colors. Water-tight, oil-tight, dust-tight on face of panel. With retained O-ring seals. Black, anodized aluminum mounting bushing. Internal-tooth lockwasher and mounting nut of cadmium-plated steel. Fully insulated brass terminals with elongated slots. Meet MIL-L-6723 and MIL-L-3661B. Max. projection back of panel, ⅝". Max. panel thickness, 3/16". Mount in 15/32" clearance hole front of panel with fixed flange. Size, O.D., 37/64".
Dialco Nos. 177-8430-0971-503 (Red), **177-8430-0972-503** (Green), **177-8430-0973-503** (Amber), **177-8430-0974-503** (Blue), **177-8430-0975-503** (White, translucent), **177-8430-0976-503** (Light Yellow). Net Each, 1–9 . . . . **$2.34**; 10–24 . . . . **$1.97**; 25–99 . . . . **$1.81**

PRESS-TO-TEST ASSEMBLIES

Meets requirements of MIL-L-7961B

A slight pressure on the face of the unit "breaks" the normal circuit and "makes" a test circuit. If lamp lights up when pressed in, it is satisfactory. If it fails to light, the lamp is defective. Equipped with three terminals: Two for "normal" circuit, the third for "test" circuit.

SERIES 804/803 (MS25331)

Mount from back in ⅝" clearance hole. Accommodates T-3¼ lamp with miniature bayonet base. Overall size, ⅞" x 2¼". Shpg. Wt., 1½ oz. Less lamp.

WITH MECHANICAL SHUTTER DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Clear	804-1710-0337-504	MS25331-1	$4.21	$3.61	$3.32
Red	804-1710-0331-504	MS25331-2	4.21	3.61	3.32
Green	804-1710-0332-504	MS25331-3	4.21	3.61	3.32
Amber	804-1710-0333-504	MS25331-4	4.21	3.61	3.32
Blue	804-1710-0334-504	.....	4.21	3.61	3.32

WITHOUT DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Clear	803-1710-0337-504	MS25331-5	$3.78	$3.20	$2.88
Red	803-1710-0331-504	MS25331-6	3.78	3.20	2.88
Green	803-1710-0332-504	MS25331-7	3.78	3.20	2.88
Amber	803-1710-0333-504	MS25331-8	3.78	3.20	2.88
Blue	803-1710-0334-504	.....	3.78	3.20	2.88

SERIES 801/800 (MS25041)

Similar to above, but mounts in 15/32" clearance hole, accommodates T-1¾ lamp with midget flange base, ⅝" x 1⅜". Less lamp.

WITH MECHANICAL SHUTTER DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Clear	801-1030-0337-504	MS25041-1	$3.50	$3.04	$2.83
Red	801-1030-0331-504	MS25041-2	3.50	3.04	2.83
Green	801-1030-0332-504	MS25041-3	3.50	3.04	2.83
Amber	801-1030-0333-504	MS25041-4	3.50	3.04	2.83
Blue	801-1030-0334-504	MS25041-10	3.50	3.04	2.83

WITHOUT DIMMER

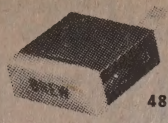
Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of 1-9	10-24	25-99
Clear	800-1030-0337-504	MS25041-5	$3.01	$2.57	$2.38
Red	800-1030-0331-504	MS25041-6	3.01	2.57	2.38
Green	800-1030-0332-504	MS25041-7	3.01	2.57	2.38
Amber	800-1030-0333-504	MS25041-8	3.01	2.57	2.38
Blue	800-1030-0334-504	MS25041-11	3.01	2.57	2.38

SERIES 812

Same as above, but with stovepipe lens.

Lens Color	Dialco No.	Net Each, Lots of 1-9	10-24	25-99
White	812-1030-0975-506	$3.23	$2.75	$2.52
Red	812-1030-0971-506	3.23	2.75	2.52
Green	812-1030-0972-506	3.23	2.75	2.52
Amber	812-1030-0973-506	3.23	2.75	2.52

SERIES 4800 AND 4800T TRIM-LINE INDICATOR LIGHTS



48

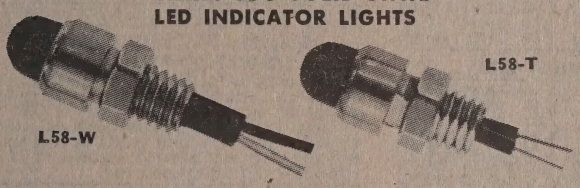
New indicator lights for thicker panels from .031″ to .100″. Snap into .325″ x .860″ panel opening. Tapered lens enhances front panel appearance. Red, amber and white (natural Nylon) lenses available; other colors and a variety of legends available upon request. Available with 6″ wire leads, Series 4800; .187″ male tab terminals, Series 4800T. Supplied with high brightness neon or subminiature incandescent lamps.

Leecraft No. for Lens Color			Rating	
Red	Amber	White	Volts	mA
48-3†	48-9	48-2	110–125	1/3 W
48H-3†	48H-9	48H-2	210–250	1/3 W
48G1-3	48G1-9	48G1-2	6.3	.200
48G3-3	48G3-9	48G3-2	14	80
48G5-3	48G5-9	48G5-2	28	40

†Neon; others incandescent. ‡To specify male tab terminals, add suffix **T** to model (e.g. 48H-3T).

Leecraft No.	Net Each 25-99	Net/100 100-249	Net/100 250-499
48-	$1.34	$ 79.36	$ 71.24
48H-	1.37	81.52	73.17
48G1-	1.74	103.16	98.45
48G3-	1.79	105.74	102.41
48G5-	1.72	101.47	98.34

SERIES L58 SOLID-STATE LED INDICATOR LIGHTS



L58-W

L58-T

High brightness, gallium phosphide LED's for computer, numerical control, medical equipment and many other electronics applications. Features include: 100,000 hour minimum life expectancy, low voltage/low current, fast response, ruggedness and wide viewing angle. **Forward voltage:** 2.8 VDC max. **Reverse voltage:** 5.0 VDC max. **Forward current:** 50 mA max. **Power dissipation:** 100 mW max. **Operating temperature:** −55° C to +100° C. **Luminous intensity:** 3.0 mcd, typ. Mounts in .191″ dia. hole.

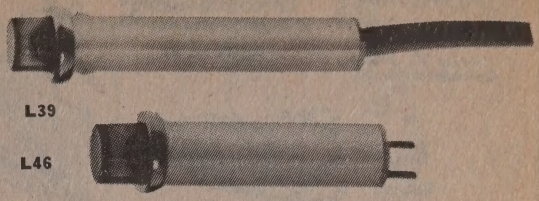
Leecraft No.	Color	Leads	Net Each 1-24	Net Each 25-99	Net/100 100-249
L58-R2-W	Red	Ins.	$2.39	$1.97	$185.46
L58-R2-T	Red	Bare	1.78	1.47	137.86
L58-G2-W	Green	Ins.	2.47	2.04	191.77
L58-G2-T	Green	Bare	1.84	1.52	142.55
L58-Y2-W	Yellow	Ins.	2.39	1.97	185.46
L58-Y2-T	Yellow	Bare	1.78	1.47	137.86

SERIES 49 MIDGET SCREW INDICATORS

Midget indicators for alarm devices, medical equipment, control panels, instrumentation, and other electronics applications. Supplied with incandescent lamp, installed, in choice of 6-7, 12-14, or 24-28 volts. Lens available include flat **F** or dome **D** shapes of translucent plastic in red (suffix **-51**), green (suffix **-52**), amber (suffix **-53**), white (suffix **-55**), or yellow (suffix **-56**). Other colors available upon request. Mount in 7/16″ dia hole in panels up to 1/4″ max thickness.

Leecraft No.	Volts	Lens	Net Each 25-99	Net/100 100-249	Net/100 250-499
49D-V1-	6–7	Dome	$1.16	$104.00	$ 93.00
49D-V2-	12–14	Dome	1.16	104.00	93.00
49D-V3-	24–28	Dome	1.48	133.00	118.00
49F-V1-	6–7	Flat	1.16	104.00	93.00
49F-V2-	12–14	Flat	1.16	104.00	93.00
49F-V3-	24–28	Flat	1.48	133.00	118.00

SOLID-STATE LED INDICATORS



L39

L46

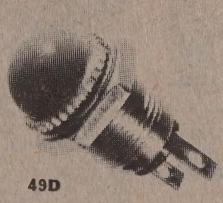
Gallium phosphide LED's in red, green and yellow for optimum light output and long life. Mount in 5/16″ dia hole. Series L45R and L46R are friction fit; speed nut is furnished for maximum security. Series L39U is snap-in type, also available with tabs. Available lenses include plastic hi-hat or flush, both transparent. Bezels are supplied on hi-hat lenses, optional on flat lenses. Connections are by 6″ wire leads for Series L39 and L41, 3/16″ male tabs for Series L45 and .040″ male pins for Series L46.

Leecraft No.*	Color	Volts	Net Each 25-99	Net/100 100-249	Net/100 250-499
L39UR-R6	Red	6	$2.18	$145.33	$132.12
L39UR-R12		12	2.18	145.33	132.12
L39UR-R24		24	2.14	142.89	129.90
L39UR-G6	Green	6	2.20	147.33	134.12
L39UR-G12		12	2.20	147.33	134.12
L39UR-G24		24	2.16	144.89	131.90
L39UR-Y6	Yellow	6	2.22	149.33	136.12
L39UR-Y12		12	2.22	149.33	136.12
L39UR-Y24		24	2.18	146.89	133.90
L41EN-R6	Red	6	2.35	156.92	142.65
L41EN-R12		12	2.35	156.92	142.65
L41EN-G6	Green	6	2.37	158.92	144.65
L41EN-G12		12	2.37	158.92	144.65
L41EN-Y6	Yellow	6	2.39	160.92	146.65
L41EN-Y12		12	2.39	160.92	146.65
L45RN-R6	Red	6	2.48	165.31	150.28
L45RN-R12		12	2.48	165.31	150.28
L45RN-R24		24	2.44	162.87	148.06
L45RN-G6	Green	6	2.50	167.31	152.28
L45RN-G12		12	2.50	167.31	152.28
L45RN-G24		24	2.46	164.87	150.06
L45RN-Y6	Yellow	6	2.52	169.31	154.28
L45RN-Y12		12	2.52	169.31	154.28
L45RN-Y24		24	2.48	166.87	152.06
L46RN-R6	Red	6	2.75	183.26	166.60
L46RN-R12		12	2.75	183.26	166.60
L46RN-R24		24	2.71	180.80	164.36
L46RN-G6	Green	6	2.77	185.26	168.60
L46RN-G12		12	2.77	185.26	168.60
L46RN-G24		24	2.73	182.80	166.36
L46RN-Y6	Yellow	6	2.79	187.26	170.60
L46RN-Y12		12	2.79	187.26	170.60
L46RN-Y24		24	2.75	183.26	166.60

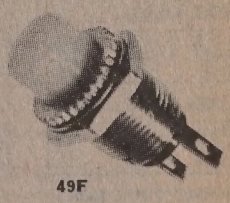
***ADD SUFFIXES FOR HOUSING AND LENS COLOR**

HI-HAT LENS

Housing Color	Lens Color: Red	Green	White	Yellow	Clear
Black	1111	1112	1115	1116	1117
White	2111	2112	2115	2116	2117
FLUSH LENS					
Black	1311	1312	1315	1316	1317
White	2311	2312	2315	2316	2317

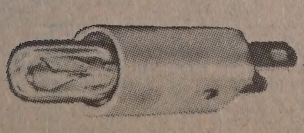


49D



49F

LAMPHOLDERS FOR T-1 3/4 SUBMINIATURE WEDGE-BASE LAMPS



52-07

Series 52-00 Wedge-Base Lampholder—Ultra-compact lampholder minimizes space requirements. Lamps can be inserted or removed without tools. Lamps seat firmly in socket and will not freeze nor shake loose. A variety of mounting styles are optional including horizontal and vertical brackets for PC boards. Any number of sockets can be mounted on a strip, or wired to customer specifications. **No. 52-07:** With 7/16″ male tab terminals that fit female quick-connect terminals. **No. 52-207:** With built-in wire leads 6″ long, stripped 1/2″ at ends, UL rated at 80° C, black.

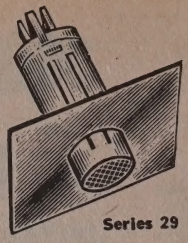
Net Each, Lots of 25–99 ..... **$ 0.54**

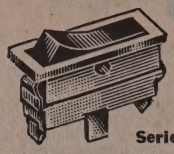
Net per 100: Lots of 100–249 ..... **$37.39**; 250–499 ..... **20.38**

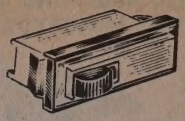
LEECRAFT® Indicator Lights

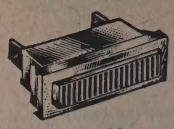
Series 32, 32R Cylindrical Lens

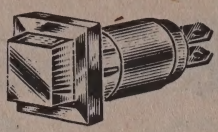
Series 36, 41


Series 29


Series 71


Series 51


Series 31 and 31D


Series 32R Square Lens

SERIES 32, 32R AND 35 SNAPLITE™ INDICATOR LIGHTS

UL and CSA Approved. Wide variety of lens and housing colors. Available with either high brightness neon or miniature incandescent lamps. Supplied with 6″ insulated 18-ga. wire leads; available with .187″ tab terminals at slightly higher price by adding suffix **T** to model (e.g., 32-G1-2111**T**).

WITH CYLINDRICAL LENS*

Leecraft No.*	Rating		Net Ea.▲	Net per 100▲	
	Volts	mA	25-99	100-249	250-499
32†	110–125	§	$1.22	$73.59	$66.09
32-G1	6.3	200	1.60	94.48	91.51
32-G2	6	40	1.84	116.62	111.41
32-G3	14	80	1.69	97.59	96.29
32-G5	28	40	1.60	94.06	92.42
35†	210–250	§	1.22	73.59	66.09

WITH CHROME BEZELS*

Leecraft No.*‡	Rating		Net Ea.▲	Net per 100▲	
	Volts	mA	25-99	100-249	250-499
32R†	110–125	§	$1.34	$79.36	$71.24
32RG1	6.3	200	1.69	100.42	95.82
32RG2	6	40	1.92	123.24	112.18
32RG3	14	80	1.75	103.86	100.57
32RG5	28	40	1.69	99.65	96.58
35R†	210–250	§	1.34	79.36	71.24

†Neon; all others incandescent. ‡Fits .500″–.513″ hole size; for .514″–.519″ hole size, add letter **C** (i.e., 32**CR**, 32**CR**G1, etc); same price. §⅓ W. ▲Prices listed are for white housing; black and red housings priced slightly higher.

* ADD LENS, COLOR SUFFIXES

Add suffix for lens and housing color desired. (Example: 32-**1113** = indicator with black housing and amber lens.) Add **T** designation to end of color suffix when ordering indicator with tab terminals. (Example: 32-1113**T** = indicator with black housing, amber lens and tab terminals.)

*FLAT CYLINDRICAL LENS

Housing Color•	Lens Color			
	Red	Amber	Clear	White
Black	1111	1113	1117	1115
White	2111	2113	2117	2115
Red#	3111	3113	3117	3115

*DOME LENS

Black	1211	1213	1217	1215
White	2211	2213	2217	2215
Red#	3211	3213	3217	3215

*FLUSH TYPE LENS

Black	1311	1313	1317	1315
White	2311	2313	2317	2315
Red#	3311	3313	3317	3315

*HI-HAT TYPE LENS

Black	1511	1513	1517	1515
White	2511	2513	2517	2515
Red#	3511	3513	3517	3515

*FLUSH SQUARE

White	R2711	R2713	R2717	R2715

*SQUARE LENS

White	R2911	R2913	R2917	R2915

#Available only in minimum quantity of 250. •Black and red housings available only with neon lamps.

SERIES 36 AND 41 TINEON™ MINIATURE INDICATORS

Supplied with either high brightness neon or miniature incandescent lamps. Fits 5/16″ dia. hole; includes speed nut. Series 41-00 used with incandescent lamps or neon lamps without resistor. Series 36-00 supplied with neon lamps and built-in resistor. Available with one or two-digit legends hot stamped on lens and in multiple strip assemblies. Available with or without bezel in a variety of housing colors, with flush and hi-hat lens. Wire leads, 5/16″ mtg. hole.

WITHOUT ALUMINUM BEZEL

Leecraft No.*	Rating		Net Ea.▲	Net per 100▲	
	Volts	mA	25-99	100-249	250-499
36N†	110–125	‡	$1.15	$73.59	$66.09
36HN†	210–250	‡	1.15	73.59	66.09
41N†	250 max	‡	1.10	73.59	62.02
41N-G1	6.3	200	1.43	91.07	88.18
41N-G2	6	40	1.68	115.08	109.88
41N-G3	14	80	1.48	95.86	94.37
41N-G5	28	40	1.43	91.38	89.09

WITH ALUMINUM BEZEL

36EN†	110–125	‡	$1.41	$89.46	$77.99
36HEN†	210–250	‡	1.41	89.46	77.99
41EN†	250 max	‡	1.32	83.70	74.61
41EN-G1	6.3	200	1.56	100.25	93.97
41EN-G2	6	40	1.93	130.59	121.89
41EN-G3	14	80	1.66	104.54	99.51
41EN-G5	28	40	1.57	100.74	95.73

†Neon; all others incandescent. ‡⅓ W. Prices listed are for white housing; black and red housings priced the same or slightly higher.

*ADD LENS, COLOR SUFFIXES 36-N AND HN, 41-N COLORS

Add suffix for color desired. (Example: 36HN-**3311** = indicator with red housing and red lens.)

Housing Color	Lens Color			
	Red	Amber	White	Clear
Black	1311	1313	1315	1317
White	2311	2313	2315	2317
Red	3311	3313	3315	3317
Gray	7311	7313	7315	7317

36-EN AND HEN, 41-EN COLORS

Add suffix for color desired. (Example: 36HEN-**2311** = 210–250 volts with red flush type lens.) With aluminum bezel, white housing.

Lens	Red	Amber	Clear	White
Flush	2311	2313	2317	2315
Hi-Hat	2111	2113	2117	2115

SERIES 29 REAR MOUNT INDICATOR LIGHTS

Lights snap in from rear of panel, locking in place with no additional hardware needed. Removable by compressing release mechanism on unit. Mtg. hole .510″ to .520″. Available with either wire leads or male tab terminals. Designate tabs by placing **T** after part number when ordering (e.g., 29H-2411**T**). Incandescent versions available, write for information and pricing. UL and CSA Approved. Rated ⅓ W.

Leecraft Number*	Volts	Net Ea.	Net per 100	
		25-99	100-249	250-499
29	125	.....	.....	$77.29

*Add color suffix for housing and lens color desired. (Example: 29H-**2431T** = Indicator with white housing, red lens, 250 volts and tab terminals.)

Housing Color	Lens Color			
	Red	Amber	Clear	White
White	2431	2433	2437	2435
Black	1131	1133	1137	1135

SERIES 71 ROCK-A-LITE® LIGHTED ROCKER SWITCH

Ultra-compact, lighted rocker switch minimizes arcing. Snap-in mounting panel opening, 1.281″ x .395″. With neon or incandescent lamps; .250″ brass tab terminals, .187″ tabs available. CSA and UL Listed. Size, 1 3/32″ w. x 1 5/16″ d. x 1 7/16″ length.

Lee. No.	Volts	Lamp Cur.		Net/ 100#
71*	125	⅓ W	....	$124.80
71H*	250	⅓ W	....	124.80
71-G1	6.3	.20 A	....	157.37
71-G3	14	.08 A	....	152.91
71-G5	28	.04 A	....	149.95

*Neon; all others incandescent. #Minimum quantity of 250.
Add suffix for lens color. (Example: 71H-**2431T** = 250 volt rocker with red lens, standard .250″ tab terminals. For .187″ terminals add 3 after T (e.g., 71H-2431T**3**).

Red	Green	Amber	Blue	White	Clear
2431T	2432T	2433T	2434T	2435T	2437T

SERIES 51 SLIDELITE™ SLIDE/SWITCH PILOT LIGHTS

Available in either high-brightness neon or miniature incandescent lamp. Snap-in mounting in panel hole 1.281″ x .395″. Available with either wire leads or male quick-connect terminals. SPST switch and self-wiping contacts rated 6 amps at 125 volts. UL and CSA Approved.

Lee. No.*	Volts	Lamp Cur.	Net Each 1-24	Net Each 25-99	Net/ 100#
51†	110–125	⅓ W	.....	.....	$129.73
51-G1	6.3	.2 A	.....	.....	167.77
51-G3	12–14	.08 A	.....	.....	162.58
51-G5	28	.04 A	.....	.....	159.13
51H†	210–250	⅓ W	.....	.....	129.73

*Add suffix for lens color desired. (Example: 51H-**2431** = 250-volt Slidelite, with red lens.) Part numbers listed have tab terminals. For wire leads omit **T** at end of number, (e.g., 51-**2431T** becomes 51-**2431**). #Minimum quantity of 250.

Red	Green	Amber	Blue	White	Clear
2431T	2432T‡	2433T	2434T‡	2435T	2437T

†Neon; all others incandescent. ‡Colors not recommended for neon.

SERIES 31 AND 31D INDICATORS

Provides maximum message display in compact area. Includes long-life high brightness neon or incandescent lamp. Series 31 and 31H equipped with 18-gauge insulated leads. Series 31T and 31HT equipped with .250″ brass tabs; .187″ tabs also available. White nylon housing with chrome-plated bezel. Mtg. hole 1.281″ x .395″; ½″ d. behind panel. Rated ⅓ watt at 110–125 volts. Series 31D special units incorporate two lamps, 3 terminations, in standard housing; can activate two legends separately or simultaneously, write for complete information. UL, CSA Approved.

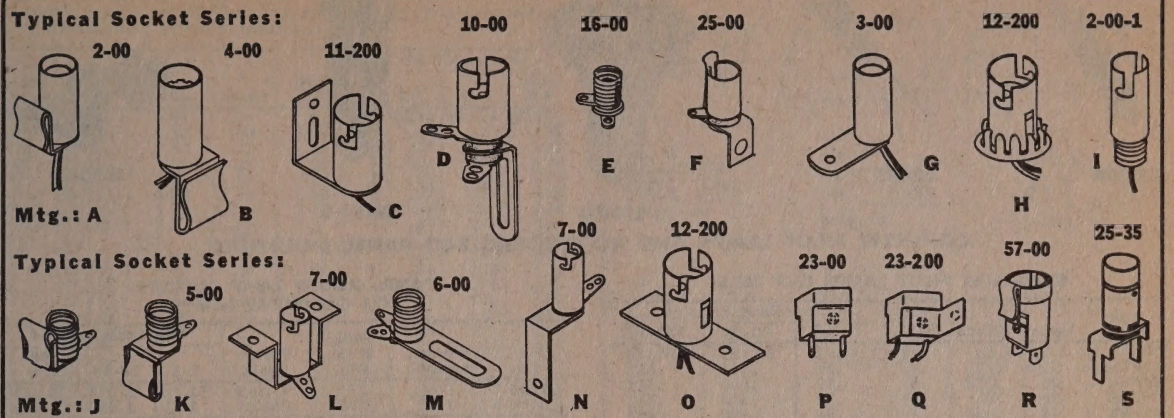
Leecraft No.*	Rating		Net Ea.	Net per 100	
	Volts	mA	25-99	100-249	250-499
31†	110–125	‡	$1.32	$79.36	$69.46
31-G1	6.3	200	1.77	101.36	96.58
31-G2	6	40	2.01	128.96	122.57
31-G3	14	80	1.75	104.75	101.35
31-G5	28	40	1.69	100.90	97.63
31H†	210–250	‡	1.32	79.36	69.46
31D†	110–125	‡	.....	.....	122.63

*When ordering, add suffix for lens color desired (e.g., 31H-**2111** for 210–250 V light with red lens). All above lights also available with wire leads; to order omit suffix **T** (31H2111**T**).

Red	Amber	Clear	White	Blue	Green
2111T	2113T	2117T	2115T	2114T	2112T

†Neon; all others incandescent. ‡ ⅓W.

OPEN TYPE BRACKET-MOUNTED LAMP SOCKETS



Sockets illustrated are typical for Series indicated (top number). Mountings (bottom letter) are referred to in tables below. Terminals or leads as stated below.

Includes heavy cadmium plated steel mounting brackets, .025″–.032″; less lens and lamp. Wide variety of bracket styles, available with wire leads or solder terminals. Many other types are available; write for information.

SERIES 2-00 MINIATURE BAYONET

Built-in 22 gauge wire leads, 6″ long, for low voltage incandescent lamps such as T-3¼, G-3½ or G-4½. Includes insulating sleeve, except models with suffix **-1**, which have bracket grounded to shell.

Leecraft No.	Mtg.	Net Each 1-24	Net Each 25-99	Net/ 100
2-01	A	$0.91	$0.54	$43.30
2-02	B	.91	.54	43.30
2-05	C	.91	.54	43.30
2-06	D	.91	.54	43.30
2-07	E	.89	.53	42.51
2-08	F	.91	.54	43.30
2-12	G	.91	.54	43.30
2-08-1	F	.87	.52	41.33
2-40-1	H	.91	.55	43.30
2-30N-1	I	1.10	.81	60.60

SERIES 3-00 MINIATURE BAYONET

Housed in molded phenolic for NE-51 neon, low voltage incandescent lamps. Built-in 6″ wire leads. Rated 75 watts at 125 volts. UL and CSA Approved.

3-01	A	$0.96	$0.65	$51.95
3-05	C	.96	.65	51.95
3-06	D	.96	.65	51.95
3-08	F	.96	.65	51.95
3-12	G	.96	.65	51.95

SERIES 7-00 MINIATURE BAYONET

Tinned solder terminals, for low voltage incandescent lamps such as T-3¼, G-3½ or G-4½. Insulating sleeve available.

7-01	A	$0.81	$0.48	$34.64
7-02	B	.81	.48	34.64
7-06	D	.81	.48	34.64
7-07	E	.79	.47	33.69
7-08	F	.81	.48	34.64
7-11	L	.81	.48	34.64
7-12	G	.81	.48	34.64
7-20	N	.81	.48	34.64
7-35	S	.97	.70	52.47

SERIES 5-00 MINIATURE SCREW

Tinned solder terminals, 60°–90° apart, for low voltage incandescent lamps.

Leecraft No.	Mtg.	Net Each 1-24	Net Each 25-99	Net/ 100
5-03	J	$0.85	$0.56	$40.47
5-04	K	.85	.56	40.47
5-05	C	.85	.56	40.47
5-06	D	.85	.56	40.47
5-07	E	.78	.52	37.11
5-08	F	.85	.56	40.47

SERIES 16-00 MIDGET SCREW

Solder terminals, for P-2½, T-1¾ lamp.

16-07	E	$0.90	$0.61	$49.11
16-08	F	.94	.64	51.00

SERIES 4-00 CANDELABRA SCREW

Heavy molded phenolic housing extends well above socket shell; for incandescent or neon lamps, such as NE-45, S6 or 10C7. Rated 75 watts at 125 volts; 18 gauge wire leads. UL and CSA Approved.

4-01	A	$0.96	$0.65	$51.95
4-02	B	.96	.65	51.95
4-05	C	.96	.65	51.95
4-06	D	.96	.65	51.95
4-08	F	.96	.65	51.95
4-12	G	.96	.65	51.95

SERIES 6-00 CANDELABRA SCREW

Tinned solder terminals, for incandescent lamps such as G6 and S6.

6-05	C	$0.88	$0.61	$42.73
6-06	D	.88	.61	42.73
6-07	E	.81	.56	39.17
6-08	F	.88	.61	42.73
6-11	L	.88	.61	42.73
6-13	M	.88	.61	42.73

SERIES 23-00 WEDGE BASE

Rapid insertion and secure positioning of wedge lamps. Molded housing. Types 23-07 and 23-24 have slotted hole, double contact terminals; others have wire leads.

23-07	P	$0.79	$0.55	$42.12
23-24	Q	.....	.....	26.17#
23-207	P	.91	.65	51.95
23-224	Q	.....	.....	36.01#

#Minimum quantity of 250.

SERIES 10-00, 11-200 SINGLE CONTACT CANDELABRA BAYONET

Similar to double contact candelabra types. Series 10-00 has solder terminals; 11-200 has wire leads.

Leecraft No.	Mtg.	Net Each 1-24	Net Each 25-99	Net/ 100
10-06	D	$0.91	$0.55	$43.30
10-08	F	.91	.55	43.30
11-271	C	.87	.62	49.59
11-272	D	.87	.62	49.59

SERIES 12-200 DOUBLE CONTACT CANDELABRA BAYONET

Wire leads, for incandescent and neon lamps such as NE-48, G6, S6 or 10C7. Brackets of .035″–.042″ steel (12-240 is clip mounted). Contacts mounted in phenolic disc, separately sprung by small coils. UL and CSA Approved.

12-207	E	$1.09	$0.74	$67.46
12-225	O	1.09	.74	67.46
12-240	H	1.16	.80	71.84
12-271	C	1.09	.74	67.46
12-272	D	1.09	.74	67.46

SERIES 57-00 DOUBLE CONTACT CANDELABRA BAYONET

Molded phenolic housing, with male tab terminals that fit into terminal boards with female quick-connect terminals. Brackets of .035″–.042″ steel. For incandescent and neon lamps such as NE-48, S6. Rated 75 watts. UL and CSA Approved.

57-24	Q	.....	.....	$29.02#
57-45	R	$0.96	$0.65	$51.95

#Minimum quantity of 250.

SERIES 25-00 MIDGET GROOVED

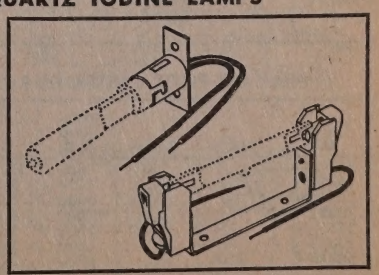
Subminiature sockets for T-1¾ midget grooved base lamps, including lens-end lamps. Tinned solder lugs (available with wire leads). Size, ⅝″ h.; spaced on centers as close as ¼″.

25-06	D	$1.10	$0.81	$70.25
25-08	F	1.10	.81	70.25
25-12	G	1.10	.81	70.25
25-35	S	1.30	1.01	94.44

LAMPHOLDERS FOR SINGLE-ENDED AND DOUBLE-ENDED QUARTZ IODINE LAMPS

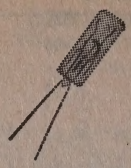
Series 22-25 Double Contact, Bayonet Base—Single-ended socket permits lamp to be positioned accurately, securely while minimizing possibility of shaking loose from vibration. Swift, simple installation. Eliminates extra bulb handling required with screw-in type sockets. Optimum heat sink for cool operation. Commonly used for stage, film and TV lighting; optical devices and instruments; and, general lighting. With 6″ Teflon* insulated leads. UL and CSA rated at 200° C. Net Ea., Lots 1–24 **$2.24**; 25–99 **$ 1.68**
Net per 100: Lots of 100–249..... **$130.55**; 250–499..... **123.18**

Series 26-00 Recessed Single Contact—For double ended recessed single contact (RSC) base lamps. Used primarily for sign lighting, photocopy equipment, general floodlighting. Heavy molded ceramic housing, silver-plated copper contacts; insulated bracket mounting. Rated 600 V at 2000 W. **No. 26-07:** With ¼″ male tab terminal that fits std. female quick connect terminals. **No. 26-207:** With built-in wire lead 4″ lg., stripped ½″ on ends, UL and CSA Approved to 200° C. Net Each, Lots of 1–24 **$1.64**; 25–99 **$ 1.47**
Net per 100: Lots of 100–249..... **$128.78**; 250–499..... **120.07**

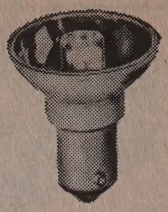


*Reg. DuPont trademark.

120PSB



120PS



120RC

30154-0

30099-0

COMPLETE PILOT LAMPS AND ACCESSORIES FOR PANEL MOUNTING

SLIDE-BASE PILOT LAMPS (T-2 BULB)

Lamp No.	Volts	Amps	M.S. C.P.	Net Each, Lots of 1-9	10-99	100-499
6PSB	6	.14	.12	$0.90	$0.413	$0.359
12PSB	12	.17	.35	.90	.546	.511
24PSB	24	.073	.5	.90	.546	.511
28PSB	28	.04	.29	.90	.546	.511
48PSB	48	.053	.7	.90	.546	.511
60PSB	60	.05	.73	.90	.546	.511
120PSB	120	.025	.36	1.24	.731	.611

PANEL MOUNT LAMP SOCKETS

Part No.	Overall Length	Mtg. Hole Dia.	Material	Net Each, Lots of 1-9	10-99	100-499
30099-0	1 13/16"	.75"	Metal	$1.44	$0.869	$0.797
30152-0	1 11/16"	.5"	Phenolic	.54	.331	.303
30154-0	1 5/16"	.5"	Phenolic	.54	.331	.303

COLOR LENSES FOR 30099-0 SOCKET

Lens Color	Jeweled Number	Transparent Number	Fluted Number	Translucent Number	Flat-top Translucent Number
Red	30100-0	30110-0	30120-0	30130-0	30200-0
Green	30102-0	30112-0	30122-0	30132-0	30212-0
Blue	30103-0	30113-0	30124-0	.....	30213-0
Yellow	.....	30114-0	.....	30131-0	30214-0
Amber	30106-0	30111-0	30126-0	.....	.....
White	.....	.....	.....	30133-0	30223-0
Clear	.....	30116-0	30125-0	.....	.....

Prices for jeweled lenses. Net Each: Lots of 1–9 ..... $ 0.60
10-99 ..... $0.364; 100–499 ..... 0.334
Prices for transparent, fluted, and translucent lenses.
Net Each: Lots of 1–9 ..... $ 0.27
10–99 ..... $0.166; 100–499 ..... 0.138
Prices of flat-top translucent lenses.
Net Each: Lots of 1–9 ..... $ 0.54
10–99 ..... $0.331; 100–499 ..... 0.303

LENSES FOR 30152 SOCKET

Lens Color	Lens No. Round	Lens No. Square	Net Each, Lots of 1-9	10-99	100-499
Red	30160-0	30170-0	$0.24	$0.15	$0.143
Clear	30161-0	30171-0	.24	.15	.143
Amber	30162-0	30172-0	.24	.15	.143
White	30163-0	30173-0	.24	.15	.143
Green	30164-0	30174-0	.24	.15	.143
Blue	30165-0	30175-0	.24	.15	.143

COLOR END CAPS FOR 30154 SOCKET

Cap Color	Profax Cap Nos. Small	Profax Cap Nos. Large	Pyrex Cap Nos.	Net Each, Lots of 1-9	10-99	100-499
Red	37001-0	38001-0	38071-0	$0.16	$0.099	$0.091
Yellow	37002-0	38002-0	38072-0	.16	.099	.091
White	37003-0	38003-0	38073-0	.16	.099	.091
Green	37004-0	38004-0	38074-0	.16	.099	.091
Blue	37005-0	38005-0	38075-0	.16	.099	.091
Orange	.....	38007-0	.....	.16	.099	.091
Pearl-White	.....	38006-0	.....	.16	.099	.091

BI-PIN BASE PILOT CARTRIDGE LAMPS (T-2 BULB)

Lamp No.	Volts	Amps	Avg. End F.C.	Net Each, Lots of 1-9	10-99	100-499
30021-0	6	.8	550	$1.36	$0.829	$0.759
30031-0	12	2	2400	1.36	.829	.759
30041-0	24	1.7	3000	1.36	.829	.759
30051-0	28	1.1	1500	1.36	.829	.759
30061-0	48	2.5	1500	1.36	.829	.759
30071-0	60	3	1800	1.36	.829	.759
30081-0	120	3	1000	1.36	.829	.759

PANEL MOUNT LAMP SOCKETS FOR CARTRIDGE LAMPS

Part No.	Overall Length	Mtg. Hole Dia.	Terminals	Net Each, Lots of 1-9	10-99	100-499
30095-0	1 3/8"	.375"	Turret	$1.71	$1.035	$0.949
30096-0	1 3/8"	.375"	Solder	1.71	1.035	.949

LENSES FOR 30095 & 30096 SOCKETS

Lens Color	Lens No. Transparent	Lens No. Translucent	Net Each, Lots of 1-9	10-99	100-499
Amber	30140-0	.....	$0.63	$0.382	$0.35
Clear	30141-0	.....	.63	.382	.35
Red	30142-0	30147-0	.63	.382	.35
Blue	30143-0	30148-0	.63	.382	.35
Green	30144-0	30149-0	.63	.382	.35
Yellow	.....	30145-0	.63	.382	.35
White	.....	30146-0	.63	.382	.35

WIRE-LEAD PILOT LAMPS (T-2 BULB)

Lamp No.	Volts	Amps	M.S. C.P.	Net Each, Lots of 1-9	10-99	100-499
6PS	6	.14	.12	$0.68	$0.413	$0.359
12PS	12	.17	.35	.68	.413	.359
24PS	24	.073	.5	.68	.413	.359
28PS	28	.04	.29	.68	.413	.359
48PS	48	.053	.7	.68	.413	.359
60PS	60	.05	.73	.68	.413	.359
120PS	120	.025	.36	.93	.548	.459
120PS/6	120	.052	1.43	.93	.548	.459

ANNUNCIATOR LAMPS AND COLOR CAPS

Long life annunciator lamps are designed for use in elevator panels, pushbutton stations, indirect decorative lighting and general signalling applications where a relatively high candlepower miniature light source is necessary. A high degree of light control is made possible by a self-contained aluminized reflector. Unique lighting and signalling effects are attainable using pyrex color caps shown in the chart. Ordering Data: For clear lamps, specify lamp number. For colored lamps, specify color as follows: 6RB/Red, etc. Caps are cemented to lamps when ordered in this manner. Caps may also be ordered separately.

ANNUNCIATOR LAMPS

Lamp No.	Base	Volts	Amps	Watts	Net Each, Lots of 1-9	10-99	100-499
6RC	Cand. Screw	6	.14	.8	$1.36	$0.828	$0.759
12RC	Cand. Screw	12	.17	2	1.36	.828	.759
24RC	Cand. Screw	24	.073	1.7	1.36	.828	.759
28RC	Cand. Screw	28	.04	1.1	1.36	.828	.759
48RC	Cand. Screw	48	.053	2.5	1.36	.828	.759
60RC	Cand. Screw	60	.050	3	1.36	.828	.759
120RC	Cand. Screw	120	.025	3	1.72	1.041	.849
6RB	Min. Bay	6	.140	.8	1.36	.828	.759
12RB	Min. Bay	12	.17	2	1.36	.828	.759
24RB	Min. Bay	24	.073	1.7	1.36	.828	.759
28RB	Min. Bay	28	.04	1.1	1.36	.828	.759
48RB	Min. Bay	48	.053	2.5	1.36	.828	.759
60RB	Min. Bay	60	.05	3	1.36	.828	.759
120RB	Min. Bay	120	.025	3	1.72	1.041	.849

COLOR CAPS FOR ANNUNCIATOR LAMPS

Cap Color	Cap No.	Net Each, Lots of 1-9	10-99	100-499
Red	38071-0	$0.16	$0.099	$0.091
Yellow	38072-0	.16	.099	.091
White	38073-0	.16	.099	.091
Green	38074-0	.16	.099	.091
Blue	38075-0	.16	.099	.091

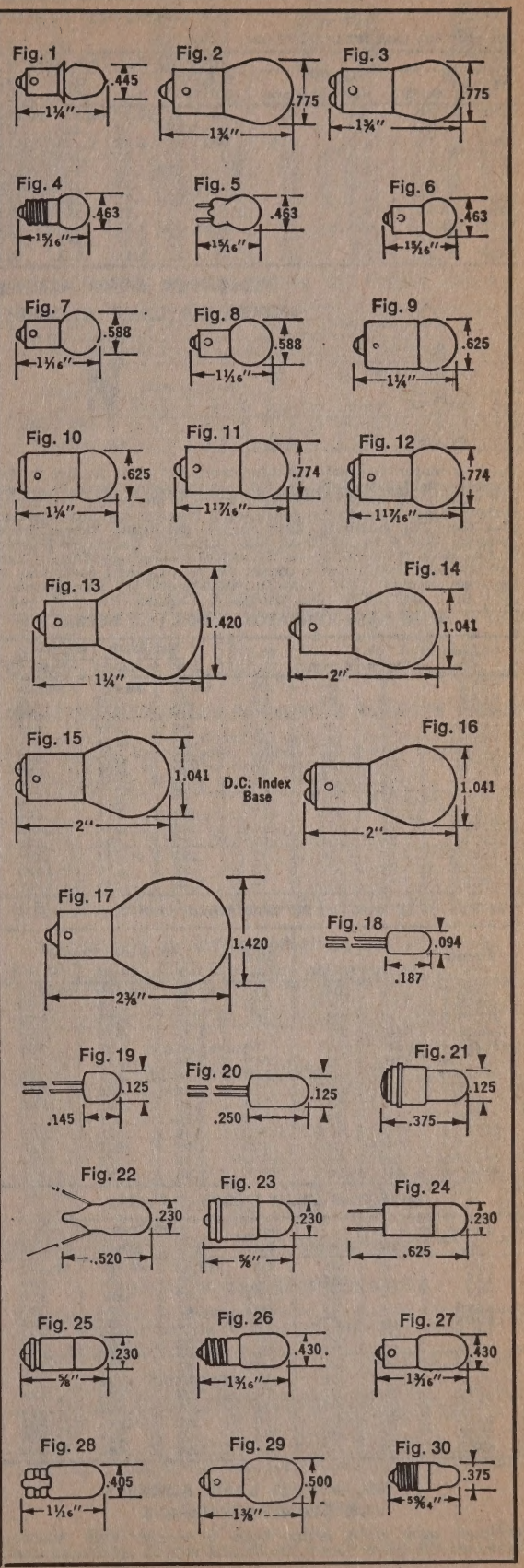
INDUSTRY STANDARD LAMPS

Available in various bulb sizes and voltages. For detailed specifications information, write for catalog SD-1A.

Lamp No.	Bulb	Volts	Amps	M.S. C.P.	Fig.	Net Each, Lots of 1-9	10-49	100-499
PR2	B-3½	2.38	.50	.80	1	$0.36	$0.213	$0.179
PR3	B-3½	3.57	.50	1.50	1	.37	.221	.186
PR4	B-3½	2.33	.27	.40	1	.37	.221	.186
PR6	B-3½	2.47	.30	.45	1	.37	.221	.186
PR7	B-3½	3.7	.30	.90	1	.43	.256	.215
PR12	B-3½	5.95	.50	3.10	1	.37	.221	.186
PR13	B-3½	4.75	.50	2.20	1	.37	.221	.186
PR18	B-3½	7.2	.55	5.5	1	.46	.278	.234
6S6	S-6	120	6W	.....		.54	.320	.270
7C7	C-7	115–125	7W	.....		.44	.260	.220
13	G-3½	3.7	.30	.98	4	.26	.159	.134
14	G-3½	2.47	.30	.50	4	.26	.159	.134
27	G-4½	4.9	.30	1.4	7	.32	.190	.160
31	G-4½	6.15	.30	2.0	7	.40	.241	.203
41	T-3¼	2.5	.50	.50	26	.42	.253	.213
43	T-3¼	2.5	.50	.50	27	.42	.253	.213
44	T-3¼	6.3	.25	.90	27	.23	.137	.115
45	T-3¼	3.2	.35	.50	27	.36	.215	.181
46	T-3¼	6.3	.25	.90	27	.20	.121	.103
47	T-3¼	6.3	.15	.52	27	.23	.137	.115
48	T-3¼	2.0	.06	.04	26	.40	.24	.204
49	T-3¼	2.0	.06	.04	27	.34	.201	.171
51	G-3½	7.5	.22	1.0	6	.22	.131	.110
53	G-3½	14.4	.12	1.0	6	.25	.147	.124
53X	G-3½	14.4	.12	1.0	6	.33	.199	.167
55	G-4½	7.0	.41	2.0	8	.25	.149	.125
57	G-4½	14.0	.24	2.0	8	.24	.141	.119
57X	G-4½	14.0	.24	2.0	8	.27	.165	.139
63	G-5	7.0	.63	3.0	11	.33	.196	.165
67	G-6	13.5	.59	4.0	11	.31	.184	.155
81	G-5	6.5	1.02	6.0	11	.37	.222	.187
82	G-5	6.5	1.02	6.0	12	.37	.222	.187
87	S-8	6.8	1.91	15.0	14	.58	.35	.294
88	S-8	6.8	1.91	15.0	15	.58	.349	.293
89	G-5	13.0	.58	6.0	11	.33	.197	.166
93	S-8	12.8	1.04	15.0	14	.49	.294	.247
93IF	S-8	12.8	1.04	.....	14	.75	.447	.376
112	TL-3	1.2	.22	.....	30	.26	.159	.134
123	G-3½	1.25	.30	.10	4	.23	.168	.141
136	G-4½	1.25	.60	.20	7	.37	.221	.189
158	T-3¼	14.0	.24	2.0	28	.31	.184	.155
161	T-3¼	14.0	.19	1.0	28	.32	.19	.16
168	T-3¼	14.0	.35	3.0	28	.33	.197	.166
194	T-3¼	14.0	.27	2.0	28	.31	.187	.157
222	TL-3	2.25	.25	.....	30	.38	.228	.192
301	G-5	28.0	.17	3.0	9	.69	.413	.347
302	G-5	28.0	.17	3.0	10	.65	.393	.33
303	G-6	28.0	.30	6.0	11	.65	.393	.33
305	S-8	28.0	.51	15.0	14	.79	.475	.399
307	S-8	28.0	.67	21.0	14	.97	.584	.491
308	S-8	28.0	.67	21.0	15	1.15	.687	.573
309	S-11	28.0	.9	32.0	17	1.30	.778	.654
313	T-3¼	28.0	.17	3.5	27	.52	.315	.265
327	T-1¾	28.0	.04	.34	23	.98	.588	.494
328	T-1¾	6.0	.20	.34*	23	.58	.341	.285
330	T-1¾	14.0	.08	.5	23	1.31	.787	.661
331	T-1¾	1.35	.06	.006	23	1.60	.962	.808
334	T-1¾	28.0	.04	.34	25	1.47	.881	.74
344	T-1¾	10.0	.014	.004	23	2.25	1.347	1.18
382	T-1¾	14.0	.08	.30	23	1.95	1.169	.982
387	T-1¾	28.0	.04	.30	23	.99	.594	.499
388	T-1¾	28.0	.04	.30	25	2.51	1.503	1.263
680	T-1	5.0	.06	.03	20	3.16	1.898	1.594
682	T-1	5.0	.06	.029	21	3.82	2.293	1.926
683	T-1	5.0	.06	.05	20	3.16	1.898	1.594
685	T-1	5.0	.06	.048	21	3.82	2.293	1.926
713	T-1	5.0	.075	.09	20	3.16	1.898	1.594
714	T-1	5.0	.075	.08	21	3.82	2.293	1.926
715	T-1	5.0	.115	.15	20	3.16	1.898	1.594
718	T-1	5.0	.115	.132	21	3.82	2.293	1.926
1003	B-6	12.8	.94	15.0	2	.48	.29	.244
1004	B-6	12.8	.94	15.0	3	.48	.29	.244
1034	S-8	12.8	1.80	32.0	16	.53	.319	.268
		14.0	.59	3.0				
1076	S-8	12.8	1.80	32.0	15	.75	.447	.376
1133	RP-11	6.2	3.91	32.0	13	.91	.547	.46
1156	S-8	12.8	2.10	32.0	14	.63	.38	.319
1157	S-8	12.8	2.10	32.0	16	.53	.319	.268
		14.0	.59	3.0				
1176	S-8	12.8	1.34	21.0	16	.62	.371	.312
		14.0	.59	6.0				
1183	RP-11	5.5	6.25	50.0	13	1.13	.68	.571
1195	RP-11	12.5	3.0	50.0	13	1.75	1.037	.871
1445	G-3½	14.4	.135	.7	6	.31	.187	.157
1447	G-3½	18.0	.15	1.5	4	.33	.195	.163
1495	T-4½	28.0	.30	6.0	29	.73	.435	.366
1728	T-1¾	1.35	.06	.006	22	.69	.412	.35
1764	T-1¾	28.0	.04	.34	22	.89	.535	.45
1784	T-1¾	6.0	.20	.60	22	1.22	.734	.617
1813	T-3¼	14.4	.10	.86	27	.45	.269	.226
1815	T-3¼	14.0	.20	1.4	27	.38	.229	.193
1816	T-3¼	13.0	.33	3.0	27	.38	.225	.378
1819	T-3¼	28.0	.04	.34	27	.60	.357	.30
1820	T-3¼	28.0	.10	1.6	27	.60	.359	.302
1829	T-3¼	28.0	.07	1.0	27	.63	.378	.318
1847	T-3¼	6.3	.15	.38	27	.30	.179	.151

*At 5 volts.

INDUSTRY STANDARD LAMPS
CONTINUED ON FOLLOWING PAGE



INDUSTRY STANDARD LAMPS (CONT'D)

See previous page for illustrations.

Lamp No.	Bulb	Volts	Amps	M.S. C.P.	Fig.	Net Each, Lots of 1-9	10-99	100-499
1850	T-3¼	5.0	.09	.25	27	$0.58	$0.35	$0.294
1864	T-3¼	28.0	.17	3.0	27	.74	.444	.373
1869	T-1¾	10.0	.014	.004	22	1.93	1.159	.974
1888	T-3¼	7.0	.50	2.0	27	.45	.268	.225
1889	T-3¼	14.0	.27	2.0	27	.33	.199	.167
1891	T-3¼	14.0	.24	2.0	27	.27	.162	.136
1893	T-3¼	14.0	.33	2.0	27	.31	.184	.155
1895	G-4½	14.0	.27	2.0	8	.33	.20	.168
2162	T-1¾	14.0	.10	.5	22	1.11	.668	.561
2182	T-1¾	14.0	.08	.30	22	1.07	.644	.551
2187	T-1¾	28.0	.04	.30	22	1.55	.931	.782
6832	T-1†	5.0	.06	.05	18	$5.50	$3.30	$2.95
6833	T-¾	5.0	.06	.05	18	4.01	2.40	2.032
6838	T-1	28.0	.024	.15	20	3.27	1.96	1.665
6839	T-1	28.0	.024	.15	21	3.99	2.39	2.03
7152	T-1†	5.0	.115	.15	19	5.62	3.36	2.85
7327	T-1¾	28.0	.04	.34	24	1.21	.725	.616
7328	T-1¾	6.0	.20	.6	24	1.08	.626	.54
7344	T-1¾	10.0	.014	.004	24	2.05	1.23	1.045
7382	T-1¾	14.0	.08	.30	24	1.64	.983	.836
7387	T-1¾	28.0	.04	.30	24	1.61	.965	.82
7931	T-1¾	1.35	.06	.006	24	1.42	.821	.708

†Short.

INDICATOR LAMP ASSEMBLIES FOR PANEL MOUNTING

INDICATOR LAMP ASSEMBLIES FOR PANEL MOUNTING

6ESB

6ES

30153-0

38005-0

30147-0

30097-0

30909-0

Used by major computer manufacturers and other leaders in the electronic field. **Life:** 5,000 to 15,000 hrs. **Construction:** Slide base and ruggedized construction resist extreme shock and vibration. **Molded Glass Mount:** Provides greater filament stability. **Unique Flat-Top:** For maximum light output. **Operating Temperature Range:** −70° F to +375° F, base insulator. **Contacts:** Nickel-plated, meet MS-33586 specs. Other features include: Dumet lead wire, nickel-iron alloy core, copper sleeve with same coefficient of expansion as glass. Lead length (unbased lamp), ⅞". **Size:** Based—.875" lg. x .240"–.275" dia., unbased—.670" lg. plus .875" leads.

SLIDE-BASE INDICATOR LAMPS (T-2 BULB)

Lamp No.	Volts	Amps.	M.S. C.P.	Net Each, Lots of 1-9	10-99	100-499
4ESB	4	.04	.03	$0.82	$0.474	$0.404
5ESB	5	.04	.04	.82	.497	.456
6ESB	6	.04	.025	.99	.601	.511
10ASB	10	.01	.001	.82	.474	.404
10CSB	10	.017	.01	.82	.474	.404
10ESB	10	.04	.07	1.03	.609	.509
12ESB	12	.04	.09	.82	.474	.404
14FSB	14	.08	.5	1.03	.609	.509
16CSB	16	.017	.016	.82	.474	.404
16ESB	16	.04	.17	.82	.474	.404
18ESB	18	.04	.14	.82	.474	.404
24CSB	24	.017	.02	.82	.474	.404
24ESB	24	.04	.12	.82	.474	.404
28ESB	28	.04	.25	.82	.474	.404
48ESB	48	.04	.44	1.37	.811	.68

BI-PIN BASE INDICATOR CARTRIDGE LAMPS (T-2 BULB)

Lamp No.	Volts	Amps.	Average End F.C.	Net Each, Lots of 1-9	10-99	100-499
30901-0	4	.04	145	$1.36	$0.829	$0.759
30905-0	5	.04	225	1.36	.829	.759
30909-0	6	.04	160	1.36	.829	.759
30913-0	10	.01	—	1.36	.829	.759
30914-0	10	.017	10	1.36	.829	.759
30915-0	10	.04	540	1.36	.829	.759
30918-0	12	.04	550	1.36	.829	.759
30925-0	16	.017	75	1.36	.829	.759
30926-0	16	.04	750	1.36	.829	.759
30930-0	18	.04	800	1.36	.829	.759
30933-0	24	.017	200	1.36	.829	.759
30934-0	24	.04	650	1.36	.829	.759
30938-0	28	.04	1500	1.36	.829	.759
30941-0	48	.04	3000	1.36	.829	.759

WIRE-LEAD PILOT LAMPS (T-2 BULB)

Lamp No.	Volts	Amps.	M.S. C.P.	Net Each, Lots of 1-9	10-99	100-499
4ES	4	.04	.03	$0.62	$0.38	$0.349
5ES	5	.04	.04	.62	.38	.349
6ES	6	.04	.025	.62	.38	.349
10AS	10	.01	.001	.48	.384	.336
10CS	10	.017	.01	.48	.384	.336
10ES	10	.04	.07	.62	.384	.336
12ES	12	.04	.09	.62	.384	.336
16CS	16	.017	.016	.48	.384	.336
16ES	16	.04	.17	.62	.384	.336
18ES	18	.04	.14	.48	.384	.336
24CS	24	.017	.02	.48	.384	.336
24ES	24	.04	.12	.48	.384	.336
28ES	28	.04	.25	.62	.384	.336
48ES	28	.04	.44	1.06	.646	.550

PANEL MOUNT LAMP SOCKETS FOR SLIDE-BASE LAMPS

Contacts have nickel plated brass to comply with Military Standard MS-33586. Socket No. 30151-0 is ½" x ¾" so that it can be rotated in the panel to fit either the ½" or ¾" spacing of the Strip Sockets. One push-on speed nut furnished with each socket. A standard AMP receptacle #42197-2 may be used to make electrical connection to the sockets, or leads may be soldered to the socket contacts.

Part No.	Overall Length	Flange Size	Mtg. Hole Dia.	Material	Net Each, Lots of 1-9	10-99	100-499
30150-0	1 5/16"	⅝" dia.	.5"	Phenolic	$0.38	$0.232	$0.213
30151-0	1 9/64"	½" x ¾"	.5"	Nylon	.38	.232	.213
30153-0	1 33/64"	45/64" dia.	.5"	Phenolic	.54	.331	.303

LENSES FOR 30153 SOCKET

Lens Color	Lens No. Round	Square	Net Each, Lots of 1-9	10-99	100-499
Red	30160-0	30170-0	$0.24	$0.15	$0.143
Clear	30161-0	30171-0	.24	.15	.143
Amber	30162-0	30172-0	.24	.15	.143
White	30163-0	30173-0	.24	.15	.143
Green	30164-0	30174-0	.24	.15	.143
Blue	30165-0	30175-0	.24	.15	.143

END COLOR CAPS FOR 30150 AND 30151 SOCKETS

Both Pyrex and Profax type color caps in five standard colors. Profax cap is desirable in applications in which aesthetic value and illumination of the cap is important. Use with lamps rated up to 24 volts or 1.2 watts. Pyrex cap for use with lamps above 28 volts or 1.2 watts. Also available with any single letter or digit stamped on the cap. Size: Small Profax caps, .200" x .310" dia.; Large Profax caps, .303" x .325"dia.; Pyrex caps, 300" x .350" dia. May be used with round sockets (30150-0), rectangular sockets (30151-0), or with Strip Sockets.

Cap Color	Profax Cap Nos. Small	Large	Net Each, Lots of 1-9	10-99	100-499
Red	37001-0	38001-0	$0.16	$0.099	$0.091
Yellow	37002-0	38002-0	.16	.099	.091
White	37003-0	38003-0	.16	.099	.091
Green	37004-0	38004-0	.16	.099	.091
Blue	37005-0	38005-0	.16	.099	.091
Orange	.....	38007-0	.16	.099	.091
Pearl White	.....	38006-0	.16	.099	.091
	Pyrex Cap Nos.				
Red	38071-0		.16	.099	.091
Yellow	38072-0		.16	.099	.091
White	38073-0		.16	.099	.091
Green	38074-0		.16	.099	.091
Blue	38075-0		.16	.099	.091

PANEL MOUNT LAMP SOCKETS FOR CARTRIDGE LAMPS

Part No.	Overall Length	Mtg. Hole Dia.	Terminals	Net Each, Lots of 1-9	10-99	100-499
30097-0	1 11/64"	.375"	Turret	$1.71	$1.035	$0.949
30098-0	1 11/64"	.375"	Solder	1.71	1.035	.949

LENSES FOR 30097 & 30098 SOCKETS

Lens Color	Lens No. Transparent	Translucent	Net Each, Lots of 1-9	10-99	100-499
Amber	30140-0	.....	$0.63	$0.382	$0.35
Clear	30141-0	.....	.63	.382	.35
Red	30142-0	30147-0	.63	.382	.35
Blue	30143-0	30148-0	.63	.382	.35
Green	30144-0	30149-0	.63	.382	.35
Yellow	.....	30145-0	.63	.382	.35
White	.....	30146-0	.63	.382	.35

ALCO® MACHINED ALUMINUM KNOBS

ELECTRONIC PRODUCTS, INC.

ALCOKNOB

K-1250A

K-7900

KSP-700

KCVS-500A

KHF-1250

KD-900

KN-1751

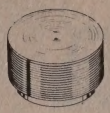
KN-7900

KNS-701

KN-701

KPN-700

KBS-500B-10


KG-1250

KB-500

KC-500

MACHINED ALUMINUM KNOBS FOR INDUSTRIAL APPLICATIONS

Modern, decorative knobs of machined aluminum for industrial applications. One-piece construction and superior styling at moderate prices. For 1/8" and 1/4" shafts.

Alco No.	Dia. (Inches) Shaft	Knob	Color*	Net Each, Lots of 1-99	100-249	250-499	500-999
K-500	1/8 & 1/4	1/2	A/B/G	$0.90	$0.81	$0.77	$0.72
K-700	1/4	3/4	A/B/G	1.00	.90	.85	.80
K-900	1/4	15/16	A/B/G	1.15	1.04	.98	.92
K-1250	1/4	1 1/4	A/B/G	1.60	1.44	1.36	1.28
§K-1251	1/4	1 1/4	A/B/G	1.55	1.40	1.32	1.24
†K-1251S	1/4	1 1/4	A/B	2.20	1.98	1.87	1.76

MACHINED ALUMINUM CONCENTRIC KNOB SETS

Matched knob sets for concentric shaft controls consist of two separate knobs—upper knob for inner control shaft, 1/8" dia., lower knob for outer control shaft, 1/4" dia. With four 6-32 set screws.

K-5700	1/8 & 1/4	1/2 & 3/4	A/B	$2.05	$1.85	$1.75	$1.64
K-7906	1/8 & 1/4	3/4 & 15/16	A/B	2.40	2.16	2.04	1.92

MINIATURE MACHINED ALUMINUM KNOBS

For miniature switches and controls having 1/8" diameter shaft. Model KC knobs designed for rotary series Alcoswitch, but usable with other components. Model KCVS knobs provide the need for setting a predetermined stop position on controls or rotary switches. Model KC-500-10 knobs have engraved numerals. Natural aluminum or black.

KC-500	1/8	1/2	A/B	$1.50	$1.35	$1.28	$1.20
KC-500-10	1/8	1/2	A/B	1.75	1.58	1.49	1.40
KCVS-500	1/8	1/2	A/B	2.05	1.85	1.75	1.64

ALUMINUM KNOBS FOR HI-FI COMPONENTS

Deluxe knobs improve appearance and operation of quality equipment. Unique saw-cut indicator. For 1/4" shafts. Single set screws. Models KHF-1250 supplied with 2 set screws, 6-32, and have 120° spacing.

KHF-500	1/4	1/2	A/G	$0.85	$0.77	$0.72	$0.68
KHF-700	1/4	3/4	A/G	.95	.86	.81	.76
KHF-900	1/4	15/16	A/G	1.05	.95	.89	.84
KHF-1250	1/4	1 1/4	A/G	1.45	.131	1.23	1.16

MACHINED ALUMINUM KNOBS WITH SKIRTS

Excellent matching knob group to Alco K Series, above. KS models have solid aluminum skirts. KSP models have clear acrylic plastic skirts. For 1/8" and 1/4" shafts. Choice of natural aluminum, or black anodizing.

KS-500	1/8–1/4	3/4	A/B	$1.25	$1.13	$1.06	$1.00
KS-700	1/4	1 1/8	A/B	1.50	1.35	1.28	1.20
KS-900	1/4	1 13/32	A/B	1.75	1.58	1.49	1.40
KSP-700	1/4	1 1/8	A/B	1.35	1.22	1.15	1.08
KSP-900	1/4	1 13/32	A/B	1.55	1.40	1.32	1.24

DIAMOND KNURL ALUMINUM KNOBS

Non-slipping diamond knurl knobs have conical top, hairline indicators. Colors in natural anodized aluminum, black or gold finish. For 1/8" or 1/4" shafts, as specified.

KD-500	1/8–1/4	1/2	....	$1.05	$0.95	$0.89	$0.84
KD-700	1/4	3/4	....	1.10	.99	.94	.88
KD-900	1/4	15/16	....	1.30	1.17	1.11	1.04
KD-1250	1/4	1 1/4	....	1.75	1.58	1.49	1.40

STRAIGHT KNURL ALUMINUM KNOBS

Straight knurl machined aluminum knobs with hairline indicators. Choice of solid anodized colors and two-tone models. Models KN-1750 jumbo series have 1 3/4" dia. size, 1.750" w. x .62" h. Fingertip spinner knob has .512" dia. aluminum disc mounted on top. For 1/8" and 1/4" shafts, as specified.

KN-500	1/8–1/4	1/2	A/B	$1.05	$0.95	$0.89	$0.84
KN-700	1/4	3/4	A/B	1.10	.99	.94	.88
KN-900	1/4	15/16	A/B	1.30	1.17	1.11	1.04
KN-1250	1/4	1 1/4	A/B	1.85	1.67	1.57	1.48
§KN-1251	1/4	1 1/4	A/B	1.80	1.62	1.53	1.44
§KN-1751	1/4	1 3/4	A/B	2.95	2.66	2.51	2.36
†KN-1751	1/4	1 3/4	A/B	3.35	3.01	2.85	2.68
KN-500	1/8–1/4	1/2	AB/BA	1.30	1.17	1.11	1.04
KN-700	1/4	3/4	AB/BA	1.40	1.26	1.19	1.12
KN-900	1/4	15/16	AB/BA	1.60	1.44	1.36	1.28
KN-1250	1/4	1 1/4	AB/BA	2.10	1.89	1.79	1.68
KN-1751	1/4	1 3/4	AB/BA	3.25	2.93	2.76	2.60
†KN-1751S	1/4	1 3/4	AB/BA	3.45	3.11	2.93	2.76

*Add suffix **A** for natural, **B** for black, **G** for gold, **AB** for natural body with black top, **BA** for black body with natural top. †Spinner less hairline. §Less hairline.

CONCENTRIC KNOBS WITH STRAIGHT KNURL

Straight knurl concentric aluminum knobs for dual shaft controls where space is at a premium when mounting many control knobs. Natural aluminum finish has black indicator line, black finish knob has white indicator line. Diameter top shaft, 1/8", bottom shaft, 1/4".

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
KN-5700	1/8 & 1/4	1/2 & 3/4	A/B	$2.30	$2.07	$1.96	$1.84
KN-7900	1/8 & 1/4	3/4 & 15/16	A/B	2.55	2.30	2.17	2.04

KNURLED KNOBS WITH ARROWHEAD POINTER

Straight knurled machined aluminum knobs with engraved arrowhead pointer. Models KNS knobs have an added aluminum skirt. For 1/4" and 1/8" shafts. Black anodized body with natural finish top.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
KN-501	1/8–1/4	1/2	A/B	$1.10	$0.99	$0.94	$0.88
KN-701	1/4	3/4	A/B	1.15	1.04	.98	.92
KN-501	1/8–1/4	1/2	BA	1.30	1.17	1.11	1.04
KN-701	1/8 & 1/4	3/4	BA	1.35	1.22	1.15	1.08

KNURLED ONE-PIECE ALUMINUM POINTER KNOBS

Popular size one-piece aluminum pointer knob mates with KN Series straight knurl knobs. Finished in natural aluminum, or black anodized, or natural body with black top, or black body with natural top. For 1/8" and 1/4" shafts, as specified.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
KNS-501	1/8 & 1/4	1/2	A/B	$1.35	$1.22	$1.15	$1.08
KNS-701	1/4	3/4	A/B	1.50	1.35	1.28	1.20
KNS-501	1/8 & 1/4	1/2	BA	1.55	1.40	1.32	1.24
KNS-701	1/8 & 1/4	3/4	BA	1.70	1.53	1.45	1.36

ALUMINUM CONTROL KNOBS WITH KNURL

Fill the requirements for most rotary switches having a 1/8" or 1/4" diameter shaft. Shaft hole is much deeper than standard miniature knobs. Models KBS knobs have added skirt with engraved numerals 0–9, with 36° spacing. Anodized finish in black or natural.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
KPN-500	1/8–1/4	1/2	A/B	$2.45	$2.21	$2.08	$1.96
KPN-700	1/4	3/4	A/B	2.60	2.34	2.21	2.08
KPN-500	1/8 & 1/4	1/2	AB/BA	2.70	2.43	2.30	2.16
KPN-700	1/4	3/4	AB/BA	2.90	2.64	2.47	2.32
KPN-900	1/4	15/16	A/B	3.25	2.93	2.76	2.60
KPN-900	1/4	15/16	AB/BA	3.55	3.20	3.02	2.84
KB-500	1/8 & 1/4	1/2	A/B	$1.15	$1.04	$0.98	$0.92
KB-700	1/4	3/4	A/B	1.25	1.13	1.06	1.00
KB-900	1/4	15/16	A/B	1.45	1.31	1.23	1.16
KBS-500	1/8 & 1/4	1/2	A/B	1.50	1.35	1.28	1.20
KBS-500-10	1/8 & 1/4	1/2	A/B	1.75	1.58	1.49	1.40

GROOVED COORDINATE KNOB

New design with 50 precision grooves per inch on top and side. Mated with four models. High polish. Available in natural or black anodized aluminum.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
KG-500	1/8 & 1/4	1/2	A/B	$0.90	$0.81	$0.77	$0.72
KG-700	1/4	3/4	A/B	1.00	.90	.85	.80
KG-900	1/4	15/16	A/B	1.15	1.04	.98	.92
KG-1250	1/4	1 1/4	A/B	1.50	1.35	1.28	1.20

SHAFT REDUCERS

Alco No. KR-1—1/4" to 1/8" reducer. Net Each..... $0.15
Alco No. KR-2—1/4" to 3/16" reducer. Net Each..... .15

ALCO® ELECTRONIC PRODUCTS, INC.

MOLDED PHENOLIC KNOBS

ALCOKNOB

PKES-90B

PH-13-16

PK-1100B

PK-1109B

PKC-1111B

PKA-50B

PKAP-70B

PKA-190B

PKG-125B

PKGP-100B

PKGC-690BP

PK-1108B

PKP-194B

PKS-90B-10

PKS-1105B

PFM-80B

STRAIGHT KNURL PLASTIC KNOBS WITH SKIRTS

Straight knurl knobs with white dot indicators have deep precision serrations in molded black plastic. Spun aluminum inlay in top offers two-tone effect. Has molded-in brass insert bushing, hex-head knurl cup point, self-locking 6-32 set screw. PKD models have aluminum skirts. PKD-10 models have aluminum skirts with 0–10 markings. For ¼″ and ⅛″ shafts, as specified.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PK-50	⅛ & ¼	.748	B	$0.35	$0.32	$0.30	$0.28
PK-70	¼	.984	B	.40	.36	.34	.32
PK-90	¼	1.245	B	.45	.41	.38	.36
PKD-60	⅛ & ¼	.79	B	.50	.45	.43	.40
PKD-70	¼	1.03	B	.55	.50	.47	.44
PKD-100	¼	1.29	B	.60	.54	.51	.48
PKD-60-10	⅛ & ¼	.79	B	.55	.50	.47	.44
PKD-70-10	¼	1.03	B	.60	.54	.51	.48
PKD-100-10	¼	1.29	B	.65	.59	.55	.52

FLUTED PLASTIC CONTROL KNOBS

Deep fluted plastic control knobs have spun aluminum inlay in top. PKB and PKES models have skirts. PKEC models are concentric sets.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PKB-70	¼	1.12	B	$0.45	$0.41	$0.38	$0.36
PKB-90	¼	1.5	B	.55	.50	.47	.44
PKE-60	⅛ & ¼	.626	B	.60	.54	.51	.48
PKE-60	⅛	.626	B	.65	.59	.55	.52
PKE-90	¼	.89	B	.70	.63	.60	.56
PKEC-690	⅛ & ¼	.63 & .885	B	1.25	1.13	1.06	1.00
PKEC-690P	⅛ & ¼	.626 & 1.024	B	1.30	1.17	1.11	1.04
PKEC-9120	⅛ & ¼	.890 & 1.291	B	1.50	1.35	1.28	1.20
PKES-60	⅛ & ¼	.75	B	.60	.54	.51	.48
PKES-70	¼	.855	B	.65	.59	.55	.52
PKES-90	¼	1.012	B	.70	.63	.60	.56
PKES-120	¼	1.296	B	.85	.77	.72	.68
PKES-140	¼	1.496	B	1.20	1.08	1.02	.96
PKES-150	¼	1.768	B	1.35	1.22	1.15	1.08

PLASTIC POINTER KNOBS AND CONCENTRIC SETS

Plastic pointer knobs have spun aluminum inlay on top. PKP models have bar pointer. PKC models are concentric sets. Black or red finish. For ¼″ or ⅛″ shafts, as specified.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PK-1100	⅛ & ¼	.700	B	$0.40	$0.36	$0.34	$0.32
PK-1100	⅛ & ¼	.700	R	.45	.41	.38	.36
PKP-1109	¼	.875	B	.55	.50	.47	.44
PKC-1111	⅛ & ¼	.875 & .643	B	.95	.86	.81	.76
PKC-1111	⅛ & ¼	.875 & .643	R/B	1.00	.90	.85	.80

STRAIGHT KNURL TUNING CONTROL KNOBS

Black plastic straight knurl tuning control knobs have recessed aluminum inlays. For ¼″ diameter shafts.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PH-15-18	¼	.995	B	$0.40	$0.36	$0.34	$0.32
PH-14-17	¼	1.2	B	.45	.41	.38	.36
PH-13-16	¼	1.395	B	.50	.45	.43	.40

RIBBED KNURL PLASTIC KNOBS WITH SKIRTS AND POINTERS

Slip-proof knurl construction with extended skirts, white indicators. Model PKA-190B is less skirt. Models PKAP have bar pointers. Black finish. For ⅛″ and ¼″ diameter shafts, as specified.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PKA-50	⅛ & ¼	.795	B	$0.55	$0.50	$0.47	$0.44
PKA-70	¼	.984	B	.65	.59	.55	.52
PKA-90	¼	1.37	B	.80	.72	.68	.64
PKA-190	¼	1.89	B	1.95	1.76	1.66	1.56
PKAP-50	⅛ & ¼	.795	B	.65	.59	.55	.52
PKAP-70	¼	.98	B	.75	.68	.64	.60
PKAP-90	¼	1.365	B	.90	.81	.77	.72

LEXINGTON SERIES STRAIGHT KNURL PLASTIC KNOBS AND CONCENTRIC SETS

Handsome black or red plastic knobs with knurl serrations, spun aluminum inlay. PKGC models are black concentric sets. PKGP models have pointers. PKGC-BP models are concentric sets with pointers. For ⅛″ and ¼″ diameter shafts, as specified.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PKG-40	⅛	.437	B	$0.55	$0.50	$0.47	$0.44
PKG-40	⅛	.437	R	.60	.54	.51	.48
PKG-50	⅛ & ¼	.551	B	.60	.54	.51	.48
PKG-50	⅛ & ¼	.551	R	.65	.59	.55	.52
PKG-60	⅛ & ¼	.673	B	.60	.54	.51	.48
PKG-60	⅛ & ¼	.673	R	.65	.59	.55	.52
PKG-70	⅛ & ¼	.74	B	.65	.59	.55	.52
PKG-70	⅛ & ¼	.74	R	.70	.63	.60	.56
PKG-90	⅛ & ¼	.858	B	.70	.63	.60	.56
PKG-90	⅛ & ¼	.858	R	.75	.68	.64	.60
PKG-100	¼	1.055	B	.80	.72	.68	.64
PKG-125	¼	1.248	B	1.05	.95	.89	.84
PKGC-570	⅛ & ¼	.531 & .74	B	1.20	1.08	1.02	.96
PKGC-690	⅛ & ¼	.673 & .854	B	1.25	1.13	1.06	1.00
PKGC-910	⅛ & ¼	.858 & 1.055	B	1.45	1.31	1.23	1.16
PKGP-70	¼	.74	B	.75	.68	.64	.60
PKGP-90	¼	.862	B	.80	.72	.68	.64
PKGP-100	¼	1.059	B	.90	.81	.77	.72
PKGC-570	¼	.551 & .74	B	1.25	1.13	1.06	1.00
PKGC-690	¼	.673 & .854	B	1.30	1.17	1.11	1.04
PKGC-910	¼	.858 & 1.059	B	1.50	1.35	1.28	1.20

PLASTIC CONTROL KNOBS

Knurled plastic control knobs with aluminum inlay on top. Model PKP has bar pointers. Models PKS have aluminum dial skirts. Models PKS-11 have skirts with 0–10 markings. Model PFM is a seven-sided knob. For ¼″ diameter shafts.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PK-1108	¼	1.006	B	$0.50	$0.45	$0.43	$0.40
PKP-194	¼	1.02	B	.80	.72	.68	.64
PKP-1109	¼	.875	B	.55	.50	.47	.44
PKS-90	¼	1.425	B	.60	.54	.51	.48
PKS-90-10	¼	1.425	B	.65	.59	.55	.52
PKS-1137	¼	1.39	B	.65	.59	.55	.52
PKS-1137-10	¼	1.39	B	.70	.63	.60	.56
PKS-1104	¼	1.12	B	.50	.45	.43	.40
PKS-1103-10	¼	1.12	B	.55	.50	.47	.44
PKS-1106	¼	1.16	B	.55	.50	.47	.44
PKS-1105-10	¼	1.16	B	.60	.54	.51	.48
PKS-1132-5	¼	1.181	B	.65	.59	.55	.52
PKS-1132-9	¼	1.181	B	.65	.59	.55	.52
PKS-1132-10	¼	1.181	B	.65	.59	.55	.52
PKS-1132	¼	1.181	B	.60	.54	.51	.48
PFM-80	¼	.826	B	.50	.45	.43	.40
PFM-100	¼	1.005	B	.60	.54	.51	.48

SKIRTED CONTROL KNOB

Mated family of control knobs with quadrant design bodies. Choice of smooth or 4-way bar pointers. Have vertical indicator lines with arrow heads on skirt. Concentric model also available.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PKN-60	⅛ & ¼	.575	B	$0.60	$0.54	$0.51	$0.48
PKN-70	¼	.770	B	.65	.59	.55	.52
PKN-90	¼	.960	B	.70	.63	.60	.56

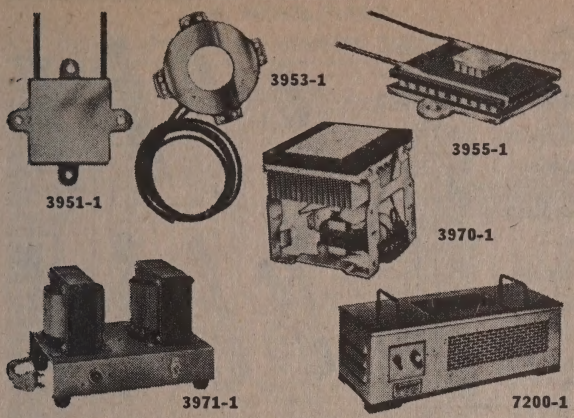
SERRATED KNURL CONTROL KNOBS

Mated molded phenolic control knobs recommended for use on instrumentation, medical, console and communications equipment panels. Spun aluminum caps with short radius indicator. Easy to clean.

Alco No.	Dia. (Inches) Shaft	Knob	Color	Net Each, Lots of 1-99	100-249	250-499	500-999
PKF-50	⅛ & ¼	.688	B	$0.55	$0.50	$0.47	$0.44
PKF-70	¼	.830	B	.60	.54	.51	.48
PKF-70P	¼	.830	B	.70	.63	.60	.56

THERMOELECTRICS—PANEL, CHASSIS HARDWARE

THERMOELECTRICS



CAMBION TE components (modules) and 40-watt assemblies, listed below, may be operated by using the following **standard parts** to assemble a simple variable DC power supply: (1) auto-transformer; (2) input transformer; (3) filter choke; (4) 2 silicon rectifiers; (5) rectifier heat sink. Operating instructions, power supply schematic and mounting recommendations are supplied with each component module and assembly.

COMPONENTS

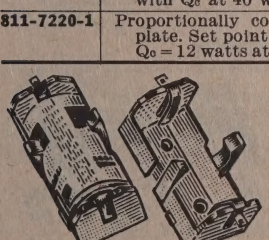
Cambion Type No.	Description	Net Each
800-3950-1	6.5 ampere module; 2.3 VDC; 6.8 watts with Ts at 27° C	$ 59.60
800-3951-1	6.5 ampere module; 5.7 VDC; 20 watts with Ts at 27° C	79.40
800-3953-1	6.5 ampere annular ring; 5.7 VDC; 20 watts with Ts at 27° C	79.40
801-3960-1	6.5 ampere module; 2.0 VDC; 7 watts with Ts at 27° C	37.60
800-3955-1	5.2 ampere Cascade module; 5.7 VDC; 1 watt at 60° CΔT with atmospheric pressure, at Ts = 27° C	228.70
801-3958-1	Ceramic high performance unit; 3.6 VDC at 9.0 amps; 19.5 watts pumping capacity with Ts at 27° C	90.30

ASSEMBLIES

Cambion Type No.	Description	Net Each
802-3970-1	6.5 ampere assembly (two 3951's in series); 12 VDC; 40 watts with Ts at 35° C. With heat sink, bracket and fan assembly (115 V, 60 Hz AC)	$384.20
802-3971-1	Fixed output, non-regulated DC power supply for 3970-1 assembly. Other power supplies available for all modules.	124.60

INSTRUMENTS

Cambion Type No.	Description	Net Each
811-7200-1	Package cold plate unit for plug-in operation (110/120 VAC, 60 Hz at approx. 1 A). Cold plate temperatures to −15° C with Q_c at 40 watts	445.90
811-7210-1	Variable controlled cold plate; cold plate temperatures adjustable to −10° C with Q_c at 40 watts	524.80
811-7220-1	Proportionally controlled cold or warm plate. Set point range of 0° C to 40° C. Q_c = 12 watts at cold plate temp. of 0° C	787.40



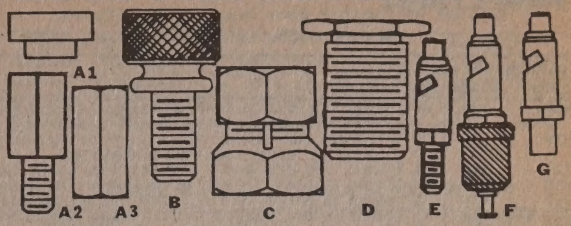
BATTERY HOLDERS

For mercury ("C" size) and zinc nickel-plated ("D" size) batteries. Snap-in holders with locking strap to hold mercury batteries under extreme vibration and shock. Body material phosphor bronze.

New 2800-01, 2801-01 and 2801-02—Low cost, glass-filled nylon molded holders. Holders interlock with each other to form single unit assemblies for any number of batteries required.

Cambion Type No. 400-	For Battery		Net Ea., Lots 10-99	100-499
	Type	Size, Inches		
2475-01-02	Mercury	.655 dia. x 1.960 h.	$1.53	$1.31
2800-01-00	Mercury	1.19 w. x 1.19 d. x 2.40 h.	.40	.34
2801-01-00	Zinc	1.60 w. x 1.38 d. x 2.90 h.	.40	.34
2802-01-00	Zinc	.778 w. x .739 d. x 2.40 h.	.40	.36
2870-01-02	Mercury	1.190 dia. x 2.375 h.	2.40	2.05
2890-01-02	Zinc	1.344 dia. x 2.406 h.	2.40	2.05
2895-01-02	Zinc	1.344 dia. x 2.436 h.	1.67	1.42

PANEL AND CHASSIS HARDWARE COMPONENTS



MOUNTING STANDOFFS AND SPACERS (FIG. A)

Brass and aluminum swage mount (Fig. A1) or stud mount (Fig. A2) standoffs and spacers (Fig. A3). **1246/7408 Series**—Round; 6/32 tapped standoff section. **1247/7404 and 1249/7406 Series**—Round, thru hole. **1299/7422 Series**—Stud mount; hex, 6/32. **1300/7409 Series**—Round, 4/40 tapped standoff section. **2188/7410 Series**—Round; 2/56 tapped standoff section. **3923/7407 Series**—Round; 8/32 tapped standoff section. **3925/7411 Series**—Round; 8/32 tapped standoff section. **3927/7412 Series**—Hex; 4/40 tapped standoff section. **3928/7413 Series**—Hex; 6/32 tapped standoff section. **3934/7416 Series**—Spacer; hex; 4/40 tapped. **3935/7417 Series**—Spacer; hex; 6/32 tapped. This is a partial listing of more popular sizes. On all items, **for sizes not listed,** order by part no. and **specify above board height and/or board thickness desired.**

Cambion Type No.		Above Board Height, Inches	For Board Thickness, Inches	Net Each, Lots of*		
Brass	Alum.			10-99	100-499	500-999
1246-9*	7408-9*	.125	1/16	$0.28	$0.22	$0.20
1246-10*	7408-10*	.188	1/16	.28	.22	.20
1246-11*	7408-11*	.250	1/16	.28	.22	.20
1246-13*	7408-13*	.500	1/16	.28	.22	.20
1246-15*	7408-15*	.750	1/16	.28	.22	.20
1246-17*	7408-17*	.125	3/32	.28	.22	.20
1246-19*	7408-19*	.250	3/32	.28	.22	.20
1247-9*	7404-9*	.125	1/16	.28	.22	.20
1247-10*	7404-10*	.188	1/16	.28	.22	.20
1247-11*	7404-11*	.250	1/16	.28	.22	.20
1249-9*	7406-9*	.125	1/16	.28	.22	.20
1249-10*	7406-10*	.188	1/16	.28	.22	.20
1249-11*	7406-11*	.250	1/16	.28	.22	.20
1299-1	7422-1	.375	6/32 stud	.24	.18	.17
1299-2	7422-2	.500	mount	.24	.18	.17
1300-9*	7409-9*	.125	1/16	.28	.22	.20
1300-10*	7409-10*	.188	1/16	.28	.22	.20
1300-11*	7409-11*	.250	1/16	.28	.22	.20
1300-12*	7409-12*	.375	1/16	.28	.22	.20
1300-13*	7409-13*	.500	1/16	.28	.22	.20
1300-17*	7409-17*	.125	1/32	.28	.22	.20
2188-1*	7410-1*	.125	1/32	.28	.22	.20
2188-9*	7410-9*	.125	1/16	.28	.22	.20
3923-9*	7407-9*	.125	1/16	.41	.32	.29
3923-11*	7407-11*	.250	1/16	.41	.32	.29
3925-9†	7411-9†	.125	1/16	.24	.18	.17
3925-11†	7411-11†	.250	1/16	.24	.18	.17
3927-9†	7412-9†	.125	1/16	.24	.18	.17
3927-11†	7412-11†	.250	1/16	.24	.18	.17
3928-9†	7413-9†	.125	1/16	.28	.22	.20
3928-11†	7413-11†	.250	1/16	.28	.22	.20
3934-4	7416-4	.312	Spacer;	.28	.22	.20
3934-5	7416-5	.375	hex; 4-40	.28	.22	.20
3934-6	7416-6	.438	tapped	.28	.22	.20
3935-8	7417-8	.625	Spacer;	.28	.22	.20
3935-10	7417-10	.875	hex; 6-32	.28	.22	.20
3935-11	7417-11	1.000	tapped	.28	.22	.20

*These swage-type standoffs available for board thicknesses of 1/32", 1/16", 3/32", 1/8", 3/16" and 1/4" and above board heights of .125", .188", .250", .375", .500", .625", .750" and 1.000". †These swage-type standoffs supplied in same above board heights, but only for 1/16", 3/32" and 1/8" thick boards. *Minimum standard package is 100 pieces.

GENERAL HARDWARE COMPONENTS

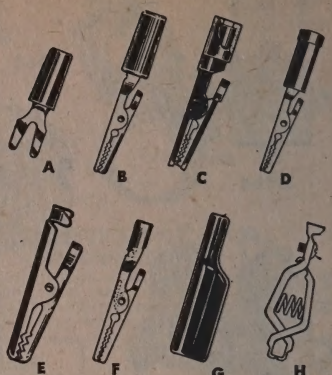
Cambion Type Number	Fig.	Description	Dimensions, Inches	Net Each, Lots of 10-99	100-499	500-999
1120-01-02*	B	Thumb screw	5/32 thrd.	$0.64	$0.57	.....
1120-02-02*	B		3/32 thrd.	.64	.57	.....
1120-03-02*	B		19/32 thrd.	.64	.57	.....
1774-1-02	C	Shaft lock	1/4 dia. shaft	.64	.57	.....
2038-1-02	C		1/4 dia. shaft	.64	.57	.....
2117-01-02	D	Panel bushing	1/8 board	.50	.45	.....
2117-02-02	D		1/4 board	.50	.45	.....
2117-03-02	D		3/8 board	.50	.45	.....
2146-01-02	E	Component clip	.040 slot	.64	.57	.54
2247-02-08	E		.040 slot	.64	.57	.54
2247-03-08	E		.040 slot	.64	.57	.54
2329-01-02	E		.055 slot	.76	.68	.64
2330-02-08	E		.055 slot	.76	.68	.64
2330-04-08	E		.055 slot	.76	.68	.64
2339-01-02	E		.085 slot	1.01	.90	.84
2405-01-08	F	Component clip	.085 slot	1.53	1.37	1.29
2422-01-08	F		.055 slot	1.26	1.13	1.06
3084-02-08	G		.040 slot	.65	.58	.55
3085-02-08	G		.055 slot	.80	.71	.67

*Nickel finish; for black oxide finish, order by changing final suffix from 02 to 12; (e.g., 1120-01-12).

Jacks, Plugs and Clips

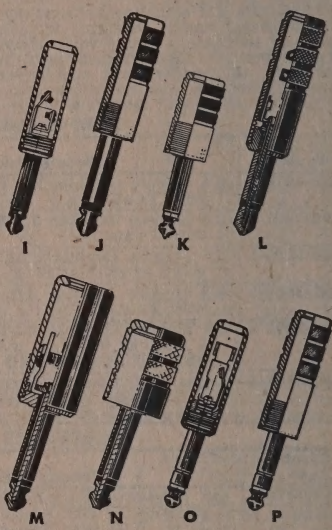
SPADE LUGS, ALLIGATOR AND BATTERY CLIPS

G-C No. 33- Red	Black	Fig.	Description	Net Price Each	100*
300	302	A	Spade lug with molded plastic handle; fits #10 screws; use wire with banana plug or soldered directly	$0.23	$19.16
310	312	B	Alligator clip with plastic handle for banana plug or wire; jaws 3/8" open; cadmium plated steel	.20	17.26
314	316	B	Same, but with 6-32 screw or solder connection of wire	.23	19.16
318	320	B	Same, but of solid copper; 6-32 screw or solder connection	.34	28.33
322	324	B	Same as No. 33-310 but with extra long insulated handle	.22	18.99
326-1	326	C	Alligator clip adapter takes banana plug in molded plastic	.55	45.83
328-1	328	C	Same, but takes tip plug in plastic handle	.89	74.13
330	332	B	Same, but takes either tip or banana plug in handle	.73	60.69
334	336	D	Similar, but adapts std. tip plug to alligator clip	.68	56.38
344*	.....	E	Mini-gator clip is extra small; solder connection; copper	.19	16.34
342*	.....	E	Same, but cadmium plated steel	.16	13.63
346*	.....	F	Metal alligator clip; 3/8" opening; takes banana plug or wire soldered directly; cadmium plated steel	.15	12.74
348*	.....	F	Same, but with 6-32 binding head screw	.18	14.99
350*	.....	F	Same as No. 33-348 but all-copper	.29	24.41
360	362	G	Flexible molded vinyl insulator fits over most allig. clips	.06	5.23
370*	.....	H	Battery connecting, testing clip rated 5 A; 1/2" jaw spread	.17	14.66
372*	.....	H	Same, but rated 10 amps; 9/16" jaw spread	.22	18.33



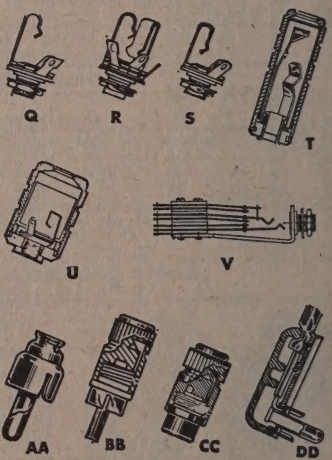
PHONE PLUGS

602	600	I	Standard 2-conductor; screw terminals and plastic handle	$0.92	$76.66
604*	.....	J	Same, but metal, shielded handle	1.45	120.57
608	606	....	2-cond. standard with grounding terminal clamp	.85	70.49
610*	.....	....	Same, but metal, shielded handle	1.35	111.99
612-1	612-2	....	2-conductor standard with solder lugs; plastic handle	.75	62.16
614*	.....	K	Stubby 2-conductor; metal handle; solder lugs	1.19	98.49
616*	.....	J	Standard metal 2-cond. shielded; solder lugs	1.36	113.07
.....	618	....	2-conductor per PJ-055B; solder and screw connection	2.29	189.55
620*	.....	L	Special short barrel 2-cond. for mike or phone pickup to Revere/Wollensak tape recorders	1.41	116.91
624	622	N	Std. 2-conductor; 1 1/2" l. x 11/16" plastic handle; screw term.	1.15	95.82
626*	.....	N	Same, but with 1" l. metal shielded handle	1.64	136.16
628*	.....	M	Same, but with 2 1/16" long metal shielded handle	2.01	166.16
630-1	630-2	....	Clamp and solder lug, plastic handle 2-cond. jack .206" dia.	1.31	108.89
632*	.....	J	Same, but metal handle	1.89	156.41
640-1	640-2	O	3-cond. std. with clamp and solder lug; plastic handle	1.25	103.64
642*	.....	P	Same, but with metal handle	1.85	152.99
646	644	O	Std. 3-cond. with plastic handle; screw terminals	1.40	116.07
648*	.....	P	Same, but with metal handle	1.99	164.49
.....	654	....	Solder, screw term. 3-cond. to meet PJ-068B requirements	5.05	417.98
660*	.....	J	Min. 2-cond. for hearing aids, etc.; tested 500 V breakdown; 1 3/8" l. x 9/32" O.D.; metal, shielded handle; combination clamp and solder terminals	1.04	86.67
664	662	....	Same, but with plastic handle	.85	70.49
666*	.....	J	Same as 660, but combination clamp and screw terminals	1.15	95.32
670	668	....	Same, but with plastic handle	.96	79.99



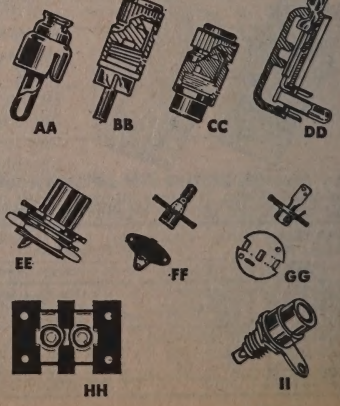
PHONE JACKS

690*	.....	Q	Panel mounting, 2-conductor, open circuit jack	$0.59	$49.16
691*	.....	....	Panel mounting, 2-conductor, open circuit jack. Use with Revere/Wollensak short finger plug No. 33-620	.59	49.16
692*	.....	Q	Same, but closed circuit	.77	64.16
694*	.....	Q	Same as 33-690 but meets JJ-034 requirements	.88	73.49
700*	.....	Q	Open circuit 2-cond.; .210" I.D. sleeve for 33-630/2 plugs	.55	45.59
702*	.....	Q	Closed circuit version of 33-700	.87	72.59
708*	.....	R	Panel mounting, 3-conductor, open circuit jack	.71	59.16
710*	.....	R	Same, but closed circuit	.88	73.19
712*	.....	R	Same as 33-708, but meets JJ-033 requirements	1.25	103.49
720*	.....	S	Miniature, open circuit, panel mount 2-conductor jack; mates with Nos. 33-660 through 33-670 plugs	.50	41.44
722*	.....	S	Same, but closed circuit	.55	45.59
730*	.....	T	Cord mounted, inline 2-cond. open circuit jack; solder lugs	1.65	136.82
.....	732	....	Same, but with plastic handle	1.20	99.49
734*	.....	T	Same as 33-730, but with screw terminals	1.80	149.26
.....	736	....	Black plastic handle version of 33-734	1.35	111.94
740*	.....	T	Cord mounted, 3-cond. open circuit jack; solder lugs	2.10	174.20
742*	.....	T	Same, but with screw terminals	2.30	190.80
746*	.....	U	Miniature, inline cord type; with solder lugs; mates with 33-660 thru 33-670 plugs; metal handle	1.40	116.07
752*	.....	V	3-conductor, single closed circuit, long frame panel mount jack	1.25	103.71



PHONO PIN PLUGS AND JACKS

770*	.....	AA	Solder type phono plug	$0.07	$ 6.04
772*	.....	BB	Combination clamp, solder type plug with removable metal handle	.50	41.44
774*	.....	CC	Cord mounted jack with combination clamp and solder terminal; removable metal handle	.65	53.89
780	778	DD	Solderless, right-angle plug; plastic shell; screw assembly	.41	34.11
776	.....	DD	Same, but gray color	.41	34.11
784	.....	DD	Same, but blue color	.37	31.01
790*	.....	EE	Single-hole mount phono jack; with nut and washer	.51	42.34
792*	.....	FF	2-hole rivet or screw mt. jack; oval metal plate	.12	10.73
796	.....	GG	Same, but round mounting plate	.13	11.31
800	.....	HH	Double phono pin jack 1 1/2" x 1"; four mtg. holes	.21	18.14
802	.....	....	Triple phono pin jack 1 11/16" x 1"; 4 mtg. holes	.30	25.33
803	.....	....	Quadruple phono pin jack	.42	35.13
804	.....	II	Single hole panel mt. phono jack fits 9/32" hole; with nut, washer and solder lug for ground	.43	36.33



*All metal. *Larger quantity prices on request.

STEEL NICKEL-PLATED ROUND HEAD MACHINE SCREWS

C-PACK G C No.	Net*	Description	M-PACK G-C No.	Net*
7130-C	$0.95	2-56 x 1/4" machine screw	7130-M	$ 7.61
7131-C	1.06	2-56 x 1/2" machine screw	7131-M	8.35
7132-C	1.35	2-56 x 3/4" machine screw	7132-M	10.77
6005-C	.94	4-36 x 1/4" machine screw	6005-M	7.41
6006-C	.97	4-36 x 1/2" machine screw	6006-M	7.79
6005-AC	1.36	4-40 x 1/4" machine screw	6005-AM	10.93
6005-BC	1.46	4-40 x 1/2" machine screw	6005-BM	11.73
6005-CC	1.00	4-40 x 3/4" machine screw	6005-CM	7.95
6008-C	1.16	6-32 x 1/4" machine screw	6008-M	9.33
6009-C	1.16	6-32 x 1/2" machine screw	6009-M	9.33
6010-C	1.31	6-32 x 3/4" machine screw	6010-M	10.53
6011-C	1.46	6-32 x 1" machine screw	6011-M	11.73
7141-C	1.57	6-32 x 1 1/4" machine screw	7141-M	12.53
7148-C	2.63	6-32 x 2" machine screw	7148-M	21.07
6013-C	1.10	8-32 x 1/4" machine screw	6013-M	8.81
6014-C	1.21	8-32 x 3/8" machine screw	6014-M	9.66
6015-C	1.36	8-32 x 1/2" machine screw	6015-M	10.93
6016-C	1.44	8-32 x 3/4" machine screw	6016-M	11.51
6017-C	1.82	8-32 x 1" machine screw	6017-M	14.54
7142-C	1.91	8-32 x 1 1/4" machine screw	7142-M	15.25
6020-C	1.62	10-32 x 1/2" machine screw	6020-M	12.87
6021-C	1.77	10-32 x 3/4" machine screw	6021-M	14.05
6022-C	2.15	10-32 x 1" machine screw	6022-M	16.94
7143-C	2.83	10-32 x 1 1/2" machine screw	7143-M	22.55

STEEL BINDING HEAD MACHINE SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
7151-C	$0.86	6-32 x 3/16" binding head	7151-M	$6.93
7152-C	1.10	6-32 x 1/4" binding head	7152-M	8.80
7153-C	.97	6-32 x 3/8" binding head	7153-M	7.83
7158-C	1.21	8-32 x 5/16" binding head	7158-M	9.66

NICKEL-PLATED BRASS BINDING HEAD MACHINE SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
7170-1C	$2.15	4-40 x 1/4" binding head	7170-1M	$17.20
7171-1C	1.76	4-40 x 1/2" binding head	7171-1M	14.05
7152-1C	2.53	6-32 x 1/4" binding head	7152-1M	20.27
7153-1C	2.53	6-32 x 3/8" binding head	7153-1M	20.27
7118-1C	2.75	6-32 x 1/2" binding head	7118-1M	22.00
7173-1C	2.45	6-32 x 3/4" binding head	7173-1M	19.64
7119-1C	3.21	8-32 x 3/8" binding head	7119-1M	25.61
7120-1C	4.00	8-32 x 1/2" binding head	7120-1M	32.00
7175-1C	4.90	8-32 x 3/4" binding head	7175-1M	39.20
7176-1C	4.10	10-32 x 1/2" binding head	7176-1M	32.86
7177-1C	6.11	10-32 x 3/4" binding head	7177-1M	48.82

OVAL HEAD RACK AND CABINET SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
6540-C	$0.96	6-32 x 1/2" rack screw	6540-M	$ 7.62
5693-C	1.89	10-32 x 3/8" rack screw	5693-M	15.14
6543-C	1.72	10-32 x 3/4" rack screw	6543-M	13.72

MOUNTING SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
6081-C	$5.56	6-32 x 1/2" with No. 6 hole	6081-M	$44.30
6082-C	6.05	6-32 x 13/32" with No. 6 hole	6082-M	48.38
6084-C	12.24	8-32 x 1/4" with No. 8 hole	6084-M	97.99

SELF-TAPPING SHEET METAL SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
6090-C	$1.30	No. 4 x 1/2" metal screw	6090-M	$10.33
6091-C	1.35	No. 6 x 1/4" metal screw	6091-M	10.85
6092-C	1.50	No. 6 x 3/8" metal screw	6092-M	12.00
6093-C	1.55	No. 6 x 1/2" metal screw	6093-M	12.40
6094-C	1.57	No. 6 x 3/4" metal screw	6094-M	12.53
8102-C	1.57	No. 8 x 1/4" metal screw	8102-M	12.53
6095-C	1.78	No. 8 x 3/8" metal screw	6095-M	14.34
6096-C	1.84	No. 8 x 1/2" metal screw	6096-M	14.71
6097-C	2.15	No. 8 x 1" metal screw	6097-M	17.09
6099-C	2.20	No. 10 x 1/2" metal screw	6099-M	17.53
6100-C	2.51	No. 10 x 3/4" metal screw	6100-M	20.04

MISCELLANEOUS SET AND MOUNTING SCREWS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
7202-C	$7.59	8-32 x 3/16" Allen hex set screw	7202-M	$60.62
6005-C	.94	4-36 x 1/4" cartridge screw	6005-M	7.41
6005-AC	1.36	4-40 x 1/4" cartridge screw	6005-AM	10.93

MISCELLANEOUS NICKEL-PLATED NUTS

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
7225-C	$1.66	2-56 x 3/16" wide hex nut	7225-M	$13.33
7226-C	1.76	3-48 x 3/16" wide hex nut	7226-M	14.13
6041-C	1.86	4-36 x 1/4" wide hex nut	6041-M	14.93
6041-AC	1.93	4-40 x 1/4" wide hex nut	6041-AM	15.46
6042-C	2.05	6-32 x 1/4" wide hex nut	6042-M	16.40
7230-C	2.15	6-32 x 5/16" wide hex nut	7230-M	17.20
6043-C	2.05	8-32 x 1/4" wide hex nut	6043-M	16.40
7233-C	2.15	8-32 x 11/32" wide hex nut	7233-M	17.20
7235-C	2.75	1/4-20 x 7/16" wide hex nut	7235-M	22.00
6050-AC	2.48	3/8-32 vol. control mtg. nut	6050-AM	19.93
6050-BC	3.31	15/32-32 toggle switch nut	6050-BM	26.53
6050-CC	5.34	15/32-32 round ring nut	6050-CM	42.68
6052-C	1.21	No. 6 Tinnerman speed nut	6052-M	9.66
6053-C	1.21	No. 8 Tinnerman speed nut	6053-M	9.66
6031-C	9.98	6-32 acorn nut	6031-M	79.88
6032-C	4.51	8-32 acorn nut	6032-M	36.07
6033-C	6.63	10-32 acorn nut	6033-M	53.08
6655-C	3.83	6-32 knurled thumb nut	6655-M	30.73
6656-C	3.83	8-32 knurled thumb nut	6656-M	30.73
6657-C	7.66	10-32 knurled thumb nut	6657-M	61.30
6658-C	4.09	6-32 wing nut	6658-M	32.68

WASHERS FOR EVERY PURPOSE

C-PACK G-C No.	Net*	Description	M-PACK G-C No.	Net*
7322-C	$1.10	No. 2 internal lock washer	7322-M	$ 8.81
7324-C	.70	No. 4 internal lock washer	7324-M	5.59
7326-C	.75	No. 6 internal lock washer	7326-M	5.96
7328-C	.74	No. 8 internal lock washer	7328-M	5.92
7330-C	.74	No. 10 internal lock washer	7330-M	5.92
7332-C	.98	No. 1/4" internal lock washer	7332-M	7.79
7335-C	1.94	No. 3/8" internal lock washer	7335-M	15.41
7354-C	.68	No. 4 external lock washer	7354-M	5.41
7356-C	.68	No. 6 external lock washer	7356-M	5.41
7358-C	.74	No. 8 external lock washer	7358-M	5.92
6503-C	.89	No. 4 split type lock washer	6503-M	7.12
6504-C	.73	No. 6 split type lock washer	6504-M	5.76
6505-C	2.10	No. 8 split type lock washer	6505-M	16.89
7385-C	3.01	5/8" ID x 5/16" OD spring wshr.	7385-M	24.06
7386-C	2.54	3/4" ID x 3/8" OD spring wshr.	7386-M	20.32
6162-C	.76	No. 8 cup washer	6162-M	6.09
6163-C	.96	No. 10 cup washer	6163-M	7.62
6513-C	.76	No. 6 flat fiber washer	6513-M	6.09
6514-C	.76	No. 8 flat fiber washer	6514-M	6.09
6515-C	.76	No. 10 flat fiber washer	6515-M	6.09
6516-C	.91	No. 1/4" flat fiber washer	6516-M	7.28
6517-C	1.20	No. 3/8" flat fiber washer	6517-M	9.47
6525-C	1.96	No. 6 extruded fiber washer	6525-M	15.73
6526-C	1.86	No. 8 extruded fiber washer	6526-M	14.93
6527-C	2.00	No. 10 extruded fiber washer	6527-M	16.00
6528-C	2.15	No. 1/4" extruded fiber washer	6528-M	17.20
6529-C	2.00	No. 3/8" extruded fiber washer	6529-M	16.00
6154-C	.70	No. 4 metal washer	6154-M	5.59
6155-C	.70	No. 6 metal washer	6155-M	5.59
6156-C	.76	No. 8 metal washer	6156-M	6.09
7306-C	.73	No. 10 metal wshr., 3/8" O.D.	7306-M	5.76
6157-C	.76	No. 10 metal wshr., 1/2" O.D	6157-M	6.09
6158-C	1.06	No. 1/4" metal washer	6158-M	8.46

BRASS EYELETS

C-PACK G-C No.	Net*	Dimensions, In. Shank Dia.	Lgth.	Head Dia.	M-PACK G-C No.	Net*
7251-C	$0.51	.087	1/8	.145	7251-M	$4.08
7252-C	.64	.087	5/32	.145	7252-M	5.23
7253-C	.74	.087	7/32	.145	7253-M	5.92

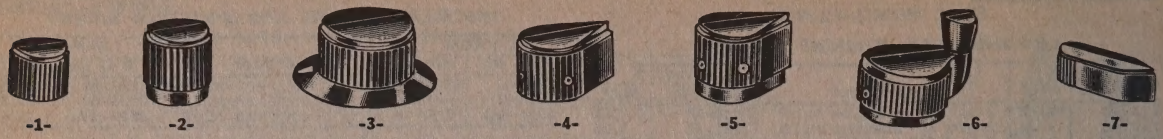
NICKEL PLATED RIVETS

C-PACK G-C No.	Net*	Dimensions, In. Shank Dia.	Length	M-PACK G-C No.	Net*
7286-C	$1.19	.121	1/8	7286-M	$9.47
7288-C	.94	.121	3/16	7288-M	8.17

*Net each package (100 pieces per package). *Net each package (1000 pieces). Quantity prices on request.

RAYTHEON Raytheon Control Knobs

MS91528 (STANDARD) AND DESIGNER SERIES CONTROL KNOBS



-1- -2- -3- -4- -5- -6- -7-

Approved types per MS91528, Rev. C; cross reference (MIL No. to Raytheon No.) available on request. Eight standard knob types in six basic sizes to meet your every requirement. **Order by complete Catalog Number:** E.g., G 70-3BL-2G indicates **Gray** color knob; approx. diameter of knob in hundredths of inches is **70** (.70″); description of knob is **-3** (see table below); knob is back lighted (**BL**); shaft size is **-2** (see table below); finish is **G** (matte).

Prefix (Color)		1st Number (Size)	2nd Number (Description)	3rd Number (Shaft Size)		Suffix (Finish)
No prefix	Black	50	*	-1	1/8″	†
DS	Alum. cap	70	7/10″	-2	1/4″	†
G‡	Gray	90	9/10″	-3	3/16″	
R‡	Red	125	1 1/4″	-4	.267″	
		175	1 3/4″			
		225	2 1/4″			

***Description:** **-1,** round no skirt; **-2,** round plain skirt; **-3,** round dial skirt; **-4,** pointer no skirt; **-5,** pointer plain skirt; **-6,** crank (spinner); **-7,** bar pointer, no skirt; **-8,** bar pointer, dial skirt with pointer mark. **BD,** black dot; **BL,** back lighted dial skirt; **CB,** concentric base for outer shaft has no cap, shaft hole drilled through; **LK,** knob lock pointer used with knob lock; **NP,** no pointer; **WD,** 1/8″ white dot on cap; **WL,** white line. †**Finish:** No suffix, mirror finish; suffix G, matte (dull) finish. ‡Not applicable to all types listed, write for complete information on colored knobs.

DESIGNER SERIES CONTROL KNOBS

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
DS 70-1-1*	$0.90	DS 70-2BD-2G	$1.54	DS 90-2BD-2	$1.31
DS 70-1-1G*	.94	DS 70-3-1†	1.21	DS 90-2BD-2G	1.43
DS 70-1BD-1	1.09	DS 70-3-1G†	1.23	DS 90-3-2†	1.43
DS 70-1BD-1G	1.10	DS 70-3-2†	1.27	DS 90-3-2G†	1.46
DS 70-1BD-2	1.18	DS 70-3-2G†	1.30	DS 90-4-2	1.22
DS 70-1BD-2G	1.20	DS 70-4-2	1.17	DS 90-4-2G	1.24
DS 70-1-2	1.07	DS 70-4-2G	1.20	DS 90-5-2	1.33
DS 70-1-2G	1.09	DS 70-5-2	1.22	DS 90-5-2G	1.36
DS 70-1-3*	1.05	DS 70-5-2G	1.35	DS 125-1-2	1.49
DS 70-1-3G*	1.07	DS 90-1-2	1.05	DS 125-1-2G	1.51
DS 70-2-1	1.22	DS 90-1-2G	1.07	DS 125-2-2	1.40
DS 70-2-1G	1.25	DS 90-1-3*	1.29	DS 125-2-2G	1.44
DS 70-2BD-1	1.32	DS 90-1BD-1G	1.38	DS 125-3-2†	1.67
DS 70-2BD-1G	1.35	DS 90-1BD-2	1.40	DS 125-3-2G†	1.76
DS 70-2-2	1.24	DS 90-1BD-2G	1.45	DS 125-6-2	2.50
DS 70-2-2G	1.30	DS 90-2-2	1.29	DS 175-6-2G	2.97
DS 70-2BD-2	1.49	DS 90-2-2G	1.31		

COLOR KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
G50-1-1*	$0.77	G70-3NP-2G	$1.20	G90-3CB-2G	$1.44
G50-1-1G*	.85	G70-4-2	.95	G90-3NP-2G	1.24
G50-2-1	.88	G70-4-2G	1.02	G90-4-2G	1.13
G50-2-1G	.95	G70-5-2	1.06	G90-5-2	1.17
G50-3-1G†	1.05	G70-5-2G	1.13	G90-5-2G	1.23
G50-4-1	.77	G70-7WL-2G	1.22	G90-7WL-2G	1.22
G50-4-1G	.85	G70-8WL-2G	1.46	G90-8WL-2G	1.53
G50-5-1G	.95	R70-1WD-1	1.20	G125-1-2	1.06
R50-1WD-1	1.11	R70-1WD-1G	1.28	G125-1-2G	1.13
R50-1WD-1G	1.18	R70-2-2	1.06	G125-2-2G	1.23
G70-1-1*	1.02	R70-2-2G	1.13	G125-3-2†	1.38
G70-1-1G*	1.09	R70-3-2	1.30	G125-3-2G†	1.39
G70-1-2	.95	R70-3-2G	1.23	G125-6-2	2.84
G70-1-2G	1.02	G90-1-1G	1.17	G125-6-2G	2.93
G70-2-2	1.06	G90-1-2G	1.07	G175-1-2	1.50
G70-2-2G	1.13	G90-1CB-2G	1.07	G175-1-2G	1.54
G70-2CB-2G	1.24	G90-2-2	1.10	G175-3-2†	1.74
G70-3-2†	1.17	G90-2-2G	1.18	G175-3-2G†	1.85
G70-3-2G†	1.23	G90-3-2	1.21	G175-6-2	3.16
G70-3CB-2G	1.23	G90-3-2G	1.29	G225-6-2G	3.25

SPECIAL BLACK KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
50-1WD-1	$0.98	70-2WD-1	$1.19	90-1WD-2	$1.06
50-1WD-1G	1.05	70-2WD-1G	1.25	90-1WD-2G	1.13
50-2WD-1	1.09	70-2WD-2	1.30	90-2CB-2§	1.10
50-2WD-1G	1.18	70-2WD-2G	1.39	90-2CB-2G§	1.17
70-1-3*	1.02	70-3CB-2	1.16	90-2WD-2	1.17
70-1-3G*	1.09	70-3CB-2G	1.13	90-2WD-2G	1.35
70-1CB-2G	.90	70B-3CB-2‡	1.20	90-3CB-2§	1.09
70B-1CB-2‡	.84	70B-3CB-2G‡	1.29	90-3CB-2G§	1.17
70B-1CB-2G‡	.90	90-1-3*	1.10	90-3CB-4§	1.21
70-1LK-2	1.29	90-1-3G*	1.14	90-3CB-4G§	1.29
70-1LK-2G	1.38	90-1CB-2§	.88	125-1LK-2	1.32
70-1WD-1	1.08	90-1CB-2G§	.95	125-1LK-2G	1.47
70-1WD-1G	1.16	90-1CB-4§	1.00	125-1WD-2G	1.19
70-1-WD-2	1.27	90-1CB-4G§	1.07	125-3CB-2§	1.18
70-1-WD-2G	1.36	90-1LK-2	1.22	125-3CB-2G§	1.23
70-2CB-2G	1.09	90-1LK-2G	1.24		
70B-2CB-2G‡	1.10	90-1WD-1G	1.20		

STANDARD BLACK KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
50-1-1*	$0.76	70-3NP-2	$1.01	90-8WL-2G	$1.42
50-1-1G*	.85	70-3NP-2G	1.07	125-1-2	.95
50-2-1	.89	70-4-1	.90	125-1-2G	1.02
50-2-1G	.98	70-4-1G	.98	125-2-2	1.05
50-3-1†	1.00	70-4-2	.98	125-2-2G	1.12
50-3-1G†	1.02	70-4-2G	1.05	125-3-2†	1.33
50-3BL-1G	2.74	70-5-1	1.01	125-3-2G†	1.42
50-3NP-1	.83	70-5-1G	1.07	125-3BL-2G	3.91
50-3NP-1G	.89	70-5-2	1.09	125-3NP-2	1.10
50-4-1	.78	70-5-2G	1.18	125-3NP-2G	1.18
50-4-1G	.85	70-7WL-2	1.01	125-6-2	2.75
50-5-1	.88	70-7WL-2G	1.09	125-6-2G	2.78
50-5-1G	.98	70-8WL-2	1.27	125-7-2	1.55
70-1-1*	.90	70-8WL-2G	1.34	125-7-2G	1.56
70-1-1G*	.98	90-1-1G*	1.08	175-1-2	1.33
70-1-2	1.05	90-1-2	1.02	175-1-2G	1.39
70-1-2G	1.14	90-1-2G	1.11	175-2-2	1.44
70B-1-2‡	.91	90-2-1G	1.13	175-2-2G	1.51
70B-1-2G‡	.99	90-2-2	1.00	175-3-2†	1.60
70-2-1	1.01	90-2-2G	1.07	175-3-2G†	1.67
70-2-1G	1.08	90-3-1G†	1.33	175-3BL-2G	4.62
70-2-2	1.09	90-3-2†	1.27	175-3NP-2	1.53
70-2-2G	1.18	90-3-2G†	1.35	175-3NP-2G	1.61
70B-2-2‡	1.03	90-3BL-2G	3.89	175-6-2	2.98
70B-2-2G‡	1.10	90-3NP-2	1.06	175-6-2G	3.07
70-3-1†	1.29	90-3NP-2G	1.13	225-1-2	1.53
70-3-1G†	1.36	90-4-1G	1.10	225-1-2G	1.62
70B-3-1‡	1.22	90-4-2	1.10	225-2-2	1.55
70B-3-1G‡	1.23	90-4-2G	1.18	225-2-2G	1.63
70-3-2†	1.32	90-5-2	1.23	225-3-2†	1.77
70-3-2G†	1.30	90-5-2G	1.30	225-3-2G†	1.87
70B-3-2‡	1.43	90-7WL-2	1.07	225-3NP-2G	1.83
70B-3-2G‡	1.43	90-7WL-2G	1.09	225-6-2	3.10
70-3BL-2G	3.27	90-8WL-2	1.34	225-6-2G	3.16

TACTILE SHAPE KNOBS PER MS91528

Final figure in number indicates tactile symbol and color cap; 1—Intensity, Blue; 2—Tune, Orange; 3—Dimmer, White; 4—Gain, Red; 5—Focus, Violet; 6—Range, Yellow; 7—Bearing, Green; 8—Marker, Gray.

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
70-1-2G-1	$1.38	70-3-2G-1	$1.58	90-2-2G-4	$1.77
70-1-2G-3	1.38	70-3-2G-2	1.58	90-2-2G-5	1.77
70-1-2G-4	1.38	70-3-2G-3	1.58	90-2-2G-6	1.77
70-1-2G-5	1.38	70-3-2G-4	1.58	90-4-2G-6	1.66
70-1-2G-6	1.38	70-5-2G-6	1.61	90-5-2G-6	1.77
70-2-2G-1	1.61	90-1-2G-1	1.58	125-6-2G-7	4.04
70-2-2G-2	1.61	90-1-2G-2	1.58	125-6-2G-8	4.04
70-2-2G-3	1.61	90-1-2G-3	1.58	175-6-2G-7	4.33
70-2-2G-4	1.61	90-1-2G-4	1.58	175-6-2G-8	4.33
70-2-2G-5	1.61	90-2-2G-1	1.77		
70-2-2G-6	1.61	90-2-2G-3	1.77		

*Standard or concentric, inner shaft. †With pointer. ‡Round bar. §Used also with Designer Series as concentric base.

• ★ OEM DISCOUNT SCHEDULES

Discounts are applied per item—NOT total units per order.

Quantity	Deduct from List *Designer	*Others	Quantity	Deduct from List *Designer	*Others
1–99	None	None	200–499	13%	20%
100–199	8%	15%	500–999	24%	30%

KNOBS AND ACCESSORIES CONTINUED ON NEXT PAGE

FIVE-WAY BINDING POSTS

Available in two models: Accepting standard banana plug; or, standard .080 test prod. Four other connections include: Wire through center hole; prod through center hole; wire coiled around post and clamped; turret terminal for solder connection. Nylon body with tin-plated metal parts to withstand 50-hour salt spray test; 250-hour 95% humidity test. Rated 30 amps.

Raytheon Cat. No.	Color	Type	Net Each, Lots of* 1-99	100-199	200-499	500-999
BP-100B	Black	Prod	$1.01	$0.86	$0.81	$0.53
BP-101R	Red	Prod	1.01	.86	.81	.58
BP-105B	Black	Banana	.92	.78	.74	.49
BP-106R	Red	Banana	.92	.78	.74	.49

*Colors per style may be mixed for max. discount; minimum order 10 per style.

Raytheon Knobs, Hardware

KNOB CROSS REFERENCE TO MS91528

MS-91528B	Raytheon Cat. No.	MS-91528B	Raytheon Cat. No.	MS-91528B	Raytheon Cat. No.
-0C1B	50-1WD-1G	-1N2B	70-1-2G	-2P1B	90-4-1G
-0D1B	50-2-1G	-1N2BC	70-1CB-2G	-2P2B	90-4-2G
-0D1G	G50-2-1G	-1N2G	G70-1-2G	-2P2G	G90-4-2G
-0E1B	50-2WD-1G	-1N2GC	G70-1CB -2G	-3C2B	125-1WD -2G
-0F1B	50-3-1G				
-0F1G	G50-3-1G	-1O1B	70-3BL-1G	-3D2B	125-2-2G
-0G1B	50-3NP-1G	-1O2B	70-3BL-2G	-3D2BC	125-2CB-2G
-0G1G	G50-3NP -1G	-1P1B	70-4-1G	-3D2G	G125-2-2G
		-1P2B	70-4-2G	-3F2B	125-3-2G
-0K1B	50-5-1G	-1P2G	G70-4-2G	-3F2BC	125-3CB-2G
-0K1G	G50-5-1G	-2C1B	90-1WD-1G	-3F2G	G125-3-2G
-0N1B	50-1-1G	-2C2B	90-1WD-2G	-3G2B	125-3NP-2G
-0N1G	G50-1-1G	-2D1B	90-2-1G	-3G2G	G125-3NP -2G
-0O1B	50-3BL-1G	-2D2B	90-2-2G		
-0P1B	50-4-1G	-2D2BC	90-2CB-2G	-3N2B	125-1-2G
-0P1G	G50-4-1G	-2D2G	G90-2-2G	-3N2BC	125-1CB-2G
-1A2B	70-7WL-2G	-2D2GC	G90-1CB -2G	-3N2G	G125-1-2G
-1A2G	G70-7WL -2G			-3O2B	125-3BL-2G
		-2E1B	90-2WD-1G	-3R2B	125-7-2G
-1B2B	70-8WL-2G	-2E2B	90-2WD-2G	-3R2G	G125-7-2G
-1B2G	G70-8WL -2G	-2F1B	90-3-1G	-3S2B	125-6-2G
		-2F2B	90-3-2G	-3S2G	G125-6-2G
-1C1B	70-1WD-1G	-2F2BC	90-3CD-2G	-4D2B	175-2-2G
-1C2B	70-1WD-2G	-2F2G	G90-3-2G	-4D2G	G175-2-2G
-1D1B	70-2-1G	-2F2GC	G90-3CD -2G	-4F2B	175-3-2G
-1D2B	70-2-2G			-4F2G	G175-3-2G
-1D2BC	70-2CB-2G	-2G2B	90-3NP-2G	-4G2B	175-3NP -2G
-1D2G	G70-2-2G	-2G2G	G90-3NP -2G		
-1D2GC	G70-2CB -2G	-2K1B	90-5-1G	-4G2G	G175-3NP -2G
-1E1B	70-2WD-1G	-2K2B	90-5-2G	-4N2B	175-1-2G
-1E2B	70-2WD-2G	-2K2G	G90-5-2G	-4N2G	G175-1-2G
-1F1B	70-3-1G	-2L2B	90-7WL-2G	-4O2B	175-3BL-2G
-1F2B	70-3-2G	-2L2G	G90-7WL -2G	-4S2B	175-6-2G
-1F2BC	70-3CB-2G			-4S2G	G175-6-2G
-1F2G	G70-3-2G	-2M2B	90-8WL-2G	-5D2B	225-2-2G
-1F2GC	G70-3CB -2G	-2M2G	G90-8WL -2G	-5D2G	G225-2-2G
				-5F2B	225-3-2G
-1G2B	70-3NP-2G	-2N1B	90-1-1G	-5F2G	G225-3-2G
-1G2G	G70-3NP -2G	-2N1G	G90-1-1G	-5G2B	225-3NP-2G
		-2N2B	90-1-2G	-5G2G	G225-3NP -2G
-1K1B	70-5-1G	-2N2BC	90-1CB-2G		
-1K2B	70-5-2G	-2N2G	G90-1-2G	-5N2B	225-1-2G
-1K2G	G70-5-2G	-2N2GC	G90-1CB -2G	-5N2G	G225-1-2G
-1N1B	70-1-1G			-5S2B	225-6-2G
-1N1G	G70-1-1G	-2O2B	90-3BL-2G	-5S2G	G225-6-2G

SELF-LOCKING PUSH-TO ENGAGE KNOBS

Designed for maintaining control settings under shock and vibration. Knobs have zero backlash allowing for infinite resolution. Sturdy polycarbonate plastic construction. Available in mirror or matte finish. Custom variations available; complete information on request. **Model Number Description: PTE,** push-to-engage; **G,** gray (omit for black) color; **70,** ¼" dia.; **2,** skirted round or **3,** dial skirted round; **1,** ⅛" shaft hole, **2,** ¼" shaft hole; **G,** matte finish (omit for mirror finish).

Black Finish		Gray Finish	
Raytheon No. PTE-	List Each	Raytheon No. PTE-	List Each
70-2-1	$6.00	G70-2-1	$6.00
70-2-1G	5.85	G70-2-1G	5.85
70-2-2	6.00	G70-2-2	6.00
70-2-2G	5.85	G70-2-2G	5.85
70-3-1	7.25	G70-3-2	7.25
70-3-1G	7.05	G70-3-2G	7.05
70-3-2	7.25		
70-3-2G	7.05		

KNOB LOCKS

Use with standard control knobs for a dependable means of holding precise or critical control settings under shock or vibration conditions. Very little larger than the knob itself. An eighth-turn locks the knob firmly. Mounts directly on threaded bushing of the control.

Raytheon Cat. No.	For Knob Series	Finish	O.D.	Thread	List Each*
KL701	70	Mirror	1"	⅜"-32	$1.32
KL701G	70	Matte	1"	⅜"-32	1.40
KL702†	70	Mirror	1"	¼"-32	1.44
KL702G†	70	Matte	1"	¼"-32	1.55
KL703*	70	Mirror	1"	⅜"-32	2.58
KL703G*	70	Matte	1"	⅜"-32	2.68
KL901	90	Mirror	1⅛"	⅜"-32	1.50
KL901G	90	Matte	1⅛"	⅜"-32	1.58
KL902*	90	Mirror	1⅛"	⅜"-32	2.74
KL902G*	90	Matte	1⅛"	⅜"-32	2.76
KL1251	125	Mirror	1⅝"	⅜"-32	1.55
KL1251G	125	Matte	1⅝"	⅜"-32	1.64

*Splash proof. †⅛" shaft.

★OEM DISCOUNT SCHEDULE FOR KNOBS & ACCESSORIES

Discounts are applied on units per item—NOT total units per order. **Quantity:** 1-99, none; 100-199, –15%; 200-499, –20%; 500-999, –30%.

400 AND PANELRAMA SERIES CONTROL KNOBS

-R- (Panelrama)

-D-

Modern styling for commercial or industrial use. Series 400 available in three colors. Durable construction of high impact acrylonitrite-butadiene-styrene (ABS) with lusterless finish. Metal bushing with two set screws. **Size:** Prefix indicates size: **407,** .725" dia.; **409,** .875" dia.; **412,** 1.255" dia.; **PS6,** .625" dia.; **PS7,** .725" dia.; **PS12,** 1.255" dia. **Style:** Following letter denotes style: **R,** round; **D,** round, dial skirt; **P,** bar pointer; **PD,** bar pointer, dial skirt. **Shaft Size:** Following number indicates shaft size: **1,** ⅛" shaft; **2,** ¼" shaft. **Color:** Last number indicates color: **1,** black; **3,** beige; **7,** blue-gray.

400 SERIES CONTROL KNOBS

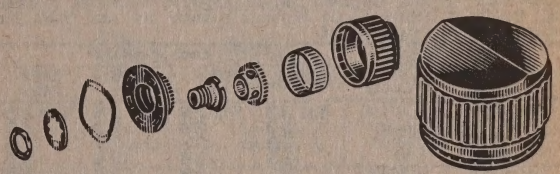
Raytheon Cat. No.	List Each*	Raytheon Cat. No.	List Each*	Raytheon Cat. No.	List Each*
407D1K1	$0.68	407PD2K1	$0.69	412D2K1	$0.69
407D2K1	.63	409D2K1	.67	412D2K3	.69
407D2K3	.63	409D2K3	.67	412P2K1	.70
407D2K7	.63	409R2K1	.57	412PD2K1	.83
407R1K1	.54	409R2K3	.57	412R2K1	.55
407R2K1	.51	409P2K1	.63	412R2K3	.55
407R2K3	.51	409PD2K1	.76		
407R2K7	.51	409PD2K3	.76		

PANELRAMA SERIES CONTROL KNOBS

Black body with aluminum disk.

PS6D2K1R	$0.90	PS7D2K1R	$0.93	PS12D2K1R	$1.09
PS7R2K1R	.76	PS7PD2K1R	1.02		

MICROVERNIER® CONTROLS



Unique control utilizes principle of harmonic drive to provide high-resolution tuning or precise zero setting. Offers high 40:1 tuning ratio, and instantaneous 1:1 ratio for fast sluing by pushing in on control. Entire mechanism contained in front panel knob. Eliminates need for expensive gear assemblies. Tested to 500,000 cycles minimum rotational life. Temperature range, –55° C to +85° C. Available in three sizes and manufactured to meet requirements of MIL-K-3926 and MS91528. Glossy or matte finish. **Size:** Prefix **MV** indicates Microvernier; **125,** 1¼" dia.; **175,** 1¾" dia.; **225,** 2¼" dia. **Dial Skirt:** Following number indicates: **2,** without dial skirt; **3,** with dial skirt. (Dial skirt not available with MV125 controls.) **Type:** Following letter indicates: **A,** through-the-panel mounting type; **B,** potentiometer mounting type. **Color:** Standard color is black lustre finish, last letter **G,** indicates black matte finish.

Glossy Finish		Matte Finish	
Raytheon Cat. No.	List Each	Raytheon Cat. No.	List Each
MV125-2A-2	$ 9.80	MV125-2A-2G	$ 9.70
MV125-2B-2	9.80	MV125-2B-2G	9.70
MV175-2A-2	10.10	MV175-2A-2G	10.00
MV175-2B-2	10.10	MV175-2B-2G	10.00
MV175-3A-2	10.65	MV175-3A-2G	10.55
MV175-3B-2	10.65	MV175-3B-2G	10.55
MV225-2A-2	10.55	MV225-2A-2G	10.45
MV225-2B-2	10.55	MV225-2B-2G	10.45
MV225-3A-2	11.35	MV225-3A-2G	11.25
MV225-3B-2	11.35	MV225-3B-2G	11.25

KNOB REDUCING BUSHINGS

Converts knobs to fit smaller shafts by reducing knob hole size.

Raytheon Cat. No.	Description	List Each
RB100	Converts ¼" shaft to ⅛"	$0.19
RB200	Converts ¼" shaft to $^5/_{16}$"	.19

SHAFT LOCKS

Raytheon Cat. No.	Color	For Shaft	Net Each, Lots of 1-99	100-199	200-499
SL-100B	Black	¼"	$0.44	$0.37	$0.35
SL-101R	Red	¼"	.47	.40	.38
SL-110B*	Black	¼"	.29	.25	.23
SL-105B	Black	⅛"	.33	.28	.26

*Short style for use under knobs.

A

B

C

D

E

TEST JACKS

Extra reliability assured through use of finest materials: Nylon insulators; beryllium copper spring pin contacts; gold over silver-plated contact sleeves; convenient color-coding.

STANDARD TYPES PER MS39024/10 (FIG. A)

Meets MS39024/10 requirements. Units have nickel-plated brass sleeve for mounting; beryllium copper spring pin contact. With nickel-plated brass and lockwasher; nylon or white Teflon® insulators. **Terminal Type:** TJ101Y thru TJ110V turret; all others spade. ®Registered DuPont trademark.

MS39024 Number	Raytheon Cat. No.	Color	Net Each, Lots of* 1-99	100-499	500-999	1000-2499
MS39024/10-1	TJ108W	White	$0.47	$0.40	$0.38	$0.35
MS39024/10-2	TJ103R	Red	.47	.40	.38	.35
MS39024/10-3	TJ105BL	Black	.47	.40	.38	.35
MS39024/10-4	TJ102B	Brown	.47	.40	.38	.35
MS39024/10-5	TJ106GN	Green	.47	.40	.38	.35
MS39024/10-6	TJ104OR	Orange	.47	.40	.38	.35
MS39024/10-7	TJ107MB	Blue	.47	.40	.38	.35
MS39024/10-8	TJ101Y	Yellow	.47	.40	.38	.35
MS39024/10-9	TJ109GY	Gray	.47	.40	.38	.35
MS39024/10-10	TJ110V	Violet	.47	.40	.38	.35
MS39024/10-11	TJ158W	White	.53	.45	.42	.40
MS39024/10-12	TJ153R	Red	.53	.45	.42	.40
MS39024/10-13	TJ155BL	Black	.53	.45	.42	.40
MS39024/10-14	TJ152B	Brown	.53	.45	.42	.40
MS39024/10-15	TJ156GN	Green	.53	.45	.42	.40
MS39024/10-16	TJ154OR	Orange	.53	.45	.42	.40
MS39024/10-17	TJ157MB	Blue	.53	.45	.42	.40
MS39024/10-18	TJ151Y	Yellow	.53	.45	.42	.40
MS39024/10-19	TJ159GY	Gray	.53	.45	.42	.40
MS39024/10-20	TJ160V	Violet	.53	.45	.42	.40

*Colors may be mixed for max. discount; order 25 per color.

SUBMINIATURE, FIXED-CONTACT TYPE (FIG. B)

Less than 21/32" long for extra ease and speed in mounting. Press-in fit; insulator behind panel expands slightly for firm hold. No threaded hardware required.

Raytheon Cat. No.	Color	Net Each, Lots of* 1-249	250-499	500-999	1000-2499
TJ-400N	Natural	$0.33	$0.28	$0.26	$0.25
TJ-401Y	Yellow	.33	.28	.26	.25
TJ-402B	Brown	.33	.28	.26	.25
TJ-403R	Red	.33	.28	.26	.25
TJ-4040R	Orange	.33	.28	.26	.25
TJ-405BL	Black	.33	.28	.26	.25
TJ-406GN	Green	.33	.28	.26	.25
TJ-407MB	Blue	.33	.28	.26	.25
TJ-408W	White	.33	.28	.26	.25

STANDARD PRINTED CIRCUIT TYPE (FIG. C)

Miniature unit for printed circuit uses; no mtg. hardware required. Inserts through panel on panels to 1/4" thick. When dip-soldered, gold-plated contact sleeve is firmly bonded electrically and mechanically to the panel. Packaged 50 per color per style.

Raytheon Cat. No.	Color	Net Each, Lots of* 1-99	100-499	500-999	1000-2499
TJ-300N	Natural	$0.32	$0.27	$0.26	$0.24
TJ-301Y	Yellow	.32	.27	.26	.24
TJ-302B	Brown	.32	.27	.26	.24
TJ-303R	Red	.32	.27	.26	.24
TJ-304OR	Orange	.32	.27	.26	.24
TJ-305BL	Black	.32	.27	.26	.24
TJ-306GN	Green	.32	.27	.26	.24
TJ-307MB	Blue	.32	.27	.26	.24
TJ-308W	White	.32	.27	.26	.24
TJ-309GY	Gray	.32	.27	.26	.24
TJ-310V	Violet	.32	.27	.26	.24

SHORT PRINTED CIRCUIT TYPE

Similar to above units but with shorter soldering body. Recommended for flow-soldered applications.

Raytheon Cat. No.	Color	1-249	250-499	500-999	1000-2499
TJ-361Y	Yellow	$0.32	$0.27	$0.26	$0.24
TJ-362B	Brown	.32	.27	.26	.24
TJ-363R	Red	.32	.27	.26	.24
TJ-365BL	Black	.32	.27	.26	.24
TJ-366GN	Green	.32	.27	.26	.24
TJ-368W	White	.32	.27	.26	.24

RIGHT-ANGLE PRINTED CIRCUIT TYPE (FIG. D)

TJ-201Y	Yellow	$0.35	$0.30	$0.28	$0.26
TJ-202BR	Brown	.35	.30	.28	.26
TJ-203R	Red	.35	.30	.28	.26
TJ-204OR	Orange	.35	.30	.28	.26
TJ-205BL	Black	.35	.30	.28	.26
TJ-206GN	Green	.35	.30	.28	.26
TJ-207MB	Blue	.35	.30	.28	.26
TJ-208W	White	.35	.30	.28	.26
TJ-209GY	Gray	.35	.30	.28	.26
TJ-210V	Violet	.35	.30	.28	.26

*Colors per style may be mixed for max. discount; min. order, 25 per style.

SHORT RIGHT-ANGLE PRINTED CIRCUIT TYPE

Raytheon Cat. No.	Color	Net Each, Lots of* 1-249	250-499	500-999	1000-2499
TJ-251Y	Yellow	$0.35	$0.30	$0.28	$0.26
TJ-252BR	Brown	.35	.30	.28	.26
TJ-253R	Red	.35	.30	.28	.26
TJ-254OR	Orange	.35	.30	.28	.26
TJ-255BL	Black	.35	.30	.28	.26
TJ-256GN	Green	.35	.30	.28	.26
TJ-257MB	Blue	.35	.30	.28	.26
TJ-258W	White	.35	.30	.28	.26
TJ-259GY	Gray	.35	.30	.28	.26
TJ-260V	Violet	.35	.30	.28	.26

*Colors per style may be mixed for max. discount; min. order, 25 per style.

CAPTIVE HARDWARE (FIG. E)

Standard line of stainless steel fastening hardware meets MIL-E-16400 (SHIPS) requirements; will meet MIL-E-5400 and MIL-P-11268 (Sig. C) when painted or dulled in accordance to those specifications. Slotted-head thumb screw, insert bushings, floating nut assembly, gasket and retainer make complete assembly. All exposed parts are stainless steel. Nut is cadmium-plated brass; nut bracket cadmium-plated steel. Nut is entirely captivated by the bracket. Gasket is neoprene rubber. **Write for full data.**

THUMB SCREWS

Raytheon Cat. No.	Thread	Lgth., In.	Net Each, Lots of 1-499*	500-999	1000-2499	2500-4999
CS-100	8-32	5/16	$0.96	$0.86	$0.77	$0.72
CS-101	8-32	3/4	.96	.86	.77	.72
CS-102	8-32	7/8	.96	.86	.77	.72
CS-103	8-32	1	.96	.86	.77	.72
CS-111	10-24	7/8	1.03	.93	.82	.77
CS-112	10-24	1	1.03	.93	.82	.77
CS-120	10-32	3/4	1.03	.93	.82	.77
CS-121	10-32	7/8	1.03	.93	.82	.77
CS-122	10-32	1	1.03	.93	.82	.77
CS-130	1/4-20	7/8	1.32	1.19	.106	.99
CS-131	1/4-20	1	1.32	1.19	.106	.99
CS-132	1/4-20	1 1/8	1.32	1.19	.106	.99
CS-133	1/4-20	1 1/4	1.32	1.19	.106	.99
CS-134	1/4-20	1 3/8	1.32	1.19	.106	.99
CS-135	1/4-20	1 1/2	1.32	1.19	.106	.99
CS-142	5/16-18	1 1/2	1.93	1.74	1.54	1.45
CS-143	5/16-18	1 3/4	1.93	1.74	1.54	1.45

PANEL INSERTS

Raytheon Cat. No.	Thread	Dia., In.	Net Each, Lots of 1-499*	500-999	1000-2499	2500-4999
PIN-100	8-32	.262	$0.30	$0.27	$0.24	$0.23
PIN-101	8-32	.232	.30	.27	.24	.23
PIN-102	8-32	.187	.30	.27	.24	.23
PIN-103	8-32	.124	.30	.27	.24	.23
PIN-110	10-24	.325	.33	.30	.26	.25
PIN-111	10-24	.295	.33	.30	.26	.25
PIN-112	10-24	.250	.33	.30	.26	.25
PIN-113	10-24	.187	.33	.30	.26	.25
PIN-114	10-24	.125	.33	.30	.26	.25
PIN-120	10-32	.325	.35	.32	.28	.26
PIN-121	10-32	.295	.35	.32	.28	.26
PIN-122	10-32	.250	.35	.32	.28	.26
PIN-123	10-32	.187	.35	.32	.28	.26
PIN-124	10-32	.125	.35	.32	.28	.26
PIN-130	1/4-20	.387	.39	.35	.31	.29
PIN-131	1/4-20	.357	.39	.35	.31	.29
PIN-132	1/4-20	.312	.39	.35	.31	.29
PIN-133	1/4-20	.249	.39	.35	.31	.29
PIN-134	1/4-20	.187	.39	.35	.31	.29
PIN-140	5/16-18	.450	.54	.49	.43	.41
PIN-141	5/16-18	.420	.54	.49	.43	.41
PIN-142	5/16-18	.375	.54	.49	.43	.41
PIN-143	5/16-18	.312	.54	.49	.43	.41
PIN-144	5/16-18	.250	.54	.49	.43	.41

NUT BRACKET ASSEMBLIES

NB-100	8-32	.....	$0.12	$0.11	$0.10	$0.09
NB-101	10-24	.....	.13	.12	.10	.10
NB-102	10-32	.....	.14	.13	.10	.11
NB-103	1/4-20	.....	.21	.19	.17	.16
NB-104	5/16-18	.....	.26	.23	.21	.20

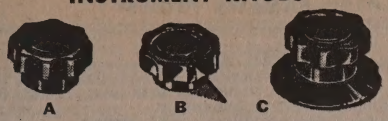
GASKETS AND GASKET RETAINERS

Raytheon Cat. No.	Thread	Description	Net Each, Lots of 1-499*	500-999	1000-2499
GS-100	10-31/2	Gasket	$0.08	$0.07	$0.06
GS-101	1/4-20	Gasket	.08	.07	.06
GS-102	5/16-18	Gasket	.08	.07	.06
GS-103	8-32	Gasket	.08	.07	.06
GSR-115	10-31/2	Retainer	.14	.13	.11
GSR-116	1/4-20	Retainer	.14	.13	.11
GSR-117	5/16-18	Retainer	.14	.13	.11
GSR-118	8-32	Retainer	.14	.13	.11

*Sizes per type may be mixed for maximum discount.

H. H. Smith Knobs, Jacks, Plugs

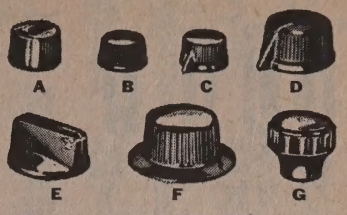
INSTRUMENT KNOBS



Molded black Bakelite® instrument knobs with molded-in brass insert for ¼" shafts. **Style B** has white vinyl pointer. **Style C** is skirt type with white indicator line. **Style D** is similar to Style A except with protruding brass insert for mounting special dials and pointers. ®Registered Bakelite Corp. trademark.

H. H. Smith No.	Style	O.D.	Special	Height	Net Each
2200	A	1⅛"	.....	5/8"	$0.52
2201	A	1⅜"	.....	11/16"	.53
2202	A	1⅝"	.....	¾"	.59
2203	A	2⅜"	.....	⅞"	.80
2204	B	1⅛"	¾" pointer	11/16"	.78
2205	B	1⅜"	1 1/16" pointer	¾"	.79
2206	B	1⅝"	1 3/16" pointer	13/16"	.84
2207	B	2⅜"	1 9/16" pointer	15/16"	1.08
2208	C	1⅛"	1½" skirt	13/16"	1.06
2209	C	1⅜"	1¾" skirt	⅞"	1.14
2210	C	1⅝"	2 1/16" skirt	29/32"	1.23
2211	C	2⅜"	3" skirt	1 1/32"	1.55

CONTROL KNOBS



Molded Bakelite control knobs. Supplied with ¼" molded hole. Complete with set screw.

H. H. Smith No.	Style	O.D.	Height	Color	Net Each
2240	A	¾"	19/32"	Black	$0.25
2242	B	11/16"	13/32"	Black	.14
2244*	B	1"	½"	Black	.20
2246	C	11/16"	13/32"	Black	.14
2248*	D	1"	½"	Black	.27
2250*	E	1⅛"	¼"	Black	.22
2252*	F	1½"	11/16"	Black	.29
2258	G	⅛"	¾"	Black	.25

*Recessed for locknut.

LEVER KNOBS WITH ¼" BRASS INSERT

H. H. Smith No.	Style	Length	Height	Color	Net Each
2232	A	1⅝"	19/32"	Black	$0.42
2234	B	1 15/16"	19/32"	Black	.74
2236	C	2½"	⅝"	Black	.41
2238	D	2 11/16"	⅝"	Black	.73

METER OR INSTRUMENT CASES

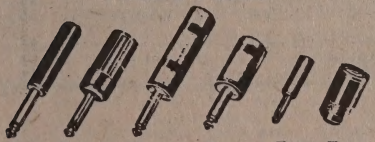
Molded black with four brass inserts for cover mounting. **No. 2257:** 6 13/16" x 5 9/32" x 2 5/16". **No. 2255:** 6¼" x 3¾" x 2". **No. 2289:** 7 7/16" x 8½" x 3".

H.H.S. No.	Insert	Description	Net Each
2255	6-32	Small case	$1.00
2257	4-36	Medium case	2.00
2289	6-32	Large case	2.40
2256	.....	Cover for 2255	.75
2260	.....	Cover for 2257	1.30

POINTER KNOBS

H. H. Smith No.	Style	Type Hole	Color	Net Each
2220	A	¼" plain	Black	$0.15
2223	A	¼" brass insert	Black	.19
2226	B	¼" plain	Black	.28
2228	B	¼" brass insert	Black	.41
2230	C	¼" plain	Black	.22

PHONE PLUGS



STANDARD TYPE

H.H.S. No.	Fig.	Handle	Conductors	Net Each
225	A	Bakelite*	2-Solder	$0.72
307	A	Bakelite*	2-Screw	.75
308	A	Bakelite*	3-Solder	1.17
309	A	Bakelite*	3-Screw	1.20
226	C	Brass	2-Solder	1.02
316	C	Brass	2-Screw	1.05
311	C	Brass	3-Solder	1.35
312	C	Brass	3-Screw	1.38
222	B	Bakelite*	2-Screw	.75
227	B	Bakelite*	3-Solder	1.02
272	C	Brass	2-Screw	1.02
238	C	Brass	3-Solder	1.50
252	D	Brass	2-Screw	.99
228	D	Brass	3-Solder	1.47

MINIATURE TYPE

480	E	Bakelite†	2-Solder	$0.85
481	E	Brass	2-Solder	1.20

*Specify red or black. †Gray only.

MINIATURE EXTENSION JACK (FIG. F)

Shielded, nickel-plated brass with tempered spring and Bakelite insulation. Mates with miniature phone plugs.
H. H. Smith No. 487—Net Each..**$1.35**

TELEPHONE TYPE JACKS

Open or closed Circuits.
2 or 3 Conductor Types.

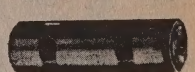
H.H.S. No.	Description	Net Each
275	Open Circuit, 2-Cond.	$0.42
276	Closed Circuit, 2-Cond.	.50
277	Open Circuit, 3-Cond.	.55
278	Closed Circuit, 3-Cond.	.75
482*	Open Circuit, 2-Cond.	.50
483*	Closed Circuit, 2-Cond.	.55

*Miniature type.

MICROPHONE CONNECTORS

H.H.S. No.	Fig.	Description	Net Each
116	A	Single Cont. Female	$0.65
115	B	Single Cont. Male	.48
113	C	Phone Plug Adapter	.47
117	D	Chassis Connector	.60
118	E	Cap and Chain	1.10

INLINE PHONE JACKS



H. H. S. No.	Handle	Conductors	Net Each
274	Bakelite	2-Solder	$0.99
273	Shielded	2-Solder	1.32
288	Bakelite	2-Screw	1.08
289	Shielded	2-Screw	1.44

LACING CORD

NYLON

H. H. S. No.	Class	Test, Lbs.	Yards	Net Each
734	1	70	600	$13.00
735	2	48	800	13.00
736	3	32	1140	13.00

LINEN

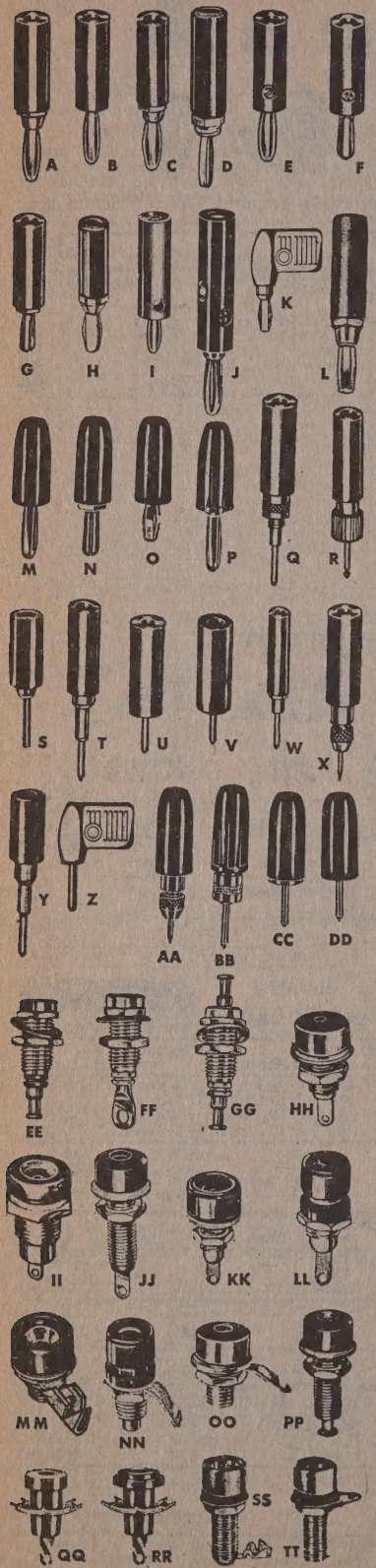
H.H.S. No.	Ply	Test, Lbs.	Yards	Tube, Oz.	Net Each
727	4	20	850	16	$12.00
730*	6	42	600	16	12.00
739†	8	56	470	16	12.00
733	9	60	400	16	12.00
742‡	12	77	300	16	12.00

*Class 3. †Class 2. ‡Class 1.

DACRON

H.H.S. No.	Class	Test Lbs.	Yards	Net Each
722	1	78	750	$11.60
724	3	37	1500	12.70

H. H. Smith Jacks and Plugs



INSULATED BANANA PLUGS*

H. H. S. No.	Fig.	Description	Net Each
212	A	Solderless with nickel-plated phosphor bronze spring; wire may also be soldered to brass stud or directly into plug; 1" handle	$0.35
232	A	Same as above, but with silver-plated spring	.39
242	A	Same, but with nickel-plated beryllium copper spring	.41
262	A	Same, but with silver-plated beryllium copper spring	.44
211	B	Solderless with nickel-plated phosphor bronze spring; 1" handle	.30
261	B	Same, but with silver-plated spring	.33
271	B	Same, but with nickel-plated beryllium copper spring	.35
281	B	Same, but with silver-plated beryllium copper spring	.39
295	C	Screw-term. solderless; nickel-plated phos. bronze spring; 1" handle	.42
296	C	Same, but with silver-plated spring	.46
297	C	Same, but with nickel-plated beryllium copper spring	.48
298	C	Same, but with silver-plated beryllium copper spring	.51
236	D	Same, but cross-drilled hole in spacer for solderless connection	.62
204	E	Set-screw solderless; nickel-plated phosphor bronze spring; 1" handle	.30
254	E	Same, but nickel-plated beryllium copper spring	.35
213	F	Split type with side screw; cross-slotted for spring tension	.28
253	G	Soldered or solderless with internal stud; cross-slotted; 1" handle	.32
291	H	Stud-soldered midget plug with ⅝" machined butyrate handle; 1 3/32" plug with nickel-plated phos. bronze spring; specify red or black	.30
292	H	Same, but silver-plated spring	.33
293	H	Same, but nickel-plated beryllium copper spring	.35
294	H	Same, but silver-plated beryllium copper spring	.39
214	I	Adapts tip plug to banana plug; molded butyrate handle with jack for tip plug; nickel-plated phosphor bronze spring; red or black	.55
1511	J	Solderless banana plug; banana plugs in top and side of machined butyrate handle for unlimited, multiple circuits; phosphor bronze nickel-plated spring; specify red, black, yellow or green	.65
1512	J	Same, but beryllium copper spring	.73
255	K	Meter plug with 4-leaved nickel-plated phosphor bronze spring; specify red or black	.48
285	L	Giant type with machined phenolic plastic handle, deep solder well; 6-leaved phosphor bronze nickel-plated spring; specify red or black	1.30
476	M	Molded nylon plug; soldered or solderless; phosphor bronze nickel-plated spring; specify color†	.31
477	M	Same, but silver-plated phosphor bronze spring; specify color†	.34
478	M	Same, but nickel-plated beryllium copper spring; specify color†	.37
479	M	Same, but silver-plated beryllium copper spring; specify color†	.40
494	N	Solderless split-type plug with molded nylon handle; specify color†	.28
426	O	Midget version of No. 476; specify color†	.28
427	O	Midget version of No. 477; specify color†	.31
428	O	Midget version of No. 478; specify color†	.33
429	O	Midget version of No. 479; specify color†	.37
455	P	Solderless wrap-around version of No. 476; specify color†	.31
456	P	Solderless wrap-around version of No. 477; specify color†	.34
457	P	Solderless wrap-around version of No. 478; specify color†	.37
458	P	Solderless wrap-around version of No. 479; specify color†	.40

INSULATED TIP PLUGS*

200	Q	Solderless threaded type; 1" handle; 2⅛" long	$0.25
201	Q	Same, but slightly smaller; 1" handle; 1 9/32" long	.25
237	S	Easy-solder hollow tip; ⅝" molded butyrate handle, red or black	.10
229	T	Heavy duty, easy solder connection; 1" handle, 2⅛" long	.26
203	U	Short tip plug inserts flush to handle; 1" handle; 1½" long	.22
283	V	Same as above, but solderless connection	.22
270	W	Subminiature tip with 1" fiber handle; specify red or black	.30
216	X	Phono needle tip with removable chuck; 1" handle; 1⅞" long	.34
215	Y	Std. tip plug with jack for banana plug; ¾" molded butyrate handle; specify red or black	.26
235	Z	Meter tip plug molded in two halves; specify red or black	.35
493	AA	Removable chuck type with molded nylon handle and phono needle; specify color†	.35
490	BB	Solderless type with molded nylon handle; specify color†	.25
492	CC	Short version of above without knurled collar; specify color†	.23
491	DD	Short tip plug; inserts flush to nylon handle; specify color†	.23

INSULATED JACKS‡

1501	EE	Nylon tip jack with metal shell; wrap-around type; specify color†	$0.36
1502	FF	Same, but spade terminal type; specify color†	.50
1503	GG	Same, but feed-thru type; specify color†	.47
1505	EE	Same as 1501 but all-nylon construction; specify color†	.27
1506	FF	Spade terminal version of 1505; specify color†	.36
1507	GG	Feed-thru version of 1505; specify color†	.34
202	HH	Molded thermosetting plastic head; phone tip; mounted in 5/16" hole	.24
240	II	Molded nylon tip jack rated 5,000 VAC, 60 Hz; specify color§	.25
206	JJ	Molded thermosetting plastic head combo jack takes standard phone or banana plugs	.32
282	KK	Molded thermosetting plastic head meter type; specify color§	.35
241	LL	Molded nylon head; insulated from panel; specify color§	.38
219	MM	Molded thermosetting plastic head banana jack; recessed body	.28
221	NN	Nylon head and washer; insulated from panel; for standard banana plugs; specify color§	.38
205	OO	Molded thermosetting plastic head banana jack	.20
256	PP	Molded thermosetting plastic head banana jack; turret terminal	.27
279	QQ	Phone tip jack with dished lockwasher "speedi-mount"; molded thermosetting plastic body; 1 3/32" dia. head	.10
299	RR	Same as 279 except ½" dia. head	.10
286	SS	Giant banana jack; fits ½" hole; panel to ¾"; tinned copper lug; machined butyrate head; specify red or black	.95
287	TT	Same as 286 except brass tinned lug	.95

*Molded thermosetting plastic handle unless otherwise noted. Standard colors: red, black, yellow, green, blue or white except as otherwise noted. †For colors add suffix: **-101**, white; **-102**, red; **-103**, black; **-104**, green; **-105**, blue; **-106**, orange; **-107**, yellow; **-108**, brown; **-112**, purple; **-113**, gray. ‡Standard colors: Red, black, yellow, green, blue or white except as otherwise noted. §Specify red, black, yellow, green or blue.
***Lots of 1–499, Net; 500–999, −16⅔%.**

H. H. Smith

JACKS, PLUGS, TEST LEADS AND BINDING POSTS

NON-INSULATED BANANA PLUGS AND JACKS

H. H. S. No.	Fig.	Description	Net Each *
102	A	3/8" threaded stud; hex brass body; nickel-plated phos. bronze spring	$0.34
103	B	1/2" threaded stud; hex brass body; nickel-plated phos. bronze spring	.29
100	C	Screw-on type; hex brass body; nickel-plated phos. bronze spring	.33
190	C	Same, but with beryllium copper spring	.40
104	D	1/2" threaded stud; hex brass body; split type banana plug	.22
121	E	Midget rivet type; silver-pl. brass body; phos. bronze silvered spring	.22
145	F	Soldered or solderless type with hex body; phos. bronze spring	.34
135	F	Same, but beryllium copper spring	.40
431*	G	6-32 x 3/8" stud type; hex body; phos. bronze spring nickel-plated; 1 3/16" h.	.34
432*	G	Same, but 6-32 x 1/2" stud; 1 5/16" h.	.37
433*	G	Same, but 6-32 x 3/4" stud; 1 5/16" h.	.40
434*	G	Same, but 8-32 x 3/8" stud; 1 3/16" h.	.34
435*	G	Same, but 8-32 x 1/2" stud; 1 5/16" h.	.37
436*	G	Same, but 8-32 x 3/4" stud; 1 5/16" h.	.40
401†	H	6-32 x 3/8" stud type; hex body; phos. bronze spring nickel-plated; 1 5/32" h.	.28
403*	H	Same, but 6-32 x 1/2" stud; 1 5/32" h.	.29
404*	H	Same, but 6-32 x 3/4" stud; 1 17/32" h.	.33
405*	H	Same, but 8-32 x 3/8" stud; 1 5/32" h.	.28
406*	H	Same, but 8-32 x 1/2" stud; 1 5/32" h.	.29
407*	H	Same, but 8-32 x 3/4" stud; 1 17/32" h.	.33
460‡	I	Midget 4-40 x 3/8" stud; nickel-plated phos. bronze spring; 15/16" h.	.29
461‡	I	Same, but 4-40 x 1/2" stud; 1 1/16" h.	.29
462‡	I	Same, but 6-32 x 3/8" stud; 15/16" h.	.29
463‡	I	Same, but 6-32 x 1/2" stud; 1 1/16" h.	.29
111	J	Midget cross-slotted body type; 10-32 x 2 1/64" stud; 2 3/32" h	.17
191	L	Submin. rivet type plug; silver-plated beryl. copper spring; 37/64" h.	.21
192	M	Submin. 2-56 stud type plug similar to No. 191	.30
193	N	Submin. jack rivets direct to chassis or PC board	.15
194	O	Submin. jack rivets direct to chassis or PC (Package of 100)	.20
101	P	Hex body jack with recessed head; fits 1/4" hole; panels to 5/16" thick	.19
109	Q	Std. hex head banana jack fits 1/4" hole; panels to 3/8" thick	.19
185	R	Giant plug with deep solder well; 6-leaved phos. bronze spring	.90
186	S	Same, but screw fit instead of stud	.80
188	T	Same as No. 186 but slimmer base	.65
187	U	Giant banana jack fits 3/8" hole; panels to 1/2" thick	.60

Note: The following types are also available as specified. For silver-plated phosphor bronze spring: Add **3c** to price and *add **6** to number (431 becomes 437); †add **7** to number; ‡add **4** to number. For nickel-plated beryllium copper spring: Add **4c** to price and *add **12** to number; †add **13** to number; ‡add **3c** to price and add **8** to number. For silver-plated beryllium copper spring: Add **7c** to price and *add **18** to number; †add **19** to number; ‡add **6c** to price and add **12** to number.

NON-INSULATED TIP PLUGS AND JACKS

105	V	Solderless with knurled collar force fit; 1 29/64" h.	$0.21
106	W	Smaller version of above; 1 3/16" h.	.21
156	X	Heavy-duty force fit type; large soldering well; accepts standard banana plugs; 1 13/32" h.	.21
108	Y	Standard solder type; 1" long (Package of 100)	**
123	Y	Large I.D. solder type; 1" long (Package of 100)	††
158	Z	Drawn (all-hollow) solder type; 15/16" long (Package of 100)	‡‡
124	AA	Threaded solderless type; knurled collar; will fit plastic handle; 17/16" h.	.21
127	BB	Smaller version of above; 1 3/16" h.	.21
125	CC	Heavy duty threaded type; extra large solder well; 1 3/8" h.	.21
128	DD	Needle tip with removable chuck; 1 5/32" h.	.30
107	EE	Phone tip jack with hex nut; fits 1/4" hole; panels to 3/8" thick	.28
147	FF	Headless version of above used with plastic cases	.17

Net per package of 100: **$5.50; ††$6.50; ‡‡$2.00.

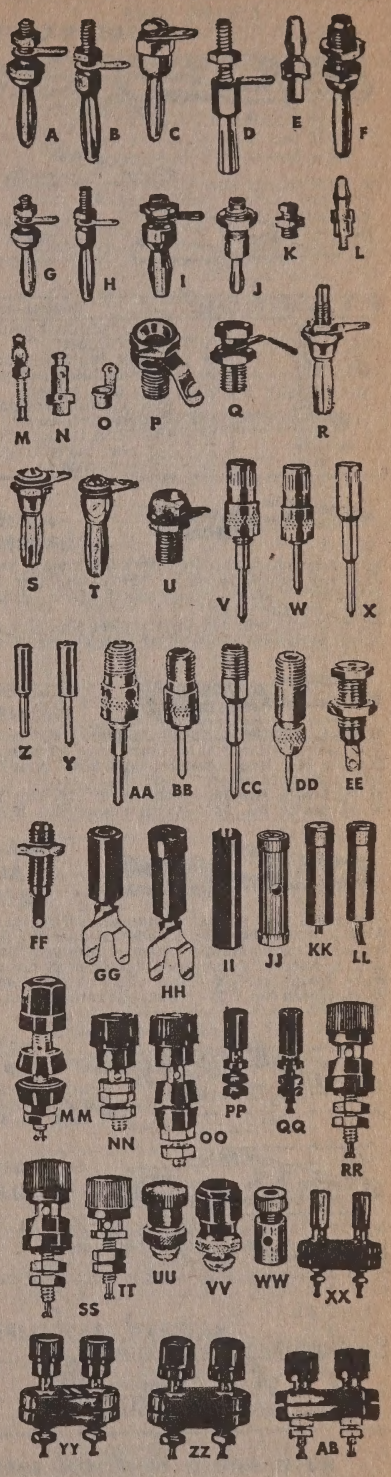
TEST LEAD ACCESSORIES

218	GG	Plastic handle spade lug; accepts banana plug; specify red or black	$0.10
249	HH	Phone tip to space lug adapter; plastic handle; specify red or black	.44
245	II	Banana plug splice of plastic; specify red, black, yellow or green	.28
246	JJ	Phone tip plug splice of plastic; specify red, black, yellow or green	.33
248	KK	Inline phone tip jack of plastic; specify red, black, yellow or green	.23
251	LL	Inline banana jack of plastic; specify red, black, yellow or green	.23

BINDING POSTS

257	MM	Multi-purpose with banana plug receptacle, wire hole, washer hole, production punch and non-removable nylon head. For 1/16"–1/4" panels. Rated 30 amps, 2000 VAC rms test. Specify red, black, yellow, blue, green, white	$0.65
220	NN	5-way grounding type, red or black plastic, captive head; 8-32 thd.	.34
230	NN	Same, but 6-32 threaded stud	.34
264	NN	Same as No. 230 with nickel-plated brass insert in head	.49
260	OO	All insulated version of No. 220; red or black plastic, captive head	.55
259	OO	Same, but 6-32 threaded stud	.55
290	OO	Same as No. 260 with nickel-plated brass insert in head	.75
231	OO	Same as No. 259 with nickel-plated brass insert in head	.75
137	PP	Metal 5-way post has captive hex nickel-plated brass head	.50
208	QQ	Same as No. 137 but with wrap-around terminal	.65
377	RR	Molded nylon grd. type with nickel-plated brass insert; red or black	.60
378	SS	Same, but with Bakelite washer to insulate from chassis; red or black	.60
379	TT	Molded nylon grounding type; nickel-plated brass insert; red or black	.55
265	UU	Molded plastic post; brass threaded insert; specify red or black	.30
266	VV	Molded plastic post; brass threaded insert; specify red or black	.30
136	WW	Nickel-plated brass post for phone tips or banana plugs	.35
110	UU	Nickel-plated brass post with screw and lockwasher	.35
209	XX	Dual assembly; metal heads; molded black styrene insul. cross-slotted for forward or sideways phone tip insertion	1.35
224BB	YY	Dual assembly; black plastic heads; styrene washer cross-slotted	.95
224RR	YY	Same, both heads red	.95
224RB	YY	Same, one red and one black head	.95
263BB	YY	Same as 224 but with nickel-plated brass insert in head; black	1.25
263RR	YY	Same, both heads red	1.25
263RB	YY	Same, one red and one black head	1.25
269BB	ZZ	Same as No. 263, but heads are molded nylon; both heads black	1.15
269RR	ZZ	Same, both heads red	1.15
269RB	ZZ	Same, one red and one black head	1.15
284BB	AB	Same as No. 263, but heads are molded nylon; both heads black	.95
284RR	AB	Same, both heads red	.95
284RB	AB	Same, one red and one black head	.95

*Lots of 1–499, Net; 500–999, −16⅔%.



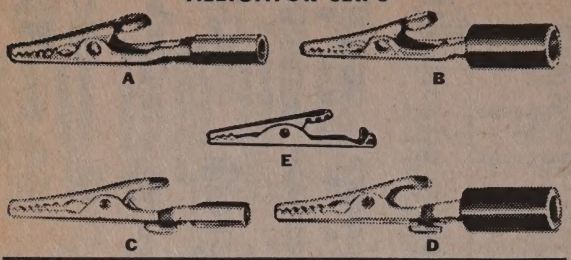
NEW, FREE CATALOG

FOR PURCHASING AGENTS AND ENGINEERS

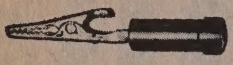
Gives full specifications, parts data and dimensional drawings on all H. H. Smith components. Send for your copy today.

H. H. Smith Components

ALLIGATOR CLIPS



H. H. Smith No.	Fig.	Description	Net
300	A	Steel, cadmium plated	$0.07
380	A	Solid Copper	.10
301	B	Red or Black Insulated, Steel	.10
381	B	Insulated Solid Copper	.12
350	C	Steel with screw	.08
351	D	Red or Black Insulated, Steel	.11
360	C	Copper with screw	.12
361	D	Insulated Copper, Red or Black	.16
338	E	3/16" jaw, cadmium-plated steel	.06
367	E	3/16" jaw, copper	.07



ALLIGATOR CLIP COMBINATION JACKS

Insulated alligator clip with combination jack in rear of handle. Jack will accommodate standard phone tip plugs or banana plugs. Handle 1 1/8" long, overall length 2 7/8". Available in black and red colors. Specify color.

H. H. Smith No. 305—With steel clip. Net Each..... $0.47
H. H. Smith No. 335—With copper clip. Net Each..... .51

ALLIGATOR CLIP PHONE TIP JACKS

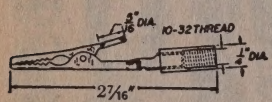
Insulated alligator clip with phone tip jack in rear of handle. The jack portion will accommodate all standard phone tip plugs. Handle 1 1/8" long, overall length 2 7/8". Available in black and red colors. Specify color.

H. H. Smith No. 304—With steel clip. Net Each..... $0.40
H. H. Smith No. 334—With copper clip. Net Each..... .44

ALL-INSULATED ALLIGATOR ADAPTER CLIPS

Phone tip jack in rear of handle. All metal parts fully insulated with molded butyrate; insures against shock, grounding. Adapts to standard phone tip plugs. Cadmium plated steel clip; brass body; phosphor bronze contact. Specify red or black color.

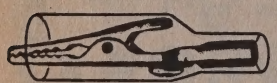
H. H. Smith No. 336—Rated 5 amps. Net Each..... $0.43
H. H. Smith No. 337—Same, but rated 10 amps; solder connection. Net Each..... $0.29



ALLIGATOR CLIP ADAPTER

Adapts standard solderless tips to alligator clips. Max. opening 1/2".

H. H. S. No. 310—Net.... $0.25



ALLIGATOR CLIP BOOTS

Molded vinyl plastic fully insulates clip while allowing maximum jaw opening. Specify red or black color.

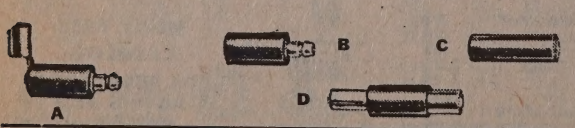
H. H. Smith No. 331—Net Each..... $0.04
H. H. Smith No. 389—Midget version for use on No. 338 or 367 clips. Net Each..... $0.03

BATTERY TEST CLIPS

Electroplated steel construction.

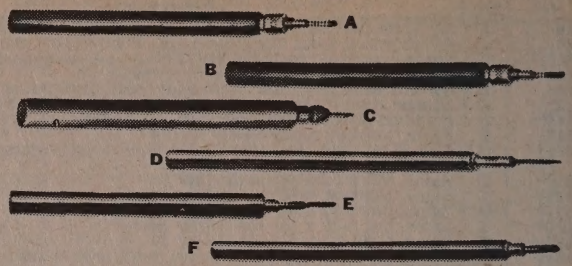
H.H.S. No.	Jaw Spread	Length	Cap., Amps	Spring, Lbs.	Net Each
365	3/8"	1 5/8"	5	7	$0.11
366	9/16"	2"	10	10	.11

AUTO RADIO IGNITION SUPPRESSORS



H. H. Smith No.	Fig.	Description	Net Each
805	A	Snap-on type	$0.55
806	B	Universal; double thread	.50
809	D	Distributor plug-in	.60
810	C	Double screw	.35

TEST PRODS



Specify red or black when ordering.

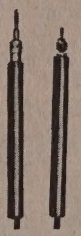
H.H.S. No.	Fig.	Description	Net Each
302	A	5 1/4" threaded solderless tip with chuck	$0.33
303	A	6 3/4" threaded solderless tip with chuck	.36
323	B	Fiber version of No. 302	.39
317	C	4 13/16" phono needle prod; thrd. chuck & collar	.36
318	C	6 5/16" version of No. 317	.42
313	D	Double Bakelite handles; phono needle tip; stud for solderless connection; 7 1/2"	.90
319	E	5 3/16" heavy duty phono tip prod; threaded	.33
329	E	6 1/16" version of No. 319	.36
322	F	For subminiature equipment; bone fiber handle; 1/4" O.D. x 4 3/4" long	.39

METER TIP TEST LEADS

Test Leads with 50" rubber covered kinkless test lead wire. Molded plastic finger-grip tips on one end and 4" plastic test prod handles on other end. Supplied in two types, solderless tip or needle tip prod handles.

H. H. Smith No.	Type	Net Price per Pair
625	Solderless prods	$1.80
626	Needle tip prods	1.80

SOLDERLESS TIP TEST LEADS



Plastic handles colored red and black, 4" long x 3/8" diameter. Flexible rubber covered wire leads 50" long also colored red and black.

H. H. Smith No.	Type	Net Price per Pair
600	Phone tips	$1.25
601	Spade lugs	1.25
602	Alligator clips	1.30

PHONO NEEDLE TEST LEADS

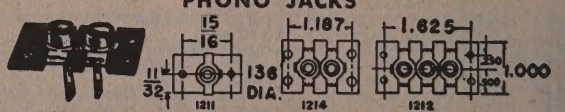
613	Phone tips	$1.25
614	Spade lugs	1.25
615	Alligator clips	1.30

PHONO PLUGS

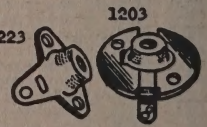
RCA Type phono plugs. For use with record players, recording and reproducing equipment, etc. Extra large hole in cap (.175") for coaxial cable.

H. H. S. No. 1201—Long Pin (1" overall). Net.. $0.08
H. H. S. No. 1202—Short Pin (1 3/16" overall). Net .08

PHONO JACKS

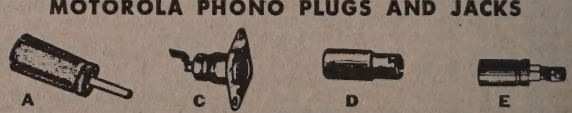


H. H. Smith No.	Description	Net Each
1203*	Single Jack	$0.09
1223	Single Jack	.09
1211	Single Jack	.12
1214	Double Jack	.15
1212	Triple Jack	.20



*On 1/16" Bakelite®, 1 1/16" centers.
®Registered Bakelite Corp. trademark.

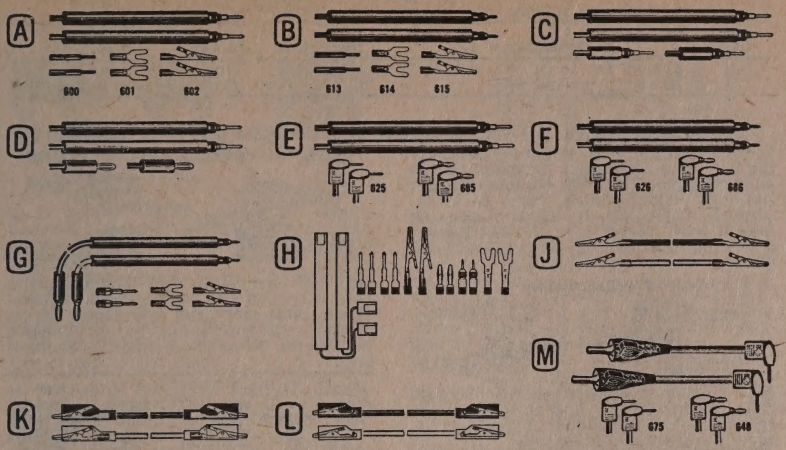
MOTOROLA PHONO PLUGS AND JACKS



H. H. Smith No.	Fig.	Description	Net Each
1200	A	Motorola type plug	$0.12
1207	C	Motorola jack	.20
1204	D	Lead-in adapter	.09
1235	E	Jack without flange	.10

H. H. Smith Test Leads & Prods

TEST LEADS



SOLDERLESS TIP TEST LEADS (FIG. A)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Solderless tip of nickel-plated brass. 4″ long x ⅜″ diameter. Flexible rubber covered wire leads 50″ long, also colored red and black.

H.H.S. No.	Meter End	Net Price per Pair
600	Phone tips	$1.25
601	Spade lugs	1.25
602	Alligator clips	1.30

PHONO NEEDLE TEST LEADS (FIG. B)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Nickel-plated brass body. Nickel-plated steel needle tips. Flexible rubber covered wire leads 50″ long, red and black.

H.H.S. No.	Meter End	Net Price per Pair
613	Phone tips	$1.25
614	Spade lugs	1.25
615	Alligator clips	1.30

ALL SOLDERLESS TEST LEADS (FIG. C)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Molded thermosetting plastic plug in red and black, per MIL-M-14 CFG. Solderless tip of nickel-plated brass.
H. H. Smith No. 603—Net/Pair...**$1.60**

BANANA PLUG TEST LEADS (FIG. D)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Plug is molded phenolic; red and black. Solderless tip plug of nickel-plated brass. Nickel-plated brass body. Nickel-plated, four-leaved phosphor bronze spring.
H. H. Smith No. 623—Net/Pair...**$1.80**

SOLDERLESS PROD METER TEST LEADS (FIG. E)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Solderless tip of nickel-plated brass. Elbow of molded thermosetting plastic, per MIL-M-14 CFG; red and black. Nickel-plated brass body. Nickel-plated, four-leaved phosphor bronze spring. 50″ rubber covered kinkless test lead wire.

H.H.S. No.	Meter End	Net Price per Pair
625	Phone tips	$1.80
685	Banana plugs	2.05

NEEDLE PROD METER TEST LEADS (FIG. F)

Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS; red and black. Nickel-plated steel needle prod. Elbow of molded phenolic plastic, in red and black. Nickel-plated brass body. Nickel-plated, four-leaved phosphor bronze spring. Rubber covered 50″ kinkless test lead wire.

H.H.S. No.	Meter End	Net Price per Pair
626	Phone tips	$1.80
686	Banana plugs	2.05

TEST LEAD KIT (FIG. G)

Includes one pair of test leads in red and black, with test prods on one end and banana plugs on the other; plus two phone tips, two alligator clips and two spade lugs.

H.H.S. No.	Prod Type	Net Each
610	Solderless	$2.50
611	Needle tip	2.50

UNIVERSAL TEST LEADS (FIG. H)

Fifty leads in one—completely interchangeable. One lead can make any required test lead combination. All parts adapt into prod handle or tip handle. Includes 5 kV rubber covered wire, 26 strands #34 copper, #20 AWG, insulated to .125″ O.D. With plastic kit.
H. H. Smith No. 699—Net Each..**$5.00**

MINIATURE UNIVERSAL TEST LEADS (FIG. H)

With miniature tips, clips, banana plugs and spade tips. One lead set makes any required test lead combination. All parts adapt into prod handle or meter tip. Includes 5 kV rubber covered wire, 26 strands #34 copper, #20 AWG, insulated to .125″ O.D. With plastic kit.
H. H. Smith No. 679—Net Each..**$5.00**

ALLIGATOR CLIP TEST LEADS (FIG. J)

Cadmium-plated steel clips.

H.H.S. No.	Wire Length	Net Price per Pair
604	12 inches	$1.00
605	24 inches	1.05
606	36 inches	1.10
607	48 inches	1.15

ALLIGATOR CLIP TEST LEADS WITH BOOTS (FIG. K)

Cadmium-plated steel clips. Vinyl plastic boots in red and black.

H.H.S. No.	Wire Length	Net Price per Pair
629	12 inches	$1.10
657	24 inches	1.15
658	36 inches	1.20
659	48 inches	1.25

MIDGET ALLIGATOR CLIP TEST LEADS (FIG. L)

Cadmium-plated steel clips. Vinyl plastic boots in red and black.

716	12 inches	$1.10
717	24 inches	1.15
718	36 inches	1.20
719	48 inches	1.25

CROCODILE CLIP TEST LEADS (FIG. M)

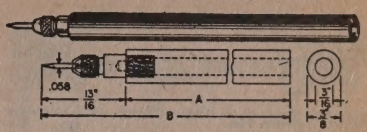
Cadmium-plated steel clips. Vinyl plastic boots in red and black. Molded phenolic plastic elbows in red and black. Nickel-plated brass tips. Nickel-plated, four-leaved phosphor bronze spring.
H. H. Smith No. 648—Net/Pair...**$1.60**

CROCODILE CLIP TEST LEADS (FIG. M)

Cadmium-plated steel clips. Vinyl plastic boots in red and black. Molded phenolic plastic elbows in red and black. Nickel-plated brass tips. Nickel-plated, four-leaved phosphor bronze spring.
H. H. Smith No. 675—Net/Pair...**$1.50**

TEST PRODS

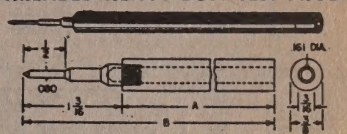
PHONO NEEDLE TEST PROD



Removable chuck for easy replacement of broken needles. Needle pierces corrosion or plating for positive meter readings. Rated 12 amps AC for 10° C temperature rise, continuous duty. Handle is molded butyrate per Fed. Spec. L-P349A, Type 3, Class MS; specify color, red or black. Plug is nickel-plated brass.

H.H.S. No.	Handle (A)	Overall (B)	Net per C
317	4″	4 13/16″	$36.00
318	5½″	6 5/16″	42.00

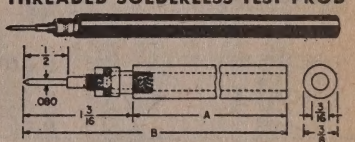
THREADED HEAVY DUTY TEST PROD



Large diameter well permits soldering of heavy duty wire directly into plug. Fits standard phone tip jacks. Rated 12 amps AC for 10° C temperature rise, continuous duty. Molded butyrate handle per Fed. Spec. L-P349A, Type 3, Class MS. Specify color, red, black. Nickel-plated brass plug.

319	4″	5 3/16″	$33.00
329	5½″	6 11/16″	36.00

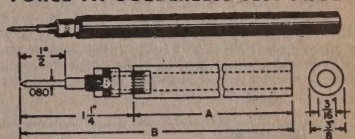
THREADED SOLDERLESS TEST PROD



Solderless type; wire fits through handle and body of plug, then is wrapped around screw portion and tightened with knurled collar. Rated 12 amps AC for 10° C temperature rise, continuous duty. Molded butyrate handle per Fed. Spec. L-P349A, Type 3, Class MS. Specify handle color: red or black. Nickel-plated brass plug.

302	4″	5¼″	$33.00
303	5½″	6¼″	36.00

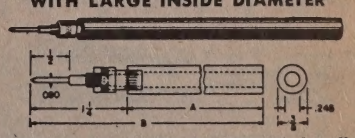
FORCE FIT SOLDERLESS TEST PROD



Solderless type; wire fits through handle and body of plug, then is wrapped around screw portion and tightened with knurled collar. Rated 12 amps AC for 10° C temp. rise, continuous duty. Molded butyrate handle per Fed. Spec. L-P349A, Type 3, Class MS. Specify handle color: red or black. Nickel-plated brass plug.

382	4″	5¼″	$33.00
383	5½″	6¼″	36.00

FORCE FIT SOLDERLESS TEST PROD WITH LARGE INSIDE DIAMETER



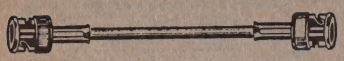
Solderless type; wire fits through handle and body of plug, then is wrapped around screw portion and tightened with knurled collar. Extra large inside diameter for heavy duty wire. Rated 12 amps AC for 10° C temp. rise, continuous duty. Handle is molded butyrate per Fed. Spec. L-P349A, Type 3, Class MS. Specify handle color: red or black. Nickel-plated brass plug.

352	4″	5¼″	$33.00
353	5½″	6¼″	36.00

H. H. Smith Patch Cords

RF PATCH CORDS

BNC MALE BOTH ENDS

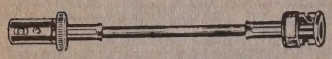


H. H. Smith No. Wire "C"	Lgth.	Net Each
1589-12	12″	$5.35
1589-24	24″	5.45
1589-36	36″	5.55
1589-48	48″	5.65
1589-60	60″	5.75

BNC FEMALE BOTH ENDS

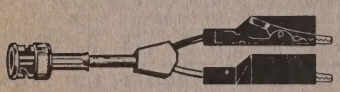
H.H.S. No.	Lgth.	Wire	Net Ea.
1869-12	12″	Type "C"	$6.10
1869-24	24″	(RG-58/U	6.20
1869-36	36″	coaxial	6.30
1869-48	48″	cable)	6.40
1869-60	60″		6.50

BNC FEMALE TO BNC MALE



1878-12	12″	Type "C"	$5.60
1878-24	24″	(RG-58/U	5.70
1878-36	36″	coaxial	5.80
1878-48	48″	cable)	5.90
1878-60	60″		6.00

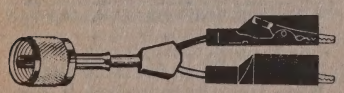
BNC MALE TO ALLIGATOR CLIPS



For testing wave patterns, etc. One end terminates with BNC male plug, other end with insulated alligator clips (one red, one black). Cadmium-plated steel clips; molded vinyl insulation.

H. H. Smith No. Wire "C"	Lgth.	Net Each
1587-12	12″	$5.35
1587-24	24″	5.45
1587-36	36″	5.55
1587-48	48″	5.65
1587-60	60″	5.75

UHF MALE TO ALLIGATOR CLIPS



Same construction as above, but with UHF male connector at one end.

H. H. Smith No. Wire "C"	Lgth.	Net Each
1586-12	12″	$5.35
1586-24	24″	5.45
1586-36	36″	5.55
1586-48	48″	5.65
1586-60	60″	5.75

PATCH CORD WIRE

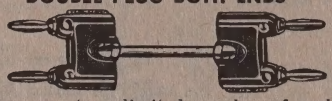
RF and standard banana plug cords are supplied with wire indicated below.

Wire Type	Description	Insulation	Jacket	Nominal Capacitance
"A"	2-cond. tw. 18 ga. (65/36 strand)	Vinyl	Vinyl	30 pF/foot
"C"	RG-58/U coaxial cable	Polyethylene	Vinyl	50-ohm impedance

STANDARD DUAL BANANA PLUG PATCH CORDS (¾″ CENTERS)

Mate with standard dual binding post having ¾″ centers. Polarity indicated by the word "Ground" molded on side. Molded butyrate body per Fed. Spec. L-P349A, Type 3, Class MS, in black or gray to match wire. Nickel-plated, four-leaved beryllium copper spring. Wire as indicated above.

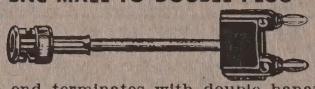
DOUBLE PLUG BOTH ENDS



Interconnects unlimited number of multiple circuits on top and side. Each end terminates with molded double banana plug. Nickel-plated brass plug.

H. H. Smith Number Wire "A"	Wire "C"	Lgth.	Net Each
1530-12	1580-12	12″	$4.35
1530-24	1580-24	24″	4.45
1530-36	1580-36	36″	4.55
1530-48	1580-48	48″	4.65
1530-60	1580-60	60″	4.75

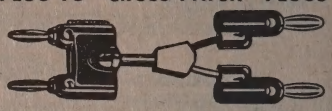
BNC MALE TO DOUBLE PLUG



One end terminates with double banana plug; other end with BNC male plug. Nickel-plated brass plug.

H. H. Smith No. Wire "C"	Lgth.	Net Each
1584-12	12″	$5.35
1584-24	24″	5.45
1584-36	36″	5.55
1584-48	48″	5.65
1584-60	60″	5.75

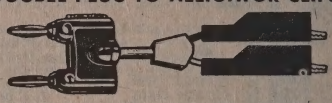
PLUG TO "CROSS-PATCH" PLUGS



One end terminates with double banana plug; other end with "Cross-Patch" banana plugs, color-coded red and black. Interconnects unlimited number of multiple circuits on top, side. Nickel-plated brass body.

H. H. Smith Number Wire "A"	Wire "C"	Lgth.	Net Each
1523-12	1525-12	12″	$5.35
1523-24	1525-24	24″	5.45
1523-36	1525-36	36″	5.55
1523-48	1525-48	48″	5.65
1523-60	1525-60	60″	5.75

DOUBLE PLUG TO ALLIGATOR CLIPS



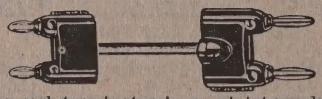
One end terminates with double banana plug; other end with insulated alligator clips (one red, one black). Nickel-plated brass plug. Cadmium-plated steel clip. Molded vinyl plastic insulation.

H. H. Smith Number Wire "A"	Wire "C"	Lgth.	Net Each
1531-12	1581-12	12″	$5.35
1531-24	1581-24	24″	5.45
1531-36	1581-36	36″	5.55
1531-48	1581-48	48″	5.65
1531-60	1581-60	60″	5.75

MINIATURE DUAL BANANA PLUG PATCH CORDS (½″ CENTERS)

Mate with miniature dual binding posts or banana jacks having ½″ centers. Polarity indicated by word "Ground" molded on side. Molded butyrate handles per Fed. Spec. L-P349A, Type 3, Class MS. Nickel-plated brass plug or body. Nickel-plated, four-leaved beryllium copper spring. Wire is RG-174/U coaxial cable.

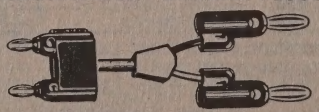
MINIATURE DUAL BANANA PLUG TO STANDARD DUAL BANANA PLUG



One end terminates in a miniature dual banana plug (½″ centers); other end in standard dual banana plug (¾″ centers). Interconnects unlimited number of multiple circuits, top and side.

H.H.S. No.	Lgth.	Wire	Net Ea.
1729-12	12″		$4.35
1729-24	24″	RG-174/U	4.45
1729-36	36″	coaxial	4.55
1729-48	48″	cable	4.65
1729-60	60″		4.75

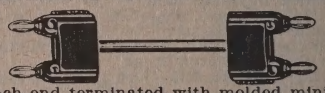
MINIATURE DUAL BANANA PLUG TO "CROSS-PATCH" BANANA PLUGS



One end terminates with double banana plug (½″ centers); other end with "Cross-Patch" miniature banana plugs, color-coded red and black.

1738-12	12″		$5.35
1738-24	24″	RG-174/U	5.45
1738-36	36″	coaxial	5.55
1738-48	48″	cable	5.65
1738-60	60″		5.75

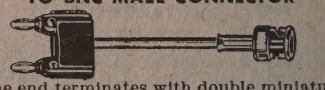
MINIATURE DUAL BANANA PLUGS



Each end terminated with molded miniature double banana plug (½″ centers).

H.H.S. No.	Lgth.	Wire	Net Ea.
1599-12	12″		$4.35
1599-24	24″	RG-174/U	4.45
1599-36	36″	coaxial	4.55
1599-48	48″	cable	4.65
1599-60	60″		4.75

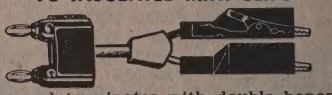
MINIATURE DUAL BANANA PLUG TO BNC MALE CONNECTOR



One end terminates with double miniature banana plug; other end with BNC male.

1748-12	12″		$5.35
1748-24	24″	RG-174/U	5.45
1748-36	36″	coaxial	5.55
1748-48	48″	cable	5.65
1748-60	60″		5.75

MINIATURE DUAL BANANA PLUG TO INSULATED MINI-CLIPS



One end terminates with double banana plug; other end with insulated miniature clips. Cadmium-plated steel clip; vinyl insulation.

1739-12	12″		$5.35
1739-24	24″	RG-174/U	5.45
1739-36	36″	coaxial	5.55
1739-48	48″	cable	5.65
1739-60	60″		5.75

CABLE MOUNT DUAL BANANA PLUGS

1675 1676 1787

H. H. Smith No. 1675 Set-Screw Plug—Rear has 7/32" dia. cable guide, dual banana jacks on 3/4" centers. Front has dual banana plugs on 3/4" centers. Set-screws secure leads to conductors. Specify red or black. Net Each.....**75c**

H. H. Smith No. 1676 Turret-Terminal Plug—Same as above, but with turret terminals for permanent solder connection. Red or black. Net Each.....**85c**

H. H. Smith No. 1787 Shielded Plug—Rear has mounting screw and locating boss, inline cable entry with flush cable guide. Front has dual banana plugs on 3/4" centers. Turret terminals for permanent solder connection. Aluminum shield electrically connected to ground conductor; fully enclosed plug and mating binding posts to reduce noise pickup. Net..**$2.25**

COMPONENT MOUNT DUAL PLUGS

1677 1694 1696

1678 1693 1770

H. H. Smith No. 1677 Set-Screw Plug—Rear has dual banana jacks on 3/4" centers for stacking. Front has dual banana jacks on 3/4" centers. Set-screws secure component leads to conductors. Specify red or black. Net Each.....**75c**

H. H. Smith No. 1694 Set-Screw Phone Tip Plug—Rear has dual banana jacks on 3/4" centers for stacking. Front has dual .080" phone tips on 3/4" centers. Set-screws secure component leads to conductors. Specify red or black. Net Each.....**75c**

H. H. Smith No. 1696 Four-Terminal Isolation Type Plug—Rear has dual banana jacks on 3/4" centers for stacking. Center has turret-terminal connections to isolated front and rear conductors in both Ground and Hot circuits for insertion of matching pad or other 4-terminal networks in input circuits of instruments. Front has dual banana plugs on 3/4" centers. Specify red or black. Net Each.....**$3.25**

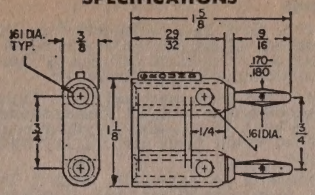
H. H. Smith No. 1678 Turret-Terminal Plug—Rear has dual banana jacks on 3/4" centers for stacking. Front has dual banana jacks on 3/4" centers. Turret terminals. Specify red or black. Net Each.....**85c**

H. H. Smith No. 1693 Phone Tip Plug—Rear has dual phone tip jacks on 3/4" centers for stacking. Front has dual .080" phone tips on 3/4" centers. Turret terminal. Specify red or black. Net Each.....**85c**

H. H. Smith No. 1770 Three-Terminal Isolation Plug—Rear has dual banana jacks on 3/4" centers for stacking. Center has turret-terminal connections to isolated front and rear conductors in Hot circuit, straight-thru connection of Ground circuit, with terminal, for insertion of "T" and "P" networks in input-output circuits in instruments. Front has dual banana plugs on 3/4" centers. Specify red or black. Net Each.....**$2.50**

SHORTING TYPE PLUGS

SPECIFICATIONS



Materials: Body is molded butyrate per Fed. Spec. L-P349A, Type 3, Class MS; black color unless otherwise specified. Brass conductor per QQ-B-626 Comp. 22, 1/2 hard. Four-leaved beryllium copper spring, heat treated. Molded nylon head per MIL-P-20693A. Drawn aluminum shield. Cadmium-plated steel screws. **Finishes:** Conductor and spring, nickel-plate per QQ-N-290, Class I, Type VII. Gold-washed terminal. Non-tarnish connector. Black anodized shield. **Ratings:** 15 amps AC for 10° C temp. rise, continuous duty; 5000 VAC, 60 Hz continuous working voltage; except where limited by coaxial connectors. Capacity, 1.0 pF nominal between 3/4" spaced connectors. Resistance, 1 milliohm or less per conductor.

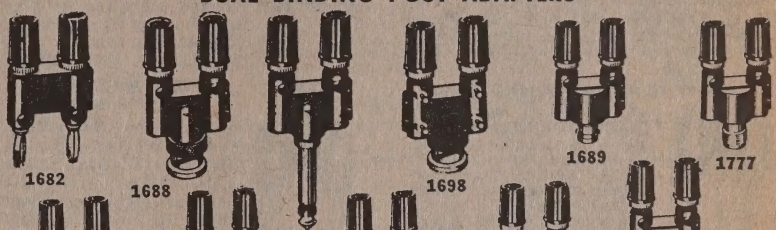
1516 1683 1692

H. H. Smith No. 1516 Dual Banana Plug—Rear has dual banana jacks on 3/4" centers for stacking. Front has dual banana plugs on 3/4" centers; banana jack holes for side stacking. Busbar shorted across line. Specify red or black. Net Each...**$1.20**

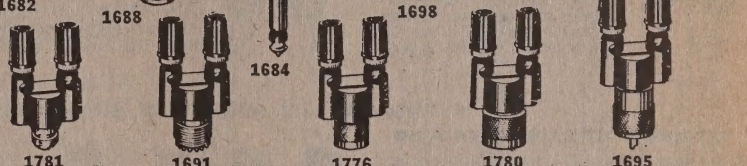
H. H. Smith No. 1683 Metal Shorting Bar Plug—Rear has 3/32" thick brass busbar; 15 amps continuous duty. Front has dual banana plugs on 3/4" centers. Unit sits flush to panel. Net Each.....**75c**

H. H. Smith No. 1692 Phone Tip Plug—Rear has dual banana jacks on 3/4" centers for stacking. Front has dual .080" phone tips on 3/4" centers; banana jack holes for side stacking. Busbar shorted across line. Specify red or black. Net Each...**$1.00**

DUAL BINDING POST ADAPTERS



1682 1688 1684 1698 1689 1777



1781 1691 1776 1780 1695

Reoar f each adapter has insulated, dual 5-way binding posts, with red and black heads on 3/4" centers. Banana jack holes for side stacking (except No. 1698). Front has plug or jack as indicated.

H. H. Smith No. 1682 Binding Posts to Dual Banana Plugs—Front has dual banana plugs on 3/4" centers. Net..**$2.25**

H. H. Smith No. 1684 Binding Posts to 2-Circuit Phone Plug—Front has standard 1/4" two-circuit phone plug. Net..**$4.60**

H. H. Smith No. 1688 Binding Posts to BNC Male—Front has BNC series coaxial plug. Net Each.....**$4.60**

H. H. Smith No. 1698 Binding Posts to Isolated BNC Male—Front has BNC coaxial plug. Center has turret-terminal connections to isolated front and rear conductors in both Ground and Hot circuits for insertion of matching pad or other 4-term. networks in input. Net..**$10.00**

H. H. Smith No. 1689 Binding Posts to BNC Female—Front has BNC series female coaxial jack. Net Each.....**$4.60**

H. H. Smith No. 1776 Binding Posts to TNC Male—Front has TNC series coaxial plug. Net Each.....**$7.00**

H. H. Smith No. 1777 Binding Posts to TNC Female—Front has TNC series coaxial jack. Net Each.....**$6.00**

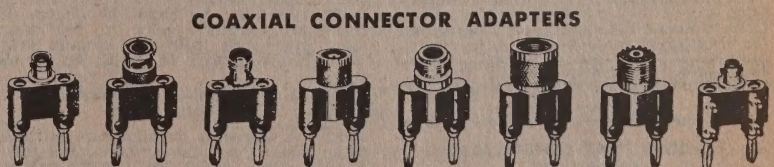
H. H. Smith No. 1780 Binding Posts to Type N Male—Front has Type N coaxial plug. Net Each.....**$7.00**

H. H. Smith No. 1781 Binding Posts to Type N Female—Front has Type N coaxial jack. Net Each.....**$6.00**

H. H. Smith No. 1695 Binding Posts to UHF Male—Front has UHF series coaxial jack. Net Each.....**$5.00**

H. H. Smith No. 1691 Binding Posts to UHF Female—Front has UHF series coaxial jack. Net Each.....**$5.25**

COAXIAL CONNECTOR ADAPTERS



1686 1687 1774 1775 1778 1779 1790 1697

Front of each adapter has dual banana plugs on 3/4" centers. Banana jack holes for side stacking (except No. 1697). Rear has coaxial connector as indicated.

H. H. Smith No. 1686 BNC Female to Banana Plugs—Rear has BNC series coaxial jack. Net Each.....**$2.60**

H. H. Smith No. 1687 BNC Male to Banana Plugs—Rear has BNC series coaxial plug. Net Each.....**$3.60**

H. H. Smith No. 1774 TNC Female to Banana Plugs—Rear has TNC series coaxial jack. Net Each.....**$5.25**

H. H. Smith No. 1775 TNC Male to Banana Plugs—Rear has TNC series coaxial plug. Net Each.....**$6.00**

H. H. Smith No. 1778 Type N Female to Banana Plugs—Rear has Type N coaxial jack. Net Each.....**$5.25**

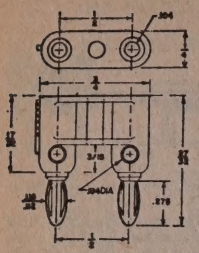
H. H. Smith No. 1779 Type N Male to Banana Plugs—Rear has Type N coaxial plug. Net Each.....**$6.00**

H. H. Smith No. 1690 UHF Female to Banana Plugs—Rear has UHF series coaxial jack. Net Each.....**$4.60**

H. H. Smith No. 1697 BNC Female to Isolated Dual Banana Plugs—Rear has BNC series coaxial jack. Center has turret-terminal connections to isolated front and rear conductors in both Ground and Hot circuits for insertion of matching pad or other 4-terminal networks in input circuits. Net Each.....**$9.00**

H. H. Smith Test Adapters

MINIATURE DUAL TEST ADAPTERS



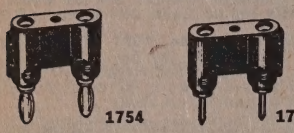
SPECIFICATIONS

Ratings: 5 amps AC for 10° C temp. rise, continuous duty; 2000 VAC, 60 Hz continuous working voltage; except where limited by coaxial connectors. Capacity, 3.0 pF nominal between ½" spaced conductors. Resistance, 1 milliohm or less per conductor.

Materials: Molded butyrate body, Fed. Spec. L-P349A, Type 3, Class MS; black color unless otherwise specified. Brass conductor per QQ-B-626, Comp. 22, ½ hard. Four-leaded beryllium copper spring, heat treated. Molded nylon head per MIL-P-20693A. Cadmium-plated steel screws.

Finishes: Nickel-plated conductor per QQ-N-290, Class I, Type VII. Nickel-plated spring. Gold washed terminal. Non-tarnish plate connector.

SET SCREW CONNECTION



Rear has dual banana jacks on ½" centers for stacking. Front has set-screws that secure component leads to conductors.

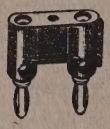
H. H. Smith No. 1749 Banana Plugs—Front has dual banana plugs on ½" centers. Specify red or black. Net Each..**75c**

H. H. Smith No. 1754 with .080" Phone Tips—Front has dual .080" phone tips on ½" centers. Specify red, black. Net...**75c**

TURRET TERMINAL CONNECTION

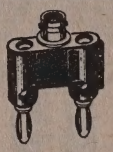
H. H. Smith No. 1750—Rear has dual banana jacks on ½" centers for stacking. Front has dual banana plugs on ½" centers. Turret terminals for permanent solder connection of leads. Specify red or black. Net Ea...**85c**

PHONE TIP ADAPTER



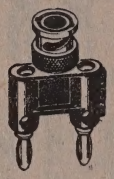
H. H. Smith No. 1751—Rear has dual .080" phone tip jacks on ½" centers for stacking. Front has dual banana plugs on ½" centers. Specify red or black. Net Each.....**85c**

BNC FEMALE TO BANANA PLUGS



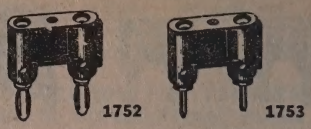
H. H. Smith No. 1758—Rear has BNC series coaxial jack; banana jack holes for stacking. Front has dual banana plugs on ½" centers; banana jack holes for side stacking. Black. Net Each.....**$3.00**

BNC MALE TO BANANA PLUGS



H. H. Smith No. 1759—Rear has BNC series coaxial plug. Front has dual banana plugs on ½" centers; banana jack holes for side stacking. Black. Net Each...**$3.95**

MOLDED-IN SHORTING ADAPTERS



Rear has dual banana jacks on ½" centers for stacking. Busbar shorted across line.

H. H. Smith No. 1752 with Banana Plugs—Front has dual banana plugs on ½" centers; banana jack holes for side stacking. Specify red or black. Net Each.....**75c**

H. H. Smith No. 1753 with Phone Tips—Front has dual .080" phone tips on ½" centers. Banana jack holes for side stacking. Specify red or black. Net Each..**75c**

BINDING POST ADAPTERS

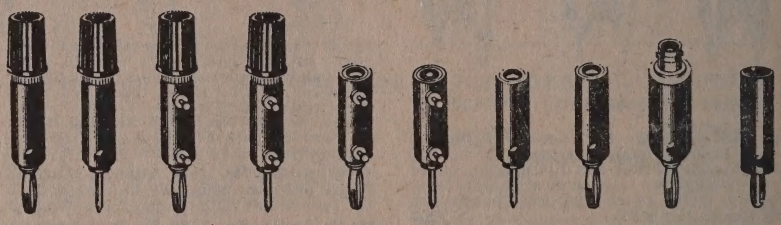
Rear has insulated, dual 5-way binding posts, with red and black heads on ½" centers. Banana jack holes for side stacking.

H. H. Smith No. 1755 Binding Posts to Dual Banana Plugs—Front has dual banana plugs on ½" centers. Black color. Net Each.....**$2.25**

H. H. Smith No. 1756 Binding Posts to BNC Male—Front has BNC coaxial plug. Black. Net Each.....**$4.60**

H. H. Smith No. 1757 Binding Posts to BNC Female—Front has BNC coaxial jack. Black. Net Each.....**$4.60**

STANDARD AND MINIATURE SINGLE TEST ADAPTERS



Ratings: Standard types rated 15 amps continuous duty, 5000 VAC continuous working, except where limited by coaxial connector; miniature types rated 5 amps and 2000 VAC. Resistance, 1 milliohm or less when seated in proper mating connectors. **Materials:** Butyrate body per MIL-P-10408A, Type 1, Class 2; black or red color. Brass conductors per QQ-B-626, Comp. 22, half hard. Four-leaved beryllium copper springs (heat treated). Molded nylon heads per MIL-P-20693A. Cadmium-plated steel screws. **Finishes:** Conductors and springs are nickel plated per QQ-N-296, Class I, Type VII. Terminals are gold washed. **Size:** Standard Adapters: phone tip, .080" dia. x ½" long; banana plug, .180"/.170" dia. x 9/16" long; phone jack, .080" dia.; banana jack, .161" dia., body, ⅜" dia. Miniature Adapters: phone tip, .080" dia. x ⅜" long; banana plug, .118"/.112" dia. x 9/32" long; phone jack, .080" dia.; banana jack, .104" dia.; body, ¼" dia. **Color Code Suffix:** Add suffix **-103** to H. H. Smith No. for black body; suffix **-102** for red body.

BINDING POST TO BANANA PLUG

Rear has insulated 5-way binding post. Front has standard or miniature banana plug. Banana jack hole for side stacking.

H.H.S. No.	Description	Net Ea.
5025	Standard Adapter	$1.10
5035	Miniature Adapter	1.10

BINDING POST TO PHONE TIP

Rear has insulated 5-way binding post. Front has standard .080" phone tip. Banana jack hole for side stacking.

H.H.S. No.	Description	Net Ea.
5026	Standard Adapter	$1.00
5036	Miniature Adapter	1.00

BINDING POST TO ISOLATED BANANA PLUG

Rear has insulated 5-way binding post. Front has standard or miniature banana plug. Center has turret-terminal connections to isolated front and rear conductors for insertion of component in series input.

H.H.S. No.	Description	Net Ea.
5027	Standard Adapter	$1.10
5037	Miniature Adapter	1.10

BINDING POST TO ISOLATED PHONE TIP

Same as above, but with standard .080" phone tip at front.

H.H.S. No.	Description	Net Ea.
5028	Standard Adapter	$1.00
5038	Miniature Adapter	1.00

TIP JACK TO ISOLATED PHONE TIP

Rear has standard .080" tip jack. Front has .080" phone tip. Center has turret-terminal connections to isolated front and rear conductors for insertion of component in series input circuit.

H.H.S. No.	Description	Net Ea.
5030	Standard Adapter	$0.95
5040	Miniature Adapter	.95

BANANA JACK TO ISOLATED BANANA PLUG

Rear has standard or miniature banana jack. Front has standard or miniature banana plug. Center has turret-terminal connection to isolated front and rear conductors for insertion of component in series input.

H.H.S. No.	Description	Net Ea.
5029	Standard Adapter	$1.00
5039	Miniature Adapter	1.00

STACKING SOLDERLESS PHONE TIP

Rear has standard or miniature banana jack for stacking. Front has .080" phone tip. Side has wire lead hole that secures test lead with internal set-screw.

H.H.S. No.	Description	Net Ea.
5031	Standard Adapter	$0.70
5041	Miniature Adapter	.70

STACKING SOLDERLESS MINIATURE BANANA PLUG

Rear has miniature banana jack for stacking. Front has miniature banana plug. Side has wire lead hole that secures test lead with internal set-screw.

H. H. Smith No. 5042—Net Each...**65c**

BNC JACK TO BANANA PLUG

Rear has BNC series coaxial jack. Front has standard banana plug. Side banana jack hole for side stacking. Std. adapter.

H. H. Smith No. 5032—Net Each.**$2.00**

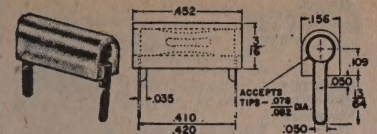
TIP JACK TO BANANA PLUG

Rear has standard .080" phone tip jack. Front has standard or miniature banana plug. Banana jack hole for side stacking.

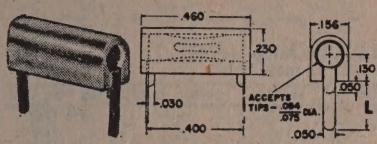
H.H.S. No.	Description	Net/100.
214	Standard Adapter	$55.00
5033	Miniature Adapter	50.00

H. H. Smith

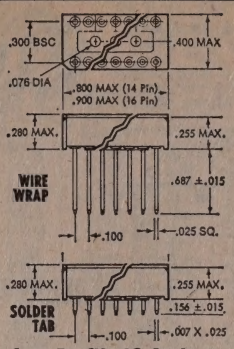
TEST JACKS, SOCKETS AND CHASSIS PUNCHES



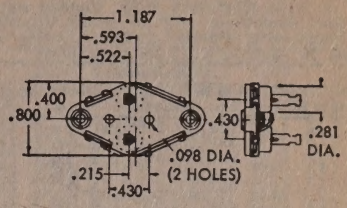
Commercial PC Test Jack



Military PC Test Jack



Low Profile IC Sockets



Power Transistor Socket

PRINTED CIRCUIT TEST JACKS

MILITARY TYPE (MEETS MIL-C-39024/11)

Double entry design; probes inserts from either end of jack. Closed entry construction will not accept probes larger than .084", will contact probes down to .074". Closed bottom design keeps jack from fouling with solder or flux. Locking ears keep jack firmly in board until soldered. Precise dimensions allow for automated assembly on boards. **Ratings:** Operating voltage, 1500 V at 60 Hz rms, sea level; 350 V, 60 Hz rms at 50,000 feet. Maximum current rating, 5 amps AC. Contact resistance, 20 mV drop max. at specified current, at 25° C. **Mechanical Data:** Thermal shock, vibration, humidity, insulation resistance, salt spray per MIL-STD-202B. All mechanical tests per applicable section of MIL-C-39024. Insertion force, 30 oz. maximum; withdrawal force, 3 oz. minimum with .080" probe. **Body:** Molded nylon per MIL-P-17091. Available in 10 colors, as indicated below. **Spring:** Beryllium copper per QQ-C-533. **Finish:** Gold plate per MIL-G-45204, Class I, Type 2. Nickel underplate per QQ-N-290, Class I, Type 7, .0002" thick. **Mounting:** Mounts in .052" dia. holes on .400" centers; board thickness as specified below. Can be spaced side-by-side .160" on centers minimum.

H. H. Smith No. 325—"L" dimension, 0.156"; for boards up to 1/16" thick. Meets MIL-C-39024/11-01 through -10. Net per 100 ..... **$15.00**

H. H. Smith No. 321—"L" dimension, 0.219" for boards up to 1/8" thick. MIL-C-39024/11-21 through -30. Net per 100 ... **$15.00**

ECONOMY MILITARY TYPE

H. H. Smith No.	"L" Dim.	Spring Plating	Net per C
306	0.156"	Gold flash over .0002" silver	$13.00
359	0.156"	.0002" silver	12.00
328	0.219"	Gold flash over .0002" silver	13.00
402	0.219"	.0002" silver	12.00

COMMERCIAL TYPE

Mechanical Data: Thermal shock, vibration, humidtiy, insulation resistance and salt spray tests per MIL-STD-202B. Solderability per MIL-S-6872. Insertion and withdrawal force, 8 oz. min., 5 lbs. max. with .080" (±.001") dia. probe. **Ratings:** 5 amps AC for 10° C temp. rise, continuous duty. 1.5 kV, 60 Hz AC continuous working voltage. Contact resistance, 5 milliohms max. at rated current. Capacitance, less than 5 MHz at 1 pF. **Finish:** Silver underplate, .0002" minimum per QQ-S-365, Type I, with .00003" gold overplate per MIL-F-14072, M-310. **Mounting:** Mounts in .052" dia. holes, on .400" centers, in boards up to 3/16" thick. Can be spaced side-by-side .160" on centers min.

H. H. Smith No. 430—Net per 100 ..... **$15.00**

ECONOMY COMMERCIAL TYPE

H. H. Smith No. 499—Spring is gold flash over .0002" silver. Net per 100 ..... **$13.00**

H. H. Smith No. 498—.0002" silver. Net per 100 ..... **12.00**

LOW PROFILE IC SOCKETS

Provided with removable cover for closed entry and contact replacement, polarity guide for assembly alignment. Made of glass filled black nylon, phosphor bronze (QQ 13-750 Comp. A) contacts, 10–20 microinches gold over 30–100 microinches silver. Available in 14 and 16 pin, wire wrap and solder tab terminals. Standard package of 50.

H.H.S. No.	Pins	Contacts, In. Lgth.	Contacts, In. Thickness	Body	Net per C
6245	14	.687	.025 Sq.	Wire Wrap	$80.00
6246	16	.687	.025 Sq.	Wire Wrap	85.00
6247	14	.156	.025 x .007	Solder Tab	70.00
6248	16	.156	.025 x .007	Solder Tab	75.00

POWER TRANSISTOR SOCKET

For use with transistors having a TO-3 case. Body of general purpose phenolic with contacts of phosphor bronze, gold over silver plated. Mounting plate with 6-32 tapped holes. Standard package of 100.

H.H.S. No. 6266 Power Transistor Socket—Net per C ... **$30.00**

H. H. SMITH (GREENLEE) CHASSIS PUNCHES FOR RADIO, TV AND ELECTRONICS

Complete line of chassis hole punches for swiftly cutting clean, accurately located holes in chassis and panels. An assortment of round, square, "D", and keyed holes can be punched by inserting in drilled pilot hole, and turning with wrench. Finished hole is smooth, accurately sized with burrs. Round punches are provided with center-line markings for enlarging holes larger than pilot hole. Individually packed.

ROUND HOLE PUNCHES

H.H.S. No.	Hole Size	Net Each	H.H.S. No.	Hole Size	Net Each
3801	1/2"	$3.85	3814	1 1/4"	$4.60
3802	9/16"	3.85	3815	1 5/16"	5.70
3803	5/8"	3.85	3816	1 3/8"	5.70
3804	11/16"	3.90	3817	1 1/2"	6.25
3805	3/4"	3.90	3818	1 5/8"	7.60
3806	13/16"	3.90	3819	1 3/4"	8.60
3807	7/8"	3.90	3820	1 7/8"	10.65
3808	15/16"	4.40	3821	2"	11.25
3809	1"	4.40	3822	2 1/8"	12.15
3810	1 1/16"	4.60	3823	2 1/4"	12.60
3811	1 1/8"	4.60	3824	2 1/2"	20.40
3812	1 5/32"	4.60	3825	2 3/4"	28.45
3813	1 3/16"	4.60	3826	3"	39.20

H.H.S. No. 3836 Meter Hole Punch—Hole size, 2 25/32". Net Each **$20.35**

SQUARE PUNCHES

H.H.S. No.	Hole Size	Net Each	H.H.S. No.	Hole Size	Net Each
3827	1/2"	$10.25	3830	7/8"	$13.00
3828	5/8"	10.25	3831	1"	13.45
3829	3/4"	11.10			

KEY PUNCHES

3832	15/32"	$ 9.65	3834	11 1/64"	$11.45
3833	15/16"	10.40	3835	11 7/64"	13.45

"D" PUNCHES

3837	1/2" x 15/32"	$8.35	3838	5/8" x 19/32"	$8.85

STANDARD DRIVE SCREWS

H.H.S. No.	Use with Numbers	Net Each	H.H.S. No.	Use with Numbers	Net Each
3847	3804–3807	$0.40	3849	3818, 3819	$0.75
3848	3808–3817	.45	3850	3820–3824	.85

BALL BEARING DRIVE SCREWS

Reduces friction and effort when punches round holes 1 1/16" and larger. For use only with round punches listed above.

3839	3804–3808	$1.75	3842	3820–3824 and 3836	$4.50
3840	3809–3817	1.85			
3841	3818, 3819	4.30			

RELAY SOCKET PUNCHES

H.H.S. No.	Hole Size, In.	Net Each	H.H.S. No.	Hole Size, In.	Net Each
3845	1.018 x .861	$20.95	3846	1.250 x 1.375	$31.90

CHASSIS PUNCH SET

Set of seven of the most often used chassis punches for electronic construction. Packed in plastic platform box to keep punches sharp and rust free. Includes sizes: 1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4".

H.H.S. No. 3844 Chassis Punch Set—Net Each **$30.00**

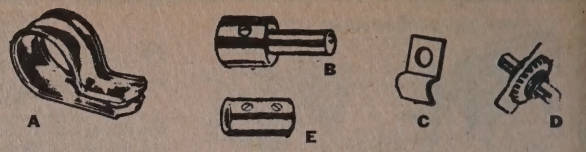
H. H. Smith CABLE CLAMPS, AND KNOBS

CABLE CLIPS (FIG. A)

Tough, lightweight, durable cable holders withstand hard use, moisture, corrosion, shock and vibration for a long life. **Ethyl cellulose** types for temperatures −60° to +175° F; .060″ thick, ½″ w. with .204″ mtg. hole. **Molded nylon** clamps withstand temperatures from −60° to +250° F; .060″ thick, ½″ w. with .204″ dia. mtg. hole for units ¼″ to 1¼″ dia.; all others, .040″ thick, ⅜″ w. with .167″ dia. mtg. hole.

I.D., Inches (Cable Size)	Cellulose H.H.S. No.	Cellulose Mtg. Center*	Cellulose Net Per C	Nylon H.H.S. No.	Nylon Mtg. Center*	Nylon Net Per C
1/8	831	.360″	$2.34	771	.310″	$ 3.60
5/16	832	.423″	2.40	772	.373″	3.90
1/4	833	.457″	2.58	773	.407″	4.20
5/16	834	.498″	2.85	774	.448″	4.65
3/8	835	.529″	3.00	775	.479″	4.80
7/16	836	.560″	3.30	776	.510″	5.10
1/2	837	.592″	3.60	777	.542″	5.40
9/16	838	.623″	4.20	778	.623″	6.60
5/8	839	.654″	4.50	779	.654″	7.20
11/16	840	.752″	4.80	780	.752″	7.50
3/4	841	.783″	5.10	781	.783″	8.10
7/8	842	.845″	5.40	782	.845″	8.70
1	843	.908″	5.70	783	.908″	10.20
1 1/16	844	.970″	6.00	784	1.002″	12.00
1 1/4	845	1.062″	6.30	785	1.062″	13.80

*From center of cable to center of mounting hole.



CABLE CLAMPS (FIG. C)

Cadmium plated steel with #8 mtg. hole.

H.H.S. No.	Length	Width	Cable O.D.	Net Per 100
1471	5/8″	3/8″	1/8″	$0.90
1470	3/4″	3/8″	1/4″	.95
1472	1″	3/8″	1/2″	1.00

BRASS AND INSULATED EXTENDERS (FIG. B)

Extra long extenders in either brass or insulated material. Suitable for use on amplifiers, television receivers, radio receivers or wherever a ¼″ shaft extender is required.

H. H. Smith No.	Type	Material	Shaft Length	Overall Length	Net Per C
150	¼″-¼″	Brass*	1¼″	1¾″	$65.00
130	¼″-¼″	Insulated	1¼″	1¾″	65.00
132	⅜″-¼″	Brass*	1¼″	1¾″	75.00

*Nickel-plated.

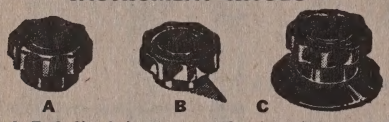
BRASS AND INSULATED COUPLERS (FIG. E)

Available in both brass and insulated material. Overall length ¾″. Set screws are provided in coupler for tightening to shaft.

Type	Brass Couplers H.H.S. No.	Brass Couplers Net Each	Insulated Couplers H.H.S. No.	Insulated Couplers Net Each
¼″-¼″	120*	40c	140*	40c
⅜″-¼″	131	48c		
⅜″-⅜″	133	48c		

*1/16″ O.D.; all others, ⅛″ O.D.

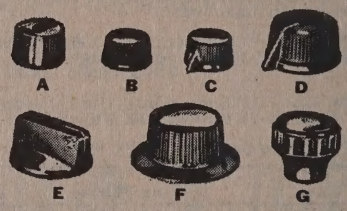
INSTRUMENT KNOBS



Molded black Bakelite® instrument knobs with molded-in brass insert for ¼″ shafts. **Style B** has white vinyl pointer. **Style C** is skirt type with white indicator line. **Style D** is similar to Style A except with protruding brass insert for mounting special dials and pointers. ®Registered Bakelite Corp. trademark.

H. H. Smith No.	Style	O.D.	Special	Height	Net Each
2200	A	1 1/8″	.....	5/8″	$0.52
2201	A	1 3/8″	.....	11/16″	.53
2202	A	1 5/8″	.....	3/4″	.59
2203	A	2 3/8″	.....	7/8″	.80
2204	B	1 1/8″	3/4″ pointer	11/16″	.78
2205	B	1 3/8″	1 1/16″ pointer	3/4″	.79
2206	B	1 5/8″	1 3/16″ pointer	13/16″	.84
2207	B	2 3/8″	1 9/16″ pointer	15/16″	1.08
2208	C	1 1/8″	1 1/2″ skirt	13/16″	1.06
2209	C	1 3/8″	1 3/4″ skirt	7/8″	1.14
2210	C	1 5/8″	2 1/16″ skirt	29/32″	1.23
2211	C	2 3/8″	3″ skirt	1 1/32″	1.55

CONTROL KNOBS

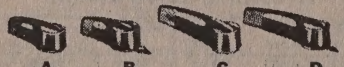


Molded Bakelite control knobs. Supplied with ¼″ molded hole. Complete with set screw.

H. H. Smith No.	Style	O.D.	Height	Color	Net Each
2240	A	3/4″	19/32″	Black	$0.25
2242	B	1 1/16″	19/32″	Black	.14
2244*	B	1″	1/2″	Black	.20
2246	C	1 1/16″	11/32″	Black	.14
2248*	D	1″	1/2″	Black	.27
2250*	E	1 1/2″	9/16″	Black	.22
2252*	F	1 1/2″	11/16″	Black	.29
2258	G	7/8″	3/4″	Black	.25

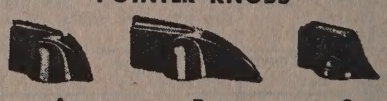
*Recessed for locknut.

LEVER KNOBS WITH ¼″ BRASS INSERT



H. H. Smith No.	Style	Length	Height	Color	Net Each
2232	A	1 5/8″	19/32″	Black	$0.42
2234	B	1 15/16″	19/32″	Black	.74
2236	C	2 1/2″	5/8″	Black	.41
2238	D	2 15/16″	5/8″	Black	.73

POINTER KNOBS



H. H. Smith No.	Style	Type Hole	Color	Net Each
2220	A	¼″ plain	Black	$0.15
2223	A	¼″ brass insert	Black	.19
2226	B	¼″ plain	Black	.28
2228	B	¼″ brass insert	Black	.41
2230	C	¼″ plain	Black	.22

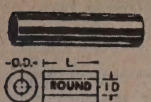
METER OR INSTRUMENT CASES

Molded black with four brass inserts for cover mounting. **No. 2257:** 6 13/16″ x 5 9/32″ x 2 5/16″. **No. 2255:** 6¼″ x 3¾″ x 2″. **No. 2289:** 7 7/16″ x 8½″ x 3″.

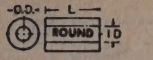
H.H.S. No.	Insert	Description	Net Each
2255	6-32	Small case	$1.00
2257	4-36	Medium case	2.00
2289	6-32	Large case	2.40
2256	.....	Cover for 2255	.75
2260	.....	Cover for 2257	1.30

H. H. Smith Spacers, Standoffs

CADMIUM-PLATED BRASS SPACERS



Brass bushings are ideal for use in raising sub-panels, chassis, variable capacitors, transformers, etc. Hole in bushing accommodates #4, #6 or #8 screw.



¼" O.D. SPACERS

Lgth., In.	H. H. Smith No. For #4 Screw	For #6 Screw	For #8 Screw	Net per C
.125	8700	8701	8702	$ 5.70
.187	8703	8704	8705	6.20
.250	2340	2100	2105	7.00
.312	8706	8707	8708	7.90
.375	2341	2101	2106	8.40
.437	8709	8710	8711	9.20
.500	2342	2102	2107	9.40
.562	8712	8713	8714	10.70
.652	8715	8716	8717	11.20
.687	8718	8719	8720	14.00
.750	2343	2103	2108	14.50
.812	8721	8722	8723	15.00
.875	8724	8725	8726	16.30
.937	8727	8728	8729	16.80
1.000	2344	2104	2109	18.60

⅜" O.D. SPACERS

.125	8730	8731	8732	$10.20
.187	8733	8734	8735	11.90
.250	2345	2110	2115	12.50
.312	8736	8737	8738	13.40
.375	2346	2111	2116	15.90
.437	8739	8740	8741	16.90
.500	2347	2112	2117	17.30
.562	8742	8743	8744	21.80
.625	8745	8746	8747	20.70
.687	8748	8749	8750	23.30
.750	2348	2113	2118	20.60
.812	8751	8752	8753	24.10
.875	8754	8755	8756	27.40
.937	8757	8758	8759	28.20
1.000	2349	2114	2119	29.30

¼" O.D. THREADED SPACERS

Same as above, but threaded for 4-40, 6-32 or 8-32 screw.

Lgth., In.	H. H. Smith No. 4-40 Thd.	6-32 Thd.	8-32 Thd.	Net per C
.125	8760	8761	8762	$ 7.40
.187	8763	8764	8765	7.70
.250	2370	2120	2125	8.00
.312	8766	8767	8768	8.50
.375	2371	2121	2126	9.50
.437	8769	8770	8771	10.10
.500	2372	2122	2127	12.40
.562	8772	8773	8774	13.20
.625	8775	8776	8777	13.70
.687	8778	8779	8780	17.80
.750*	2373	2123	2128	18.00
.812*	8781	8782	8783	18.10
.875*	8784	8785	8786	19.10
.937*	8787	8788	8789	19.50
1.000*	2374	2124	2129	21.00

*Thread is tapped in ⅜" from each end, not continuous through.

CADMIUM-PLATED BRASS HEX SPACERS

¼" HEX

Lgth., In.	H. H. Smith No. For #4 Screw	For #6 Screw	For #8 Screw	Net per C
.125	8790	8791	8792	$ 6.40
.187	8793	8794	8795	6.80
.250	2380	2300	2305	7.50
.312	8796	8797	8798	8.90
.375	2381	2301	2306	9.20
.437	8799	8800	8801	9.50
.500	2382	2302	2307	9.80
.562	8802	8803	8804	10.80
.625	8805	8806	8807	11.40
.687	8808	8809	8810	14.20
.750	2383	2303	2308	14.50
.812	8811	8812	8813	15.70
.875	8814	8815	8816	11.75
.937	8817	8818	8819	19.00
1.000	2384	2304	2309	20.00

⅜" HEX

Lgth., In.	H. H. Smith No. For #4 Screw	For #6 Screw	For #8 Screw	Net per C
.125	8850	8851	8852	$10.60
.187	8853	8854	8855	11.90
.250	2385	2310	2315	12.80
.312	8856	8857	8858	14.80
.375	2386	2311	2316	16.20
.437	8859	8860	8861	19.80
.500	2387	2312	2317	20.50
.562	8862	8863	8864	21.50
.625	8865	8866	8867	23.70
.687	8868	8869	8870	24.10
.750	2388	2313	2318	25.10
.812	8871	8872	8873	26.40
.875	8874	8875	8876	29.50
.937	8877	8878	8879	29.90
1.000	2389	2314	2319	32.60

¼" HEX THREADED SPACERS

Lgth., In.	H. H. Smith No. 4-40 Thd.	6-32 Thd.	8-32 Thd.	Net per C
.125	8820	8821	8822	$ 7.50
.187	8823	8824	8825	8.00
.250	2330	2320	2325	8.70
.312	8826	8827	8828	9.40
.375	2331	2321	2326	10.60
.437	8829	8830	8831	11.40
.500	2332	2322	2327	12.40
.562	8832	8833	8834	14.50
.625	8835	8836	8837	17.30
.687	8838	8839	8840	18.30
.750*	2333	2323	2328	19.30
.812*	8841	8842	8843	20.00
.875*	8844	8845	8846	20.30
.937*	8847	8848	8849	21.30
1.000*	2334	2324	2329	22.80

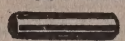
*Thread is tapped in ⅜" from each end, not continuous through.

¼" O.D. FIBRE SPACERS

Fibre bushings per MIL-F-1148A, Grade CH. Ideal for raising sub-panels, chassis, etc. ¼" O.D.

Lgth., In.	H. H. Smith No. For #4 Screw	For #6 Screw	For #8 Screw	Net per C
.125	8880	8881	8882	$ 5.20
.187	8883	8884	8885	5.80
.250	2335	2130	2140	6.30
.312	8886	8887	8888	7.10
.375	2336	2131	2141	7.80
.437	8889	8890	8891	8.50
.500	2337	2132	2142	9.20
.562	8892	8893	8894	10.20
.625	8895	8896	8897	10.60
.687	8898	8899	8900	11.70
.750	2338	2133	2143	12.60
.812	8901	8902	8903	13.80
.875	8904	8905	8906	14.50
.937	8907	8908	8909	15.20
1.000	2339	2134	2144	15.50

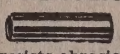
¼" O.D. NYLON SPACERS



Non-conductive and molded of corrosion-resistant nylon. Useful as bushings, bearings, rollers and glides. Natural finish.

.125	4000	4001	4002	$ 3.30
.187	4003	4004	4005	3.80
.250	4006	4007	4008	4.30
.312	4009	4010	4011	4.90
.375	4012	4013	4014	5.50
.437	4015	4016	4017	6.00
.500	4018	4019	4020	6.50
.562	4021	4022	4023	7.00
.625	4024	4025	4026	7.50
.687	4027	4028	4029	8.00
.750	4030	4031	4032	8.50
.812	4033	4034	4035	8.80
.875	4036	4037	4038	9.30
.937	4039	4040	4041	9.70
1.000	4042	4043	4044	10.00

PHENOLIC THREADED SPACERS



Natural color PBE Grade MIL-P-79A phenolic. Good mechanical strength; resists abrasion and chemicals. Excellent dielectric; low moisture absorption. ¼" O.D.

Lgth., In.	H. H. Smith No. 4-40 Thd.	6-32 Thd.	8-32 Thd.	Net per C
.250	8660	8661	8662	$ 9.40
.312	8663	8664	8665	10.40
.375	8666	8667	8668	12.00
.437	8669	8670	8671	12.40
.500	8672	8673	8674	13.40
.562	8675	8676	8677	14.00
.625	8678	8679	8680	15.00
.687	8681	8682	8683	16.70
.750*	8684	8685	8686	17.70
.812*	8687	8688	8689	18.40
.875*	8690	8691	8692	19.40
.937*	8693	8694	8695	20.00
1.000*	8696	8697	8698	21.00

*Thread is tapped in ⅜" from each end, not continuous through.

JAN AND COMMERCIAL CERAMIC STANDOFFS

Grade L-5 ceramic with glazed outside. JAN types are made to JAN 1-8 and JAN 1-10 specifications. Threaded at each end.

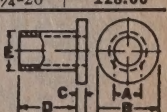
JAN STANDOFFS

H.H.S. No.	JAN Type	Dimensions A	B	C	Thd.	Net per C
2600	NL523W01-004	½"	⅜"	5/32"	6-32	$ 24.00
2601	NL523W01-005	5/8"	⅜"	¼"	6-32	25.00
2602	NL523W01-006	¾"	⅜"	¼"	6-32	26.00
2603	NL523W01-008	1"	⅜"	⅜"	6-32	28.00
2604	NL523W01-010	1¼"	⅜"	⅜"	6-32	29.00
2605	NL523W01-012	1½"	⅜"	⅜"	6-32	32.00
2606	NL523W01-016	2"	⅜"	⅜"	6-32	35.00
2607	NL523W02-005	5/8"	½"	3/16"	8-32	26.00
2608	NL523W02-006	¾"	½"	¼"	8-32	27.00
2609	NL523W02-008	1"	½"	⅜"	8-32	29.00
2610	NL523W02-010	1¼"	½"	⅜"	8-32	32.00
2611	NL523W02-012	1½"	½"	⅜"	8-32	34.00
2612	NL523W02-016	2"	½"	⅜"	8-32	38.00
2613	NL523W02-020	2½"	½"	⅜"	8-32	42.00
2614	NL523W02-024	3"	½"	⅜"	8-32	46.00
2615	NL523W03-008	1"	¾"	⅜"	10-32	55.00
2616	NL523W03-010	1¼"	¾"	⅜"	10-32	59.00
2617	NL523W03-012	1½"	¾"	⅜"	10-32	67.00
2618	NL523W03-016	2"	¾"	⅜"	10-32	70.00
2619	NL523W03-020	2½"	¾"	⅜"	10-32	78.00
2620	NL523W03-024	3"	¾"	⅜"	10-32	87.00
2621	NL523W03-032	4"	¾"	⅜"	10-32	95.00
2622	NL523W04-010	1¼"	1"	7/16"	¼-20	78.00
2623	NL523W04-012	1½"	1"	½"	¼-20	84.00
2624	NL523W04-016	2"	1"	⅝"	¼-20	98.00
2625	NL523W04-020	2½"	1"	⅝"	¼-20	109.00
2626	NL523W04-024	3"	1"	⅝"	¼-20	118.00
2627	NL523W04-032	4"	1"	⅝"	¼-20	129.00
2628	NL523W04-040	5"	1"	⅝"	¼-20	140.00
2629	NL523W04-048	6"	1"	⅝"	¼-20	151.00

COMMERCIAL STANDOFFS

H.H.S. No.	Dimensions A	B	C	Thread	Net per C
2640	¼"	¼"	Thru	6-32	$ 21.00
2641	½"	¼"	5/32"	6-32	22.00
2642	⅜"	⅜"	5/32"	6-32	23.00
2643	½"	⅜"	3/16"	6-32	24.00
2644	½"	½"	9/64"	6-32	25.00
2645	¾"	½"	¼"	6-32	26.00
2646	1"	½"	⅜"	6-32	28.00
2647	1½"	½"	9/16"	6-32	32.00
2648	2½"	½"	½"	6-32	55.00
2649	2½"	¾"	¾"	¼-20	110.00
2650	4"	¾"	¾"	¼-20	128.00

NYLON SPACER BUSHINGS



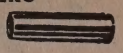
Natural color. MIL-P-20693A.

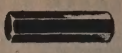
H.H.S. No.	Size, Inches I.D.(A)	B	C	D	E	Net per C
2534	#4 (.115)	.235	3/64	¼	.147	$2.30
2535	#6 (.140)	.290	3/64	¼	.170	2.40
2536	#8 (.170)	.344	1/16	⅜	.205	2.50
2537	#10 (.200)	.399	1/16	⅜	.260	2.70
2538	¼" (.260)	.513	1/16	⅜	.312	3.00

H. H. Smith Spacers, Washers

ALUMINUM SPACERS

Iridite 14-2 per MIL-C-5541. Round or hex; with clear or tapped hole. .250″ or .312″ O.D. (or hex).

 Round

 Hex

ROUND—CLEAR HOLE

Lgth., In.	.250″ O.D. H. H. Smith No. For #4 Screw	For #6 Screw	For #8 Screw	Net per C	.312″ O.D. H.H.S. No. For #10 Screw	Net per C
.125	8480	8500	8520	$ 5.00	8540	$ 7.00
.250	8481	8501	8521	6.00	8541	8.00
.375	8482	8502	8522	7.00	8542	9.00
.500	8483	8503	8523	8.00	8543	10.00
.625	8484	8504	8524	9.00	8544	11.00
.750	8485	8505	8525	10.00	8545	12.00
.875	8486	8506	8526	11.00	8546	13.00
1.000	8487	8507	8527	12.00	8547	14.00
1.250	8488	8508	8528	15.00	8548	15.00
1.500	8489	8509	8529	16.00	8549	16.00
1.750	8490	8510	8530	17.00	8550	17.00
2.000	8491	8511	8531	18.00	8551	18.00

ROUND—TAPPED HOLE

Lgth., In.	.250″ O.D. H. H. Smith No. 4-40 Thd.	6-32 Thd.	8-32 Thd.	Net per C	.312″ O.D. H.H.S. No. 10-32 Thd.	Net per C
.125	8320	8340	8360	$ 6.00	8380	$ 8.00
.250	8321	8341	8361	7.00	8381	9.00
.375	8322	8342	8362	8.00	8382	10.00
.500	8323	8343	8363	9.00	8383	11.00
.625	8324	8344	8364	10.00	8384	12.00
.750	8325	8345	8365	11.00	8385	13.00
.875	8326	8346	8366	12.00	8386	14.00
1.000	8327	8347	8367	14.00	8387	15.00
1.250	8328	8348	8368	16.00	8388	16.00
1.500	8329	8349	8369	17.00	8389	17.00
1.750	8330	8350	8370	18.00	8390	18.00
2.00	8331	8351	8371	19.00	8391	19.00

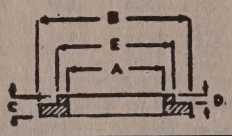
HEX—CLEAR HOLE

.125	8560	8580	8600	$ 6.00	8620	$ 9.00
.250	8561	8581	8601	7.00	8621	10.00
.375	8562	8582	8602	8.00	8622	11.00
.500	8563	8583	8603	9.00	8623	12.00
.625	8564	8584	8604	10.00	8624	13.00
.750	8565	8585	8605	11.00	8625	14.00
.875	8566	8586	8606	12.00	8626	15.00
1.000	8567	8587	8607	13.00	8627	16.00

HEX—TAPPED HOLE

.125	8400	8420	8440	$ 7.00	8460	$10.00
.250	8401	8421	8441	8.00	8461	11.00
.375	8402	8422	8442	9.00	8462	12.00
.500	8403	8423	8443	10.00	8463	13.00
.625	8404	8424	8444	11.00	8464	14.00
.750	8405	8425	8445	12.00	8465	15.00
.875	8406	8426	8446	13.00	8466	16.00
1.000	8407	8427	8447	14.00	8467	17.00

FIBRE SHOULDER WASHERS



Commercial black vulcanized fibre per MIL-F-1148A, Grade CH. **Dimensions:** A, inside dia.; B, outside dia.; C, overall thickness; D, height of shoulder; E, diameter of shoulder.

H.H.S. No.	Screw Clear.	Dimensions, Inches A	B	C	D	E	Net per C	Net per M
2171	No. 2	.093	.250	.055	.025	.154	$1.40	$11.00
2151	No. 4	.115	.250	.062	.031	.187	1.40	11.00
2152	No. 6	.141	.250	.093	.031	.187	1.40	11.00
2153	No. 6	.141	.312	.093	.031	.187	1.50	12.00
2150	No. 6	.141	.375	.093	.031	.240	1.50	12.00
2155	No. 8	.167	.375	.093	.031	.246	1.50	12.00
2156	No. 10	.194	.375	.093	.031	.308	1.60	13.00
2154	1/4″	.253	.500	.093	.031	.308	1.60	13.00
2159	17/64″	.265	.500	.093	.031	.365	2.10	17.00
2158	3/8″	.385	.625	.093	.031	.498	2.30	19.00
2157	3/8″	.378	.750	.093	.031	.498	2.70	22.00

NYLON SHOULDER WASHERS

Natural nylon (Zytel 101) per MIL-P-20693A. **Dimensions:** A, inside dia.; B, outside dia.; C, overall thickness; D, height at shoulder; E, shoulder dia.

H.H.S. No.	Screw Clear.	Dimensions, Inches A	B	C	D	E	Net per C	Net per M
2651	No. 2	.093	.250	.055	.025	.154	$2.20	$17.00
2661	No. 4	.115	.250	.062	.031	.187	2.00	15.00
2662	No. 6	.141	.250	.093	.031	.187	2.00	15.00
2663	No. 6	.141	.312	.093	.031	.187	2.10	16.00
2660	No. 6	.141	.375	.093	.031	.240	2.20	17.00
2665	No. 8	.167	.375	.093	.031	.246	2.20	17.00
2666	No. 10	.194	.375	.093	.031	.308	2.20	17.00
2664	1/4″	.253	.500	.093	.031	.308	3.30	25.00
2669	17/64″	.265	.500	.093	.031	.365	3.30	25.00
2668	3/8″	.385	.625	.093	.031	.498	3.30	25.00
2667	3/8″	.378	.750	.093	.031	.498	4.80	37.00

FIBRE FLAT WASHERS

Commercial vulcanized black fibre per MIL-F-1148A, Grade CH.

H.H.S. No.	Screw Clearance	I.D.	O.D.	Thick-ness	Net per C	Net per M
2191	No. 2	.093″	.250″	1/32″	$0.80	$ 6.00
2161	No. 4	.115″	.250″	1/16″	.90	7.00
2160	No. 6	.141″	.250″	1/16″	.90	7.00
2162	No. 6	.141″	.375″	1/16″	.90	7.00
2163	No. 8	.169″	.375″	1/16″	1.00	8.00
2164	No. 10	.196″	.375″	1/16″	1.00	8.00
2165	1/4″	.253″	.500″	1/16″	1.00	8.00
2166	1/4″	.253″	.500″	3/32″	1.80	14.00
2167	5/16″	.315″	.500″	1/16″	1.30	10.00
2168	3/8″	.385″	.625″	1/16″	1.30	10.00
2169	3/8″	.378″	.750″	1/16″	1.90	15.00

NYLON FLAT WASHERS

Natural nylon (Zytel 101) per MIL-P-20693A.

H.H.S. No.	Screw Clearance	I.D.	O.D.	Thick-ness	Net per C	Net per M
2652	No. 2	.093″	.250″	1/32″	$1.00	$ 8.00
2671	No. 4	.115″	.250″	1/16″	1.20	9.00
2514	No. 4	.115″	.281″	3/64″	1.20	9.00
2670	No. 6	.141″	.250″	1/16″	1.20	9.00
2515	No. 6	.141″	.312″	3/64″	1.20	9.00
2672	No. 6	.141″	.375″	1/16″	1.40	11.00
2673	No. 8	.170″	.375″	1/16″	1.40	11.00
2516	No. 8	.170″	.375″	1/16″	1.40	11.00
2674	No. 10	.196″	.375″	1/16″	1.40	11.00
2517	No. 10	.196″	.437″	1/16″	1.80	14.00
2675	1/4″	.253″	.500″	1/16″	2.10	16.00
2676	1/4″	.253″	.500″	3/32″	3.30	25.00
2518	1/4″	.253″	.562″	1/16″	2.20	17.00
2677	5/16″	.315″	.500″	1/16″	2.10	16.00
2678	3/8″	.385″	.625″	1/16″	2.50	19.00
2679	3/8″	.378″	.750″	1/16″	3.90	30.00

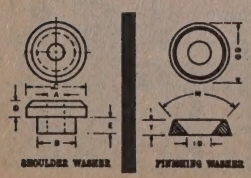
FIBRE WASHER KIT

Contains about 1000 flat and shoulder washers, packed in 18-compartment plastic box, in the following approximate quantities: 100 each #2151, 2161, 2160; 75 each #2150 and 2162; 60 each #2155, 2163; 50 each #2156, 2164, 2154, 2165; 35 each #2159, 2167; 25 each #2158, 2168; 10 each #2157 and 2169.

H. H. Smith No. 2173—Net Each..... **$15.00**

MOLDED NYLON WASHERS

Non-conductive and corrosion resistant; ideal for insulation, cushioning or spacing protection. Meets MIL-P-20693, Type I. Natural.



SHOULDER WASHERS

H.H.S. No.	Dimensions, Inches A	B	C	D	E	Net per C
2681	.122	.187	.281	.040	.040	$2.25
2682	.146	.218	.328	.040	.040	2.40
2683	.174	.250	.375	.060	.050	2.50
2684	.201	.281	.437	.050	.050	2.75
2685	.260	.375	.562	.060	.060	3.00
2686	.385	.500	.750	.060	.060	4.75

FINISHING WASHERS

H.H.S. No.	O.D.	I.D.	Thick-ness	Net per C
2687	.437″	.143″	.100″	$5.00
2688	.515″	.171″	.115″	5.25
2689	.580″	.191″	.152″	5.50
2690	.609″	.225″	.160″	6.00
2691	.683″	.251″	.183″	6.50

HOT TINNED SOLDER LUGS

1484 1485 1486 1488

1490 1491 1493 1494 1495 1496

PHOSPHOR BRONZE

H.H.S. No.	Lgth.	Thick-ness	Hole	Net per M
1484	5/8″	.020″	No. 6	$12.00
1485-4	17/32″	.012″	No. 4	12.00
1485-6	17/32″	.012″	No. 6	12.00
1485-8	17/32″	.012″	No. 8	12.00
1485-10	17/32″	.012″	No. 10	12.00
1486-4	13/16″	.012″	No. 4	12.00
1486-6	13/16″	.012″	No. 6	12.00
1486-8	13/16″	.012″	No. 8	12.00
1486-10	13/16″	.012″	No. 10	12.00
1488-4	9/16″	.012″	No. 4	12.00
1488-6	9/16″	.012″	No. 6	12.00
1488-8	9/16″	.012″	No. 8	12.00

BRASS

1490	3/4″	.020″	No. 10	$15.00
1491*	15/16″	.020″	No. 10	25.00
1493	1 1/8″	.027″	1/4″	30.00
1494-6	5/8″	.020″	No. 6	13.00
1494-8	5/8″	.020″	No. 8	13.00
1495	5/8″	.020″	No. 8	15.00
1496	3/4″	.020″	1/4″	15.00
1497	7/8″	.017″	3/8″	18.00

*Copper.

SOLDER LUG ASSORTMENT

Complete assortment of the most widely used solder lug styles, with hole sizes from #4 thru #10. Packed in re-usable clear plastic compartmented box. Includes 1400 solder lugs.

H. H. Smith No. 1546—Net.....**$20.00**

LOCKING TERMINAL LUGS

A B C D E F G

HOT TINNED BRASS

H.H.S. No.	Lgth.	Thick-ness	Hole	Net per M
1410-4*	7/8″	.018″	No. 4	$15.00
1410-6*	7/8″	.018″	No. 6	15.00
1410-8*	7/8″	.018″	No. 8	15.00
1410-10*	57/64″	.018″	No. 10	15.00
1410-14*	13/16″	.018″	1/4″	15.00
1411-4†	47/64″	.020″	No. 4	15.00
1411-6†	47/64″	.020″	No. 6	15.00
1411-8†	47/64″	.020″	No. 8	15.00
1412-4‡	5/8″	.018″	No. 4	15.00
1412-6‡	5/8″	.018″	No. 6	15.00
1412-8‡	5/8″	.018″	No. 8	15.00
1413-4§	23/32″	.018″	No. 4	15.00
1413-6§	23/32″	.018″	No. 6	15.00
1413-8§	23/32″	.018″	No. 8	15.00
1414-4#	13/16″	.018″	No. 4	15.00
1414-6#	13/16″	.018″	No. 6	15.00
1414-8#	13/16″	.018″	No. 8	15.00
1414-10#	53/64″	.018″	No. 10	15.00
1415-4•	47/64″	.018″	No. 4	15.00
1415-6•	47/64″	.018″	No. 6	15.00
1415-8•	47/64″	.018″	No. 8	15.00
1416-4^	1 1/16″	.020″	No. 4	15.00
1416-6^	1 1/16″	.020″	No. 6	15.00
1416-8^	1 1/16″	.020″	No. 8	15.00

ELECTRO PLATED BRASS

1465*	47/64″	.020″	No. 4	$15.00
1466*	47/64″	.020″	No. 6	15.00
1467*	7/8″	.020″	No. 8	15.00
1468*	13/16″	.020″	1/4″	15.00

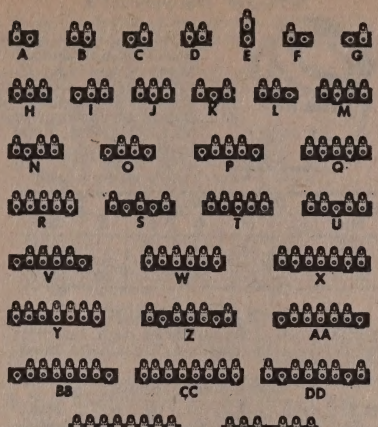
*Fig. A. †Fig. B. ‡Fig. C. §Fig. D. #Fig. E. •Fig. F. ^Fig. G.

LOCKING TERMINAL LUG ASSORTMENT

Complete assortment of most widely used locking terminal lug styles, with hole sizes from #4 thru #10. Includes approx. 900 lugs, packed in re-usable clear plastic compartmented box.

H. H. Smith No. 1547—Net.....**$20.00**

TIE DOWN TERMINAL STRIPS



Standard Type: XP phenolic strip, 5/16″ wide x .062″ thick. Cadmium-plated steel lugs, spaced on 1/4″ centers. Mounting, .096″ I.D. for #3 screw of 3/32″ rivet.

Miniature Type: XP phenolic strip, 3/8″ wide x .062″ thick. Cadmium-plated steel lugs, spaced on 3/8″ centers. Mounting, .140″ I.D. for #6 screw.

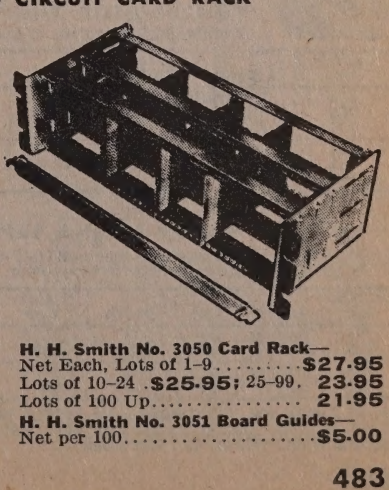
	Standard Type		Miniature Type	
Fig.	H.H.S. No.	Net per C	H.H.S. No.	Net per C
A	861	$ 4.10	1061	$ 6.10
B	862	4.10	1062	6.10
C	813	4.10	1003	6.10
D	820	4.10	1004	6.10
E	849	4.10	1039	6.10
F	828	4.10	1005	6.10
G	821	4.10	1009	6.10
H	830	5.20	1055	8.10
I	829	5.20	1043	8.10
J	864	5.20	1064	8.10
K	863	5.20	1063	8.10
L	846	5.20	1059	8.10
M	850	5.80	1074	8.60
N	857	5.80	1072	9.20
O	867	7.00	1067	9.80
P	853	8.60	1073	10.40
Q	868	8.60	1068	10.90
R	847	8.60	1071	10.90
S	865	8.60	1065	10.40
T	866	7.00	1066	10.90
U	855	6.90	1084	10.40
V	869	9.70	1069	12.70
W	854	9.70	1076	12.70
X	879	10.50	1158	14.40
Y	859	10.50	1156	14.40
Z	871	10.50	1157	14.40
AA	860	10.50	1060	14.40
BB	848	11.00	1078	16.10
CC	900	11.00	1075	16.10
DD	858	11.00	1096	16.10
EE	870	11.00	1070	16.10
FF	901	11.00		

ADJUSTABLE PRINTED CIRCUIT CARD RACK

Universally adjustable, economical support system for printed circuit cards. Adjusts up-and-down for card widths from 2 3/8″ to 4 3/4″; adjusts front-to-back for card lengths from 3 1/2″ to 7 1/4″. Card spacing is adjustable in .400″ increments. Adjustable, calibrated slide racks for fast, precise adjustment to any card size. Adjustable locking bar holds cards securely against rear connectors; adjustable for various PC connector sizes. Fits standard 19″ racks.

SPECIFICATIONS

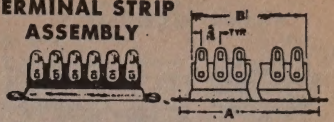
Card Capacity: Up to 39 cards (.400″ minimum centers). **Card Sizes:** With locking bar: 4 3/4″ maximum width, 6 1/2″ maximum length, 2 3/8″ minimum width, 4 3/8″ minimum length. Without front card lock: 7 1/4″ maximum length, 3 1/2″ minimum length. **Card Guides:** Precision molded plastic. Four guides provided for each card to insure location accuracy. **Connector Spacing:** Accommodates card-edge connectors with mounting centers from 0.936″ to 4.437″. **Locking Bar:** Held in place with captive screws for rapid card change. Card identification marking available on front of locking bar.



H. H. Smith No. 3050 Card Rack—
Net Each, Lots of 1–9.....**$27.95**
Lots of 10–24 .**$25.95**; 25–99. **23.95**
Lots of 100 Up..... **21.95**

H. H. Smith No. 3051 Board Guides—
Net per 100.....**$5.00**

TERMINAL STRIP ASSEMBLY



Cadmium-plated steel lugs and base. Mounting holes for #6 screw. XP phenolic strip.

H.H.S. No.	Ter-minals	Dimensions A	Dimensions B	Net per C
3002	2	1.000″	5/8″	$10.50
3003	3	1.312″	15/16″	13.00
3004	4	1.625″	1 1/4″	15.50
3005	5	1.937″	1 9/16″	17.00
3006	6	2.250″	1 7/8″	18.50
3007	7	2.562″	2 3/16″	19.50
3008	8	2.875″	2 1/2″	22.00
3009	9	3.187″	2 13/16″	24.00
3010	10	3.500″	3 1/8″	26.50
3011	11	3.812″	3 7/16″	27.50
3012	12	4.125″	3 3/4″	30.00
3013	13	4.937″	4 3/32″	32.00

HEAVY DUTY TERMINAL BOARD

XP phenolic strip, 7/8″ wide x 3/32″ thick, numbered. Cadmium-plated brass lug, .042″ thick, spaced on 1/2″ centers; terminals numbered. Nickel-plated brass screw, 8-32 x 5/16″.

H.H.S. No.	Ter-minals	Mtg. Centers	Net per C
902	2	1 1/2″	$ 28.00
903	3	2″	35.00
904	4	2 1/2″	42.00
905	5	3″	50.00
906	6	3 1/2″	56.00
907	7	4″	63.00
908	8	4 1/2″	72.00
909	9	5″	79.00
910	10	5 1/2″	87.00
911	11	6″	94.00
912	12	6 1/2″	102.00

SCREW TYPE TERMINAL BOARD

XP phenolic strip, 5/8″ wide x .062″ thick. Hot tinned brass lugs, spaced on 7/16″ centers. Cadmium-plated steel screw, 6-32 x 3/8″.

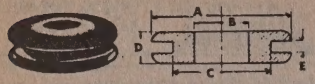
Terminal Board

Shorting Link

H.H.S. No.	Ter-minals	Mtg. Centers	Net per C
914	1	7/8″	$12.00
872	2	1 7/16″	13.00
873	3	1 3/4″	19.00
874	4	2 3/16″	23.00
875	5	2 5/8″	28.00
876	6	3 1/16″	31.00
877	7	3 1/2″	38.00
928	8	3 15/16″	42.00
929	9	4 3/8″	46.00
930	10	4 13/16″	52.00

H. H. Smith No. 878 Shorting Link—
Net per 100.....**$2.50**

RUBBER GROMMETS



H.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
91114	1 1/32	1/8	1/4	3/16	1/16	$ 2.50
91118	7/16	3/16	5/16	7/32	1/16	2.50
91103	9/16	3/16	15/32	3/8	1/8	3.30
91122	1/2	1/4	1 1/32	5/32	1/32	3.10
91102	5/8	9/32	1 3/32	3/8	5/32	3.50
91117	1 3/32	5/16	7/16	3/8	1/8	3.50
91116	3/4	5/16	1/2	3/8	1/8	5.00
91106	5/8	5/16	1/2	1/2	3/16	7.20
91119	9/16	1/4	1 3/32	1/4	1/16	2.70
91123	1 1/16	9/32	1/2	7/16	1/4	5.50
91120	5/8	1 9/64	7/16	1/4	1/16	3.10
91107	5/8	3/8	7/16	5/16	3/32	5.00
91121	2 1/32	3/8	1/2	1/4	1/16	3.00
91100	1 3/16	3/8	1/2	1 3/32	9/64	8.00
91124	3/4	7/16	9/16	1/4	1/16	3.50
91111	7/8–1	3/8	1 1/16	1 3/32	9/64	9.00
91109	1 1/16	3/8	7/8	3/8	1/4	15.00
91112	1 5/8	4 9/64	1 3/32	5/16	1/16	15.00

RUBBER GROMMETS

H.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
2185	5/16	1/8	3/16	3/16	1/16	$2.40
2172	7/16	3/16	5/16	3/16	1/16	2.20
2170	5/8	1/4	3/8	1/4	1/16	2.50
2174	5/8	5/16	7/16	1/4	1/16	2.40
2175	2 1/32	3/8	1/2	1/4	1/16	2.50
2177	3/4	7/16	9/16	1/4	1/16	2.50
2186	1 1/16	1/2	3/4	5/16	1/16	5.30
2188	1 1/16	9/16	1 3/16	5/16	1/16	5.30
2187	1 1/8	5/8	7/8	5/16	1/16	5.40
2189	1	3/4	7/8	5/32	1/32	5.20

LACING CORD
NYLON

H.H.S. No.	Class	Test, Lbs.	Yards	Net Each
734	1	70	600	$13.00
735	2	48	800	13.00
736	3	32	1140	13.00

LINEN

H.H.S. No.	Ply	Test, Lbs.	Yards	Tube, Oz.	Net Each
727	4	20	850	16	$12.00
730*	6	42	600	16	12.00
739†	8	56	470	16	12.00
733	9	60	400	16	12.00
742#	12	77	300	16	12.00

*Class 3. †Class 2. #Class 1.

DACRON

H.H.S. No.	Class	Test, Lbs.	Yards	Net Each
722	1	78	750	$11.60
724	3	37	1500	12.70

EXTRUDED "CATERPILLAR" NYLON GROMMETS

Shape your own grommets to fit any size or shape opening. Made of non-conductive black nylon, Type 6/6, fungus resistant to conform to MIL-M-20693a, Type 1. For panel thickness from .052" to .125". 25-foot rolls.

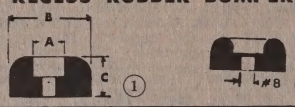
H.H.S. No.	Dimensions, Inches A	B	C	D	E	Net/ Roll
2692	.052	.150	.040	.190	.125	$10.00
2693	.085	.155	.045	.200	.162	11.50
2694	.125	.175	.045	.220	.206	12.00

VINYL GROMMETS

Exceptional aging qualities, high dielectric properties. Oil resistant. Durometer hardness, 45 to 85.

H.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
2145	1 1/32	1/8	1/4	3/16	1/16	$1.20
2146	7/16	3/16	5/16	7/32	1/16	1.35
2147	5/16	1/4	3/8	1/4	1/16	1.70
2148	5/8	3/8	1/2	1/4	1/16	1.75
2149	1 3/16	1/2	5/8	9/32	1/16	2.80

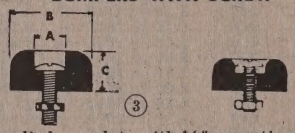
RECESS RUBBER BUMPERS



H.H.S. No.	Fig.	Dimensions, In. A	B	C	Net per C
2192	1	7/32	17/32	1/4	$1.80
2193	1	1/4	5/8	5/16	3.00
2194	1	9/32	3/4	3/8	3.50
2184	1	9/32	5/8	9/32	3.50
2135*	2	3/8	31/32	3/8	5.00

*With molded-in metal washer.

BUMPERS WITH SCREW



Supplied complete with 1/2" mounting screw and hex nut for panels up to 1/4" thick. Specify longer screw for thicker panels.

H.H.S. No.	Fig.	Dim., Inches A	B	C	Screw	Net per C
2196	3	7/32	17/32	1/4	6-32	$ 7.00
2197	3	1/4	5/8	5/16	6-32	8.00
2198	3	9/32	3/4	3/8	6-32	9.00
2199	3	1/4	5/8	9/32	6-32	9.00
2195*	4	3/8	31/32	3/8	8-32	10.00

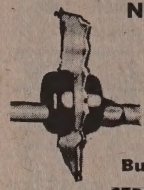
*With molded-in metal washer.

VINYL CABINET BUMPERS

All molded cabinet bumpers with brass insert to absorb screw load. Molded of ethylene vinyl. Black.

H.H.S. No.	For Screw	Dimensions A	B	Net per C
2181	No. 4	3/8"	9/16"	$5.50
2182	No. 6	7/16"	3/4"	6.50
2183	No. 8	7/8"	1 5/16"	9.00

NYLON STRAIN RELIEFS



Bushing

Pliers

STRAIGHT THRU

One-piece construction, absorbs pull and twist. Wire full anchored and insulated at chassis entrance. Available as straight thru or right angle. Standard package of 100.

H.H.S. No.	Wire Size	Dim., Inches* A	B	C	Net per C
937	1/8"–3/16"	.375	.410	.060	$4.00
938	.12" x .22"	.437	.410	.062	4.00
939	.250"–.290"	.500	.438	.100	4.50
822	.12"–.30"	.500	.406	.062	6.00
823	.365"–.360"	.625	.580	.062	9.50

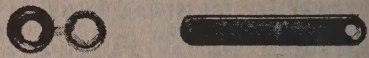
RIGHT ANGLE

824	.12"–.30"	.500	.687	.100	$ 8.50
825	.250"–.290"	.500	.687	.100	8.50
826	.360"–.430"	.750	1.085	.125	19.00

*A, chassis hole; B, length; C, maximum chassis thickness.

H. H. Smith No. 940 Setting Pliers—For above. Net Each..... **$25.00**

BLIND HOLE MOUNTING ACCESSORIES



Grommet Strap

Molded of polyethylene. Just snaps into hole; requires no mounting hardware or special tools. Temperature rating, 100° to 205° F. Gray color.

GROMMETS

Maximum panel thickness, .095".

H.H.S. No.	Mtg. Hole	Cable Dia.	Net per C
8974	1/4"	1/8"	$2.00
8975	3/8"	1/4"	2.25
8976	1/2"	3/8"	2.50
8977	5/8"	1/2"	3.50
8978	3/4"	5/8"	4.00

CABLE STRAPS

Width, 5/16". For panel thickness, 1/16".

8971	1/4"	1/4"	$2.00
8972	1/4"	7/16"	2.50
8973	1/4"	5/8"	3.00

NYLON LACING CORD

Meets MIL-T-713D, Type P, classes 3, 2 and 1. Supplied in 1-lb. tubes, in natural or black color.

H.H.S. No.	Color	Class	Test	Yardage	Net Each
734	Natural	1	70 lb.	600	$13.00
735	Natural	2	48 lb.	800	13.00
736	Natural	3	32 lb.	1140	13.00
791	Black	1	70 lb.	600	17.00
792	Black	2	48 lb.	800	17.00
793	Black	3	32 lb.	1140	17.00

NYLON LACING TAPE

Braided; MGD finish. Size #18 meets MIL-T-43435, Size 3, Finish B. In 500-yard spools; black or natural color.

H.H.S. No.	Color	Size	Width	Thickness	Test	Net Each
766	Natural	18	.090"	.0125"	50 lb.	$15.00
767	Natural	21	.0625"	.009"	25 lb.	17.00
769	Black	18	.090"	.0125"	50 lb.	16.00
770	Black	21	.0625"	.009"	25 lb.	18.00

H. H. Smith No. 743 Commercial Lacing Tape—Same applications as above, but at much lower cost. 1-lb. tube (620 yards); natural color. Width, 1/8". Net Each..... **$12.00**

LINEN LACING CORD

Mildew proofed. Meets MIL-T-713-A, Type N.

H.H.S. No.	Color	Tube Size	Ply	Class	Yardage	Net Each
727	Natural	1 lb.	4	.....	850	$12.00
730	Natural	1 lb.	6	3	600	12.00
739	Natural	1 lb.	8	2	470	12.00
733	Natural	1 lb.	9	.....	400	12.00
742	Natural	1 lb.	12	1	300	12.00
794	Black	1 lb.	4	.....	850	12.00
795	Black	1 lb.	6	3	600	12.00
796	Black	1 lb.	8	2	470	12.00
797	Black	1 lb.	9	.....	400	12.00
798	Black	1 lb.	12	1	300	12.00

DACRON* LACING CORD

Conforms to physical requirements of MIL-T-713A. Offers greater tensile strength with minimal stretch than nylon. Fungus, acid and abrasion resistant. Natural color. Supplied in 1-lb. tubes.

*Reg. DuPont trademark.

H.H.S. No.	Class	Test	Yardage	Net Each
722	1	78 lb.	750	$11.60
724	3	37 lb.	1500	12.70

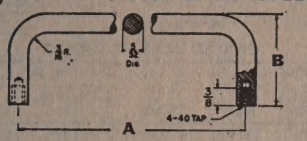
MATERIAL AND FINISH

Material and finish specifications are met by all panel handles, ferrules and hardware where applicable.

Materials: Brass—in accordance with Federal Spec. QQ-B-626, Composition 22, ½ hard. Aluminum—in accordance with Federal Spec. QQ-A-365, Composition A, Type 3. Steel—cold-rolled, in accordance with QQ-S-633b, Grade FS-1010.

Finishes: Nickel plate—polished, in accordance with Federal Spec. QQ-N-290, Class I, Type VI. Black oxide—in accordance with MIL-F-495A. Satin etch—commercial finish. Black anodize—in accordance with MIL-A-8625A. Optical black—color in accordance with Fed. Std. 595, type 37038; paint complies with Fed. Spec. TT-E-527.

5/32" DIA. PANEL HANDLES



5/32" dia. with internal 4-40 thread, 3/8" deep. Brass or aluminum.

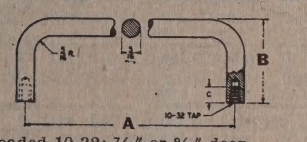
BRASS

H.H.S. No.	Dimensions A	B	Finish	Net Each
1632	1¼"	1"	Nickel plate	$1.25
1633	1¼"	1"	Black oxide	1.25
1636	2"	1"	Nickel plate	1.40
1637	2"	1"	Black oxide	1.40
1640	3"	1"	Nickel plate	1.45
1641	3"	1"	Black oxide	1.45

ALUMINUM

1634	1¼"	1"	Satin	$1.00
1635	1¼"	1"	Blk. anodize	1.15
1638	2"	1"	Satin	1.20
1639	2"	1"	Blk. anodize	1.35
1642	3"	1"	Satin	1.25
1643	3"	1"	Blk. anodize	1.40

5/16" DIA. PANEL HANDLES



Threaded 10-32; 7/16" or 9/16" deep.

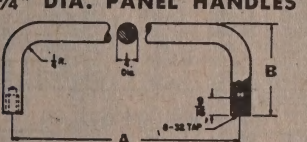
NICKEL-PLATED BRASS

H.H.S. No.	Dimensions A	B	C	Net Each
2050	3"	1 5/16"	7/16"	$1.60
2057	3"	1½"	9/16"	1.75
2056	4¼"	1½"	7/16"	1.85
2051	4 9/16"	1½"	9/16"	2.00
2052	6 7/16"	1¾"	9/16"	2.50

BLACK OXIDE BRASS

1601	3"	1 5/16"	7/16"	$1.60
1602	3"	1½"	9/16"	1.75
1604	4¼"	1½"	9/16"	1.85
1605	4 9/16"	1½"	9/16"	2.00
1606	6 7/16"	1¾"	9/16"	2.50

¼" DIA. PANEL HANDLES



Threaded 8-32; 9/16" deep.

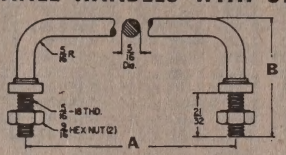
BRASS

H.H.S. No.	Dimensions A	B	Finish	Net Each
1616	2"	1½"	Nickel plate	$1.50
1617	2"	1½"	Black oxide	1.50
1620	3"	1½"	Nickel plate	1.55
1621	3"	1½"	Black oxide	1.55
1624	4"	1½"	Nickel plate	1.60
1625	4"	1½"	Black oxide	1.60
1628	6"	1½"	Nickel plate	1.80
1629	6"	1½"	Black oxide	1.80

ALUMINUM

1618	2"	1½"	Satin	$0.80
1619	2"	1½"	Blk. anodize	.85
1622	3"	1½"	Satin	.85
1623	3"	1½"	Blk. anodize	.95
1626	4"	1½"	Satin	.90
1627	4"	1½"	Blk. anodize	1.00
1630	6"	1½"	Satin	1.05
1631	6"	1½"	Blk. anodize	1.20

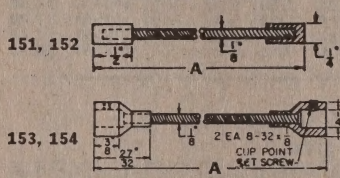
PANEL HANDLES WITH STUD



Brass panel handles, 5/16" dia., with male threaded stud (5/16-18 thread). With matching ferrules and 5/16" nickel-plated brass hex nuts.

H.H.S. No.	Dimensions A	B	Brass Finish	Net Each
1607	2"	2⅛"	Nickel plate	$2.20
1609	3"	2⅛"	Nickel plate	2.25
1611	4"	2⅛"	Nickel plate	2.50
2053	4¼"	2⅛"	Nickel plate	2.55
1614	6"	2 1/16"	Nickel plate	2.95
1608	2"	2⅛"	Black oxide	2.20
1610	3"	2⅛"	Black oxide	2.25
1612	4	2⅛"	Black oxide	2.50
1613	4¼"	2⅛"	Black oxide	2.55
1615	6"	2 1/16"	Black oxide	2.95

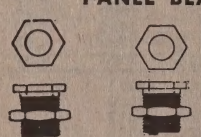
FLEXIBLE SHAFTS



High quality phosphor bronze non-magnetic, non-rusting flexible shafts. Remote control when necessary to mount variable capacitors and potentiometers away from panel at unusual angles. Turns at any angle up to 90°; free from backlash. With ¼" hub or ¼" coupler.

H.H.S. No.	Lgth. (A)	Description	Net per C
151	3"	With ¼" hub	$ 85.00
152	6"	With ¼" hub	120.00
153	3 5/8"	¼" coupler	200.00
154	6 5/8"	¼" coupler	215.00

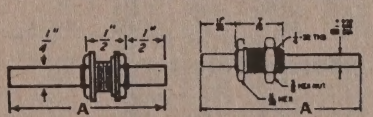
PANEL BEARINGS



Nickel-plated brass, supplied with hex nuts. Standard type (No. 119) is for ¼" shafts; miniature type (No. 184) is for ⅛" shafts.

H.H.S. No.	I.D.	Hex	L.	Thread	Net per C
119	.253"	7/16"	½"	3/8"-32	$22.00
184	.128"	11/32"	7/16"	¼"-32	22.00

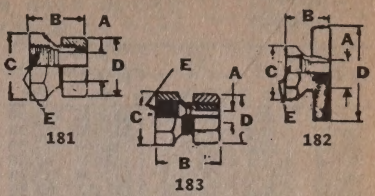
PANEL BEARING ASSEMBLIES



Standard types use H. H. Smith No. 119 panel bearing; miniature types for ⅛" shafts use No. 184 panel bearing. Nickel-plated brass.

H.H.S. No.	Type	Dimension A	Net per C
148	Standard	3"	$75.00
149	Standard	6"	80.00
1448	Miniature	2"	75.00
1449	Miniature	4"	80.00

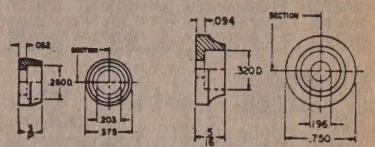
SHAFT LOCKS



Nickel plated brass; with lock nut. Standard types (No. 181 and 182) for ¼" shafts; miniature (No. 183) for ⅛" shaft. Length (dimension B) is ½".

H.H.S. No.	Dimensions A	C	D	E	Net per C
181	.253"	½"	7/16"	3/8"-32	$50.00
182	.253"	½"	1"	3/8"-32	95.00
183	.128"	11/32"	5/16"	¼"-32	34.00

FERRULES



Brass and aluminum ferrules, finished as indicated, to match panel handles listed.

NICKEL-PLATED BRASS

H.H.S. No.	Dimensions A	B	C	D	E	Net per C
1664	5/32"	.109"	⅛"	¼"	3/64"	$23.00
1668	¼"	.203"	3/16"	⅜"	1/16"	29.00
2055	5/16"	.219"	¼"	9/16"	1/16"	32.00
2054	5/16"	.196"	5/16"	¾"	3/32"	42.00

BLACK OXIDE BRASS

H.H.S. No.	Dimensions A	B	C	D	E	Net per C
1665	5/32"	.109"	⅛"	¼"	3/64"	$23.00
1669	¼"	.203"	3/16"	⅜"	1/16"	29.00
1673	5/16"	.219"	¼"	9/16"	1/16"	32.00
1672	5/16"	.196"	5/16"	¾"	3/32"	42.00

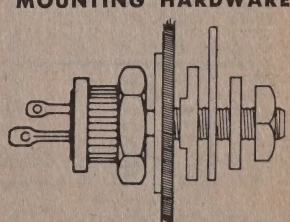
SATIN ETCH ALUMINUM

1666	5/32"	.109"	⅛"	¼"	3/64"	$23.00
1670	¼"	.203"	3/16"	⅜"	1/16"	25.00

BLACK ANODIZED ALUMINUM

1667	5/32"	.109"	⅛"	¼"	3/64"	$23.00
1671	¼"	.203"	3/16"	⅜"	1/16"	25.00

STUD TRANSISTOR MOUNTING HARDWARE



Mounting hardware for stud type transistors from #10 to #¼ stud. Standard package of 100.

H.H.S. No.	Description	Net per C
1153	#10 Mica washer	$3.40
1154	#¼ Mica washer	3.40
2666	#10 Nylon washer	2.20
2664	#¼ Nylon washer	3.30
1410-10	#10 Solder lug	1.50
1468	#¼ Solder lug	1.50
1152	#10 Metal washer	.71
1147	#¼ Metal washer	.71
1367	#10-32 Nut	1.82
1368	#¼-20 Nut	2.86
1369	#¼-28 Nut	1.29

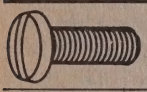
ROUND HEAD MACHINE SCREWS

CADMIUM-PLATED STEEL

C-PAK H.H.S. No.	Net	Size	M-PAK H.H.S. No.	Net	C-PAK H.H.S. No.	Net	Size	M-PAK H.H.S. No.	Net
1173C	$1.29	2-56 x 1/4"	1173M	$11.90	1001C	$1.27	6-32 x 3/8"	1001M	$11.70
1174C	1.39	2-56 x 1/2"	1174M	12.90	1002C	1.32	6-32 x 1/2"	1002M	12.20
1175C	1.47	2-56 x 3/4"	1175M	13.70	1355C	1.40	6-32 x 5/8"	1355M	13.00
1176C	1.54	3-48 x 3/4"	1176M	14.40	1356C	1.48	6-32 x 3/4"	1356M	13.80
1177C	1.39	4-36 x 1/4"	1177M	12.90	1357C	1.64	6-32 x 1"	1357M	15.40
1178C	1.43	4-36 x 3/8"	1178M	13.30	1358C	3.42	6-32 x 2"	1358M	33.20
1183C	1.48	4-36 x 1/2"	1183M	13.80	1006C	1.55	8-32 x 1/4"	1006M	14.50
1184C	1.56	4-36 x 5/8"	1184M	14.60	1007C	1.45	8-32 x 3/8"	1007M	13.50
1185C	1.59	4-36 x 3/4"	1185M	14.90	1008C	1.55	8-32 x 1/2"	1008M	14.50
1350C	1.39	4-40 x 1/4"	1350M	12.90	1010C	1.67	8-32 x 5/8"	1010M	15.70
1351C	1.43	4-40 x 3/8"	1351M	13.30	1359C	1.80	8-32 x 3/4"	1359M	17.00
1352C	1.48	4-40 x 1/2"	1352M	13.80	1360C	1.84	10-32 x 1/2"	1360M	17.40
1353C	1.56	4-40 x 5/8"	1353M	14.60	1361C	2.14	10-32 x 3/4"	1361M	20.40
1354C	1.59	4-40 x 3/4"	1354M	14.90	1362C	2.47	10-32 x 1"	1362M	23.70
1000C	1.23	6-32 x 1/4"	1000M	11.30					

NICKEL-PLATED BRASS

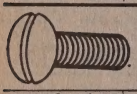
1044C	$2.17	4-36 x 1/4"	1044M	$26.20	1050C	$3.38	6-32 x 1/4"	1050M	$32.80
1045C	2.79	4-36 x 3/8"	1045M	26.90	1051C	3.61	6-32 x 3/8"	1051M	35.10
1046C	3.38	4-36 x 1/2"	1046M	32.80	1052C	4.05	6-32 x 1/2"	1052M	39.50
1047C	2.72	4-40 x 1/4"	1047M	26.20	1056C	4.98	8-32 x 1/4"	1056M	48.80
1048C	2.79	4-40 x 3/8"	1048M	26.90	1057C	5.27	8-32 x 3/8"	1057M	51.70
1049C	3.38	4-40 x 1/2"	1049M	32.80	1058C	5.96	8-32 x 1/2"	1058M	58.60



BINDING HEAD MACHINE SCREWS

CADMIUM-PLATED STEEL

1369C	$1.29	2-56 x 1/4"	1369M	$11.90	1376C	$1.40	6-32 x 5/8"	1376M	$13.00
1370C	1.39	2-56 x 1/2"	1370M	12.90	1377C	1.48	6-32 x 3/4"	1377M	13.80
1371C	1.43	2-56 x 5/8"	1371M	13.30	1428C	1.55	8-32 x 1/4"	1428M	14.50
1372C	1.39	4-40 x 1/4"	1372M	12.90	1378C	1.50	8-32 x 5/16"	1378M	14.00
1373C	1.48	4-40 x 1/2"	1373M	13.80	1429C	1.45	8-32 x 3/8"	1429M	13.50
1374C	1.60	4-40 x 3/4"	1374M	15.00	1430C	1.55	8-32 x 1/2"	1430M	14.50
1375C	1.40	6-32 x 3/16"	1375M	13.00	1379C	1.80	8-32 x 3/4"	1379M	17.00
1425C	1.23	6-32 x 1/4"	1425M	11.30	1380C	1.84	10-32 x 1/2"	1380M	17.40
1426C	1.27	6-32 x 3/8"	1426M	11.70	1381C	2.14	10-32 x 3/4"	1381M	20.40
1427C	1.32	6-32 x 1/2"	1427M	12.20					



OVAL HEAD RACK SCREWS

NICKEL-PLATED STEEL

1382C	$1.55	6-32 x 3/4"	1382M	$14.50	1111C	$2.53	10-32 x 1/2"	1111M	$24.30
1383C	1.96	8-32 x 3/4"	1383M	18.60	1112C	2.44	10-32 x 3/4"	1112M	23.40

NYLON SCREWS

Natural color; per MIL-P-20693A. Standard package, 100.

Size	Binding Head No.	Round Head No.	Fillister Head No.	Flat Head No.	Washer Head No.	Headless Set Screw No.	Net per 100
4-40 x 1/4"	2500	2520	2540	2560	2580	2480	$4.50
4-40 x 3/8"	2501	2521	.....	2561	2581	2481	4.50
4-40 x 1/2"	2502	2522	2542	2562	2582	2482	4.50
6-32 x 1/4"	2503	2523	.....	.....	2583	2483	4.50
6-32 x 3/8"	2504	2524	.....	.....	2584	2484	4.50
6-32 x 1/2"	2505	2525	2545	2565	2585	2485	4.50
6-32 x 5/8"	2506	2526	.....	.....	2586	2486	4.50
6-32 x 3/4"	2507	2527	2547	.....	2587	2487	4.50
8-32 x 1/4"	2509	2529	.....	.....	2589	2489	4.50
8-32 x 3/8"	2510	2530	.....	2570	2590	2490	4.50
8-32 x 1/2"	2511	2531	.....	.....	2591	2491	4.50
8-32 x 5/8"	2512	2532	.....	2572	2592	2492	4.50

OUR STOCK IS COMPLETE AND UP TO DATE.

WRITE FOR ADDITIONAL INFORMATION ON

ANY NEW OR UNLISTED ITEMS

NYLON HEX NUTS

Natural color; per MIL-P-20693A. Std. package, 100.

H.H.S. No.	Size	Net per 100
2554	4-40 x 1/4"	$8.00
2555	6-32 x 5/16"	8.00
2556	8-32 x 11/32"	8.00
2557	10-32 x 3/8"	8.00

HEXAGON NUTS

Standard package, 100.

NICKEL-PLATED BRASS

C-PAK H.H.S. No.	Net	Size	M-PAK H.H.S. No.	Net
1188C	$1.33	4-36 x 1/4"	1188M	$12.30
1168C	1.33	4-40 x 1/4"	1168M	12.30
1189C	1.33	6-32 x 1/4"	1189M	12.30
1190C	1.87	6-32 x 5/16"	1190M	17.70
1192C	1.79	8-32 x 5/16"	1192M	16.90
1193C	1.85	10-32 x 5/16"	1193M	17.30
1187C	2.60	1/4-32 x 7/16"	1187M	25.00

CADMIUM-PLATED STEEL

1363C	$1.47	2-56 x 3/16"	1363M	$13.70
1364C	1.47	3-48 x 3/16"	1364M	13.70
1365C	1.42	4-40 x 1/4"	1365M	13.20
1179C	1.42	6-32 x 1/4"	1179M	13.20
1180C	1.42	6-32 x 5/16"	1180M	13.20
1366C	1.42	8-32 x 1/4"	1366M	13.20
1181C	1.70	8-32 x 5/16"	1181M	16.00
1367C	1.82	10-32 x 3/8"	1367M	17.20
1368C	2.86	1/4-20 x 7/16"	1368M	27.60
1186C*	2.90	1/4-32 x 7/16"	1186M*	28.00

*Nickel-plated.

VOLUME CONTROL NUTS

NICKEL-PLATED BRASS

1195C	$2.33	3/8-32 x 1/2" x 3/32"	1195M	$22.30

NICKEL-PLATED STEEL

1199C	$2.50	3/8-32 x 1/2" x 3/32"	1199M	$22.00

TOGGLE SWITCH NUTS

NICKEL-PLATED HEX

1196C	$2.42	15/32" x 9/16" x 5/64"	1196M	$23.20

NICKEL-PLATED RING

1197C	$3.10	15/32" x 5/8" x 1/16"	1197M	$30.00

CADMIUM-PLATED TOOTH LOCKWASHERS

Internal

External

INTERNAL TYPE STEEL

1127C	$0.85	#4	1127M	$ 7.50
1128C	.83	#6	1128M	7.30
1129C	.83	#8	1129M	7.30
1130C	.85	#10	1130M	7.50
1132C	1.38	1/4"	1132M	12.80
1131C	1.85	3/8"	1131M	17.50
1145C†	1.98	3/8"	1145M†	18.80
1146C†	2.10	15/32"	1146M†	20.00

†Narrow rim.

EXTERNAL TYPE—STEEL

1139C	$0.85	#4	1139M	$ 7.50
1140C	.83	#6	1140M	7.30
1141C	.83	#8	1141M	7.30
1142C	.85	#10	1142M	7.50
1144C	1.38	1/4"	1144M	12.80
1143C	1.85	3/8"	1143M	17.50

NICKEL-PLATED WASHERS

Flat

Counter-sunk

FLAT TYPE STEEL

1138C	$0.71	#2 screw	1138M	$ 7.00
1149C	.71	#4 screw	1149M	7.00
1150C	.71	#6 screw	1150M	7.00
1151C	.71	#8 screw	1151M	7.00
1152C	.71	#10 screw	1152M	7.00
1147C	.71	1/4" screw	1147M	7.00
1148C	.71	3/8" screw	1148M	7.00

COUNTER-SUNK TYPE BRASS

1115C	$1.90	#6	1115M	$18.00
1116C	1.95	#8	1116M	18.50
1117C	2.00	#10	1117M	19.00

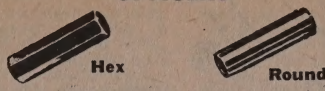
UNTHREADED HEXAGONAL

Length (Inches)	Waldom Number Clearance Hole #4 (.115")	#6 (.140")	#8 (.171")	Net per 100
¼" BRASS				
.125	60136	60151	60166	$ 6.25
.1875	60137	60152	60167	6.65
.250	60138	60153	60168	7.35
.3125	60139	60154	60169	8.70
.375	60140	60155	60170	9.00
.4375	60141	60156	60171	9.30
.500	60142	60157	60172	9.60
.5625	60143	60158	60173	10.55
.625	60144	60159	60174	11.15
.6875	60145	60160	60175	13.90
.750	60146	60161	60176	14.20
.8125	60147	60162	60177	15.35
.875	60148	60163	60178	17.15
.9375	60149	60164	60179	18.60
1.000	60150	60165	60180	19.60
¼" ALUMINUM				
.125	60536	60548	60560	$ 5.90
.250	60537	60549	60561	6.85
.375	60538	60550	60562	7.85
.500	60539	60551	60563	8.80
.625	60540	60552	60564	9.80
.750	60541	60553	60565	10.80
.875	60542	60554	60566	11.75
1.000	60543	60555	60567	12.75
1.250	60544	60556	60568	23.50
1.500	60545	60557	60569	24.50
1.750	60546	60558	60570	25.50
2.000	60547	60559	60571	26.45
⅜" BRASS				
.125	60226	60241	60256	$10.20
.1875	60227	60242	60257	11.65
.250	60228	60243	60258	12.65
.3125	60229	60244	60259	14.50
.375	60230	60245	60260	15.85
.4375	60231	60246	60261	19.40
.500	60232	60247	60262	20.00
.5625	60233	60248	60263	21.00
.625	60234	60249	60264	23.20
.6875	60235	60250	60265	23.60
.750	60236	60251	60266	24.60
.8125	60237	60252	60267	25.80
.875	60238	60253	60268	29.00
.9375	60239	60254	60269	29.40
1.000	60240	60255	60270	32.00

UNTHREADED ROUND

¼" BRASS				
.125	60001	60016	60031	$ 5.60
.1875	60002	60017	60032	6.05
.250	60003	60018	60033	6.85
.3125	60004	60019	60034	7.75
.375	60005	60020	60035	8.25
.4375	60006	60021	60036	9.00
.500	60007	60022	60037	9.20
.5625	60008	60023	60038	10.50
.625	60009	60024	60039	11.00
.6875	60010	60025	60040	13.75
.750	60011	60026	60041	14.20
.8125	60012	60027	60042	14.70
.875	60013	60028	60043	16.00
.9375	60014	60029	60044	16.50
1.000	60015	60030	60045	18.25
¼" ALUMINUM				
.125	60400	60418	60436	$ 4.90
.250	60401	60419	60437	5.90
.375	60402	60420	60438	6.85
.500	60403	60421	60439	7.85
.625	60404	60422	60440	8.80
.750	60405	60423	60441	9.80
.875	60406	60424	60442	10.75
1.000	60407	60425	60443	11.75
1.250	60408	60426	60444	12.75
1.500	60409	60427	60445	23.50
1.750	60410	60428	60446	24.50
2.000	60411	60429	60447	25.50
2.500	60412	60430	60448	26.45
3.000	60413	60431	60449	27.45
3.500	60414	60432	60450	31.35
4.000	60415	60433	60451	36.25
5.000	60416	60434	60452	37.25
6.000	60417	60435	60453	47.00
¼" FIBRE				
.125	60271	60286	60301	$ 5.10
.1875	60272	60287	60302	5.65
.250	60273	60288	60303	6.15
.3125	60274	60289	60304	6.95
.375	60275	60290	60305	7.65
.4375	60276	60291	60306	8.35
.500	60277	60292	60307	9.00
.5625	60278	60293	60308	10.00
.625	60279	60294	60309	10.40

SPACERS



¼" FIBRE (cont)				
.6875	60280	60295	60310	$11.45
.750	60281	60296	60311	12.35
.8125	60282	60297	60312	13.50
.875	60283	60298	60313	14.20
.9375	60284	60299	60314	14.90
1.000	60285	60300	60315	15.20
⅜" BRASS				
.125	60091	60106	60121	$10.00
.1875	60092	60107	60122	11.65
.250	60093	60108	60123	12.25
.3125	60094	60109	60124	13.10
.375	60095	60110	60125	15.55
.4375	60096	60111	60126	16.55
.500	60097	60112	60127	16.90
.5625	60098	60113	60128	21.35
.625	60099	60114	60129	20.30
.6875	60100	60115	60130	22.85
.750	60101	60116	60131	20.20
.8125	60102	60117	60132	23.60
.875	60103	60118	60133	26.80
.9375	60104	60119	60134	27.60
1.000	60105	60120	60135	28.70

THREADED HEXAGONAL

Length (Inches)	Waldom Number Internal Thread #4-40	#6-32	#8-32	Net per 100
¼" BRASS				
.125	60181	60196	60211	$ 7.35
.1875	60182	60197	60212	7.85
.250	60183	60198	60213	8.50
.3125	60184	60199	60214	9.20
.375	60185	60200	60215	10.35
.4375	60186	60201	60216	11.15
.500	60187	60202	60217	12.15
.5625	60188	60203	60218	14.20
.625	60189	60204	60219	17.00
.6875	60190	60205	60220	17.90
.750	60191	60206	60221	18.90
.8125	60192	60207	60222	19.60
.875	60193	60208	60223	19.90
.9375	60194	60209	60224	20.85
1.000	60195	60210	60225	22.50
¼" ALUMINUM				
.125	60584	60600	60616	$ 6.85
.250	60585	60601	60617	7.85
.375	60586	60602	60618	8.80
.500	60587	60603	60619	9.80
.625	60588	60604	60620	10.80
.750	60589	60605	60621	11.75
.875	60590	60606	60622	12.75
1.000	60591	60607	60623	13.70
1.250	60592	60608	60624	15.70
1.500	60593	60609	60625	17.65
1.750	60594	60610	60626	19.60
2.000	60595	60611	60627	21.55
2.500	60596	60612	60628	23.50
3.000	60597	60613	60629	25.50
3.500	60598	60614	60630	27.45
4.000	60599	60615	60631	34.30

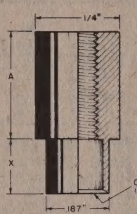
THREADED ROUND

¼" BRASS				
.125	60046	60061	60076	$ 7.25
.1875	60047	60062	60077	7.50
.250	60048	60063	60078	7.80
.3125	60049	60064	60079	8.30
.375	60050	60065	60080	9.30
.4375	60051	60066	60081	9.75
.500	60052	60067	60082	12.10
.5625	60053	60068	60083	12.90
.625	60054	60069	60084	13.40
.6875	60055	60070	60085	17.40
.750	60056	60071	60086	17.65
.8125	60057	60072	60087	17.80
.875	60058	60073	60088	18.70
.9375	60059	60074	60089	19.25
1.000	60060	60075	60090	20.50
¼" ALUMINUM				
.125	60472	60488	60504	$ 5.90
.250	60473	60489	60505	6.85
.375	60474	60490	60506	7.85
.500	60475	60491	60507	8.80
.625	60476	60492	60508	9.80
.750	60477	60493	60509	10.80
.875	60478	60494	60510	11.75
1.000	60479	60495	60511	13.70
1.250	60480	60496	60512	15.65
1.500	60481	60497	60513	17.65
1.750	60482	60498	60514	19.60
2.000	60483	60499	60515	21.55
2.500	60484	60500	60516	23.50
3.000	60485	60501	60517	25.50
3.500	60486	60502	60518	27.45
4.000	60487	60503	60519	35.30

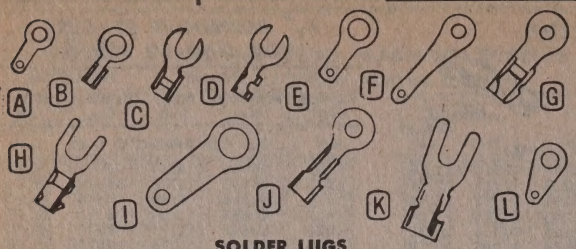
5/16" ALUMINUM SPACERS FOR #10-32 SCREWS

Length (In.)	Round Waldom No.	Net/ 100	Hexagonal Waldom No.	Net/ 100
.200" CLEARANCE I.D.				
.125	60454	$ 6.85	60572	$ 8.80
.250	60455	7.85	60573	9.80
.375	60456	8.80	60574	10.80
.500	60457	9.80	60575	11.75
.625	60458	10.75	60576	12.75
.750	60459	11.75	60577	13.70
.875	60460	12.75	60578	14.70
1.000	60461	13.70	60579	15.70
1.250	60462	14.70	60580	26.45
1.500	60463	26.45	60581	27.45
1.750	60464	27.45	60582	28.40
2.000	60465	28.40	60583	29.40
2.500	60466	29.40	.....	.....
3.000	60467	30.40	.....	.....
3.500	60468	31.35	.....	.....
4.000	60469	32.35	.....	.....
5.000	60470	33.30	.....	.....
6.000	60471	34.30	.....	.....
THREADED #10-32				
.125	60520	$ 7.85	60632	$ 9.80
.250	60521	8.80	60633	10.80
.375	60522	9.80	60634	11.75
.500	60523	10.80	60635	12.75
.625	60524	11.75	60636	13.70
.750	60525	12.75	60637	14.70
.875	60526	13.70	60638	15.70
1.000	60527	14.70	60639	16.65
1.250	60528	15.65	60640	18.60
1.500	60529	17.65	60641	20.60
1.750	60530	19.60	60642	22.55
2.000	60531	21.55	60643	24.50
2.500	60532	23.50	60644	26.45
3.000	60533	25.50	60645	28.40
3.500	60534	27.45	60646	30.40
4.000	60535	29.40	60647	32.35

THREADED SWAGE-TYPE STANDOFFS



Length Standoff "A"	(In.) Stud "X"	Waldom Numbers #4-40	#6-32	#8-32	Net per 100
ROUND					
¼	.105	60648	60666	60684	$10.20
¼	.135	60649	60667	60685	10.20
¼	.165	60650	60668	60686	10.20
⅜	.105	60651	60669	60687	11.75
⅜	.135	60652	60670	60688	11.75
⅜	.165	60653	60671	60689	11.75
½	.105	60654	60672	60690	14.40
½	.135	60655	60673	60691	14.30
½	.175	60656	60674	60692	14.30
⅝	.105	60657	60675	60693	15.10
⅝	.135	60658	60676	60694	15.10
⅝	.165	60659	60677	60695	15.10
¾	.105	60660	60678	60696	16.65
¾	.135	60661	60679	60697	16.65
¾	.165	60662	60680	60698	16.65
1	.105	60663	60681	60699	21.60
1	.135	60664	60682	60700	21.60
1	.165	60665	60683	60701	21.60
HEXAGONAL					
¼	.105	60702	60720	60738	$10.80
¼	.135	60703	60721	60739	10.80
¼	.165	60704	60722	60740	10.80
⅜	.105	60705	60723	60741	12.40
⅜	.135	60706	60724	60742	12.40
⅜	.165	60707	60725	60743	12.40
½	.105	60708	60726	60744	15.10
½	.135	60709	60727	60745	15.10
½	.175	60710	60728	60746	15.10
⅝	.105	60711	60729	60747	15.70
⅝	.135	60712	60730	60748	15.70
⅝	.165	60713	60731	60749	15.70
¾	.105	60714	60732	60750	17.35
¾	.135	60715	60733	60751	17.35
¾	.165	60716	60734	60752	17.35
1	.105	60717	60735	60753	22.25
1	.135	60718	60736	60754	22.25
1	.165	60719	60737	60755	22.25



SOLDER LUGS

Brass hot tin-dipped unless otherwise noted.

Waldom No.	Fig.	Thick, In.	Hole Size	Lgth. In.	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
T-151	A	.020	#6	1/2	$1.60	$10.10	$ 8.70
T-152	A	.020	#8	13/16	2.35	16.40	14.15
T-153	A	.020	#10	13/16	2.40	16.45	14.20
T-154	L	.020	#6	9/16	1.70	10.90	9.40
T-156*	B	.032	#6	1/2	1.90	12.65	10.90
T-157	C	.020	#8	41/64	2.35	16.10	13.85
T-158	D	.020	#6	21/32	2.20	14.80	12.75
T-159	D	.020	#8	21/32	2.35	16.35	14.05
T-162	E	.015	#8	47/64	2.60	18.25	15.75
T-163	F	.025	#6	1	2.40	16.55	14.25
T-164	F	.025	#8	1	2.40	16.45	14.15
T-166*	G	.020	#6	15/16	4.55	34.35	29.65
T-167*	G	.020	#8	15/16	4.55	34.40	29.65
T-168*	G	.020	#10	15/16	4.55	34.35	29.60
T-170	H	.020	3/16"	25/32	2.95	21.10	18.15
T-187	J	.032	#8	15/16	5.00	38.25	32.95
T-188	J	.032	#10	15/16	5.45	42.05	36.25
T-193	K	.032	#8	1	6.15	47.80	41.20
T-224*	L	.015	#8	17/32	2.55	17.80	15.35
T-225	D	.020	#10	21/32	2.80	19.90	17.15
T-226*	B	.020	#4	9/16	1.85	12.20	10.50
T-227	B	.020	#8	21/32	3.25	23.55	20.30
T-228	B	.020	#10	21/32	3.00	21.75	18.75
T-251*	A	.015	#2	21/64	1.60	9.80	8.45

*Copper hot tin-dipped.

METAL CABLE CLAMPS (FIG. O)

Mounting hole, .144". Material (Mtl.) abbreviations: B, brass, hot tin-dipped; S, steel, cadmium plated.

Waldom No.	Mtl., In.	Ht., In.	W., In.	Wire Hold Area	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000 Up
C-201	.020B	7/16	1/4	3/32"	$1.80	$11.80	$10.15
C-202	.032S	3/8	3/8	10/64"	1.95	12.80	11.00
C-203	.032S	11/16	3/8	1/4"	2.05	13.60	11.75
C-204	.032S	15/16	3/8	10/32"	2.35	16.00	13.80

NYLON AND BUTYRATE CABLE CLAMPS

Nylon Clamps: Ideal for temperatures below 300° F (150° C). Meet MIL-P-17091A, Amend. 2, MIL-P-17091B/MIL-P-20693, Type 1, MIL-STD-242A and B (Ships)/MS-39014 (Ord). Mtg. hole .167" dia. for 3/8" wide types; 13/64", others.

Butyrate Clamps: For indoor or ethyl cellulose replacement. Material approved per MIL Spec. L-P-349a, Type III, Class MH. Ultra-violet stabilized for weather extremes. Mtg. hole 13/64" dia.

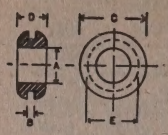
NY-GRIP® NYLON CABLE CLAMPS

Waldom No.	D In.	W., In.	E In.	Std. Pkg.	Net/ Std. Pkg.	Per 1000 1000-4999	Per 1000 5000 Up
CCN-31	1/8	3/8	.310	100	$3.05	$22.10	$19.00
CCN-32	3/16	3/8	.373	100	3.20	23.30	20.10
CCN-33	1/4	3/8	.407	100	3.30	24.25	20.90
CCN-34	5/16	3/8	.448	50	3.80	24.75	21.30
CCN-35	3/8	3/8	.479	50	3.85	25.30	21.80
CCN-36	7/16	3/8	.510	50	3.95	26.15	22.50
CCN-37	1/2	3/8	.542	25	4.00	26.75	23.00
CCN-38	9/16	1/2	.623	25	4.85	27.15	23.40
CCN-39	5/8	1/2	.654	25	5.00	28.15	24.25
CCN-40	11/16	1/2	.752	20	6.85	40.25	34.70
CCN-41	3/4	1/2	.783	20	6.90	40.50	34.90
CCN-42	7/8	1/2	.845	20	7.25	43.60	37.55
CCN-43	1	1/2	.908	15	10.05	61.25	52.75

BUTYRATE CABLE CLAMPS

CCB-1	1/8	1/2	.360	100	$3.90	$29.20	$25.15
CCB-2	3/16	1/2	.423	100	3.95	29.40	25.30
CCB-3	1/4	1/2	.457	100	4.40	29.70	25.60
CCB-4	5/16	1/2	.498	50	4.45	30.40	26.15
CCB-5	3/8	1/2	.529	50	4.70	32.40	27.90
CCB-6	7/16	1/2	.560	40	4.95	32.75	28.25
CCB-7	1/2	1/2	.592	40	4.65	30.20	26.05
CCB-8	9/16	1/2	.623	30	5.40	33.60	28.95
CCB-9	5/8	1/2	.654	25	5.80	34.85	30.05
CCB-10	11/16	1/2	.752	20	6.50	37.20	32.05
CCB-11	3/4	1/2	.783	20	6.85	40.15	34.60
CCB-12	7/8	1/2	.845	20	7.25	43.50	37.45
CCB-13	1	1/2	.908	15	8.15	45.30	39.05
CCB-14	1 1/8	1/2	.970	15	9.00	52.60	45.35
CCB-15	1 1/4	1/2	1.062	10	11.15	59.25	51.05

THERE ARE OVER 4000 ITEMS IN THE WALDOM LINE. ASK FOR CATALOG #7G7.



VINYL GROMMETS

Waldom No.	A In.	B In.	C In.	D In.	E In.	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
G-401	1/8	1/16	11/32	3/16	1/4	$2.00	$13.10	$11.30
G-402	3/16	1/16	7/16	7/32	5/16	2.25	15.20	13.10
G-403	1/4	1/16	9/16	1/4	3/8	2.50	17.45	15.00
G-404	5/16	1/16	5/8	1/4	7/16	2.80	19.75	17.00
G-405	3/8	1/16	5/8	1/4	1/2	2.75	19.60	16.85
G-406	1/2	1/16	13/16	9/32	5/8	4.80	33.05	28.45
G-407	5/8	1/16	1 1/8	9/32	7/8	7.20	46.40	40.00

*Pkg. of 50. †Pkg. of 25.

RUBBER GROMMETS

G-300	1/8	1/16	11/32	3/16	1/4	$ 2.50	$17.60	$15.15
G-301	5/16	1/16	9/16	3/16	15/32	3.25	23.55	20.30
G-302	3/8	1/16	11/32	9/32	1/2	5.30	37.25	32.10
G-305	3/16	1/16	7/16	7/32	5/16	3.05	21.90	18.90
G-307*	7/16	3/64	3/4	1/4	19/32	5.60	40.00	34.45
G-309	11/32	1/16	5/8	5/16	15/32	3.30	24.25	20.90
G-311†	5/8	1/16	1 1/8	5/16	7/8	10.20	71.60	61.65

*Quantity—50. †Quantity—25.

VOLUME CONTROL AND TOGGLE SWITCH MOUNTING HEX NUTS

Waldom No.	Size Thd. x Lgth. (Inches)	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
F-565	3/8-32 x 1/2 x 3/32	$5.60	$43.15	$37.20
F-566	15/32-32 x 9/16 x 5/64	3.70	27.40	23.60
F-567*	.475-32 x 19/32 x 1/16	5.20	39.85	34.30

*Knurled ring nut .

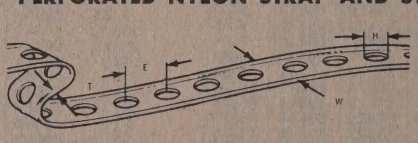
RUBBER BUMPERS

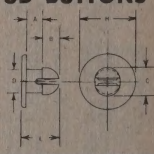
For mounting on all types of electronic equipment. Prevents vibration and protects surfaces under equipment from being marred. Button type installs in pierced hole.

RECESSED SCREW TYPE

Waldom No.	A In.	B In.	C In.	D In.	E In.	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
B-321	1/2	1/4	5/32	1/4	1/8	$3.65	$27.10	$23.35
B-322	3/4	1/4	1/8	1/4	1/8	8.10	53.95	46.50
B-323	5/8	3/8	7/32	1/4	1/8	8.20	54.60	47.05
B-324	3/4	3/8	7/32	1/4	1/8	8.50	57.25	49.35
BUTTON TYPE								
B-361	3/8	3/8	17/64	3/16	.04	$5.00	$38.20	$32.90
B-362	1/2	7/16	11/32	1/4	.04	4.70	35.85	30.90
B-363	5/8	9/16	15/32	5/16	.04	8.80	59.70	51.40

PERFORATED NYLON STRAP AND STUD BUTTONS



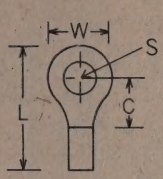


Waldom No.	W	T	H	E	Average Breaking Load (lbs.)	Net Each 25 ft. Roll	Net Each 50 ft. Roll
NYLON STRAP							
NS-932-	9/32	.032	.096	3/16	23	$20.65	$37.95
NS-38-	3/8	.040	.167	5/16	51	16.15	29.60
NS-12-	1/2	.060	.203	25/64	107	16.25	29.35

Waldom No.	Use With	H	A	B	C	D	L	Net Per 100 100-999	Net Per 1000 1000-Up
STUD BUTTONS									
SB-4	NS-932	9/32	.093	.078	.105	.093	.206	$4.60	$34.85
SB-5	NS-38	11/32	.125	.137	.202	.165	.297	6.20	48.15
SB-6	NS-12	15/32	.156	.153	.238	.200	.359	6.70	52.10

SOLDERLESS TERMINALS AND CONNECTORS

Solderless terminals constructed of the finest materials; annealed electrolytic copper and electro-tin plated. One-piece design is internally serrated, has strength gussets and chamfered edge. S-1000 Series non-insulated terminals make positive connections, save labor, provide uniformly reliable connection. T-2000 Series has all advantages of S-1000 Series terminals plus permanently attached, rigid vinyl plastic insulating sleeve. 26-24 wire-range terminals have 1/8" length barrel. All others shown have standard 1/4" barrel. Also available with short barrel, 3/32" length. For short barrel add prefix letter S to part number; e.g., SS-1925, or ST-2099. Same prices prevail. Terminals also available with brazed barrel, copper sleeve, or copper sleeve with nylon insulation. UL and CSA Recognized. For prices, see Price Code tables on following page.



Basic Dimensions

Ring Tongue

Block Spade

Flanged Block Spade

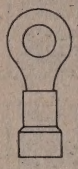
Round Spade

Flanged Round Spade

Non-Insulated Butted Seam

Insulated

Non-Insulated Brazed Seam


Non-Insulated w/Ins. Grip

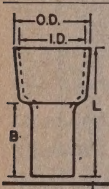
Insulated w/Ins. Grip

Wire Range	Dimensions, Ins. Stud S	Width W	Clearance C	Non-Insulated Butted Seam Waldom No.	Lgth. L	Vinyl Insulated Waldom No.	Lgth. L	Non-Insulated Brazed Seam Waldom No.	Lgth. L	Non-Insulated w/Ins. Grip Waldom No.	Lgth. L	Nylon Insulated w/Ins. Grip Waldom No.	Lgth. L	* Price Code
RING TONGUE TERMINALS														
26-24	0	9/64	7/64	S-1925	5/16					D-4925	7/16	N-5925	15/32	A
26-24	1-2	9/64	7/64	S-1926	5/16					D-4926	7/16	N-5926	15/32	A
26-24	3-4	13/64	7/32	S-1929	29/64					D-4929	37/64	N-5929	39/64	A
26-24	5-6	13/64	7/32	S-1930	29/64					D-4930	37/64	N-5930	39/64	A
26-24	8	1/4	9/32	S-1932	17/32					D-4932	21/32	N-5932	11/16	A
26-24	10	1/4	9/32	S-1933	17/32					D-4933	21/32	N-5933	11/16	A
22-18	1-2	1/4	7/32	S-1099	19/32	T-2099	25/32	B-3099	19/32	D-4099	47/64	N-5099	25/32	A
22-18	3-4	1/4	7/32	S-1047	19/32	T-2047	25/32	B-3047	19/32	D-4047	47/64	N-5047	25/32	A
22-18	3-4	21/64	1/4	S-1096	11/16	T-2096	7/8	B-3096	11/16	D-4096	53/64	N-5096	7/8	A
22-18	5-6	1/4	7/32	S-1001	19/32	T-2001	25/32	B-3001	19/32	D-4001	47/64	N-5001	25/32	A
22-18	5-6	1/4	9/32	S-1700	11/16	T-2700	57/64	B-3700	11/16	D-4700	27/32	N-5700	57/64	A
22-18	5-6	21/64	1/4	S-1002	11/16	T-2002	7/8	B-3002	11/16	D-4002	53/64	N-5002	7/8	A
22-18	5-6	5/16	9/32	S-1103	47/64	T-2103	59/64	B-3103	47/64	D-4103	7/8	N-5103	59/64	A
22-18	8	1/4	7/32	S-1097	19/32	T-2097	25/32	B-3097	19/32	D-4097	47/64	N-5097	25/32	A
22-18	8	21/64	1/4	S-1021	11/16	T-2021	7/8	B-3021	11/16	D-4021	53/64	N-5021	7/8	A
22-18	8	5/16	9/32	S-1701	47/64	T-2701	59/64	B-3701	47/64	D-4701	7/8	N-5701	59/64	A
22-18	10	21/64	1/4	S-1098	11/16	T-2098	7/8	B-3098	11/16	D-4098	53/64	N-5098	7/8	A
22-18	10	5/16	9/32	S-1003	47/64	T-2003	59/64	B-3003	47/64	D-4003	7/8	N-5003	59/64	A
22-18	1/4	15/32	13/32	S-1004	57/64	T-2004	1 3/64	B-3004	57/64	D-4004	1	N-5004	1 3/64	B
22-18	1/4	9/16	13/32	S-1801	15/16	T-2801	1 3/32	B-3801	15/16	D-4801	1 3/64	N-5801	1 3/32	B
22-18	5/16	15/32	13/32	S-1005	57/64	T-2005	1 3/64	B-3005	57/64	D-4005	1	N-5005	1 3/64	B
22-18	5/16	9/16	13/32	S-1802	15/16	T-2802	1 3/32	B-3802	15/16	D-4802	1 3/64	N-5802	1 3/32	B
22-18	3/8	9/16	13/32	S-1143	15/16	T-2143	1 3/32	B-3143	15/16	D-4143	1 3/64	N-5143	1 3/32	B
16-14	1-2	1/4	7/32	S-1102	19/32	T-2102	25/32	B-3102	19/32	D-4102	47/64	N-5102	25/32	A
16-14	3-4	1/4	7/32	S-1048	19/32	T-2048	25/32	B-3048	19/32	D-4048	47/64	N-5048	25/32	A
16-14	3-4	21/64	1/4	S-1823	11/16	T-2823	7/8	B-3823	11/16	D-4823	53/64	N-5823	7/8	A
16-14	5-6	1/4	7/32	S-1006	19/32	T-2006	25/32	B-3006	19/32	D-4006	47/64	N-5006	25/32	A
16-14	5-6	21/64	1/4	S-1007	11/16	T-2007	7/8	B-3007	11/16	D-4007	53/64	N-5007	7/8	A
16-14	5-6	5/16	9/32	S-1092	47/64	T-2092	59/64	B-3092	47/64	D-4092	7/8	N-5092	59/64	A
16-14	8	1/4	7/32	S-1824	19/32	T-2824	25/32	B-3824	19/32	D-4824	47/64	N-5824	25/32	A
16-14	8	21/64	1/4	S-1024	11/16	T-2024	7/8	B-3024	11/16	D-4024	53/64	N-5024	7/8	A
16-14	8	5/16	9/32	S-1093	47/64	T-2093	59/64	B-3093	47/64	D-4093	7/8	N-5093	59/64	A
16-14	10	21/64	1/4	S-1008	11/16	T-2008	7/8	B-3008	11/16	D-4008	53/64	N-5008	7/8	A
16-14	10	5/16	9/32	S-1094	47/64	T-2094	59/64	B-3094	47/64	D-4094	7/8	N-5094	59/64	A
16-14	1/4	15/32	13/32	S-1009	57/64	T-2009	1 3/64	B-3009	57/64	D-4009	1	N-5009	1 3/64	B
16-14	1/4	9/16	13/32	S-1826	15/16	T-2826	1 3/32	B-3826	15/16	D-4826	1 3/64	N-5826	1 3/32	B
16-14	5/16	15/32	13/32	S-1041	57/64	T-2041	1 3/64	B-3041	57/64	D-4041	1	N-5041	1 3/64	B
16-14	5/16	9/16	13/32	S-1827	15/16	T-2827	1 3/32	B-3827	15/16	D-4827	1 3/64	N-5827	1 3/32	B
16-14	3/8	9/16	13/32	S-1147	15/16	T-2147	1 3/32	B-3147	15/16	D-4147	1 3/64	N-5147	1 3/32	B
12-10	3-4	1/4	9/32	S-1148	47/64	T-2148	1 1/64	B-3148	47/64	D-4148	31/32	N-5148	1 1/64	B
12-10	5-6	1/4	9/32	S-1149	47/64	T-2149	1 1/64	B-3149	47/64	D-4149	31/32	N-5149	1 1/64	B
12-10	5-6	3/8	9/32	S-1049	47/64	T-2049	1 1/64	B-3049	47/64	D-4049	31/32	N-5049	1 1/64	B
12-10	8	1/4	9/32	S-1150	47/64	T-2150	1 1/64	B-3150	47/64	D-4150	31/32	N-5150	1 1/64	B
12-10	8	3/8	9/32	S-1050	47/64	T-2050	1 1/64	B-3050	47/64	D-4050	31/32	N-5050	1 1/64	B
12-10	10	3/8	9/32	S-1011	47/64	T-2011	1 1/64	B-3011	47/64	D-4011	31/32	N-5011	1 1/64	B
12-10	1/4	17/32	7/16	S-1100	61/64	T-2100	1 15/64	B-3100	61/64	D-4100	1 3/16	N-5100	1 15/64	C
12-10	1/4	39/64	7/16	S-1012	31/32	T-2012	1 9/32	B-3012	31/32	D-4012	1 15/64	N-5012	1 9/32	C
12-10	5/16	17/32	7/16	S-1101	61/64	T-2101	1 15/64	B-3101	61/64	D-4101	1 3/16	N-5101	1 15/64	C
12-10	5/16	39/64	7/16	S-1042	31/32	T-2042	1 9/32	B-3042	31/32	D-4042	1 15/64	N-5042	1 9/32	C
12-10	3/8	17/32	7/16	S-1013	61/64	T-2013	1 15/64	B-3013	61/64	D-4013	1 3/16	N-5013	1 15/64	C
12-10	3/8	39/64	7/16	S-1153	31/32	T-2153	1 9/32	B-3153	31/32	D-4153	1 15/64	N-5153	1 9/32	C
12-10	7/16	3/4	37/64	S-1154	1 13/64	T-2154	1 15/32	B-3154	1 13/64	D-4154	1 27/64	N-5154	1 15/32	N
12-10	1/2	3/4	37/64	S-1155	1 13/64	T-2155	1 15/32	B-3155	1 13/64	D-4155	1 27/64	N-5155	1 15/32	N
BLOCK SPADE TERMINALS														
22-18	4-6	1/4	1/4	S-1118	21/32	T-2118	27/32	B-3118	21/32	D-4118	51/64	N-5118	27/32	A
22-18	4-6	19/64	1/4	S-1014	21/32	T-2014	27/32	B-3014	21/32	D-4014	51/64	N-5014	27/32	A
22-18	8	19/64	1/4	S-1030	21/32	T-2030	27/32	B-3030	21/32	D-4030	51/64	N-5030	27/32	A
22-18	10	19/64	1/4	S-1032	21/32	T-2032	27/32	B-3032	21/32	D-4032	51/64	N-5032	27/32	A
16-14	4-6	1/4	1/4	S-1123	21/32	T-2123	27/32	B-3123	21/32	D-4123	51/64	N-5123	27/32	A
16-14	4-6	19/64	1/4	S-1015	21/32	T-2015	27/32	B-3015	21/32	D-4015	51/64	N-5015	27/32	A
16-14	8	19/64	1/4	S-1033	21/32	T-2033	27/32	B-3033	21/32	D-4033	51/64	N-5033	27/32	A
16-14	10	19/64	1/4	S-1702	21/32	T-2702	27/32	B-3702	21/32	D-4702	51/64	N-5702	27/32	A
12-10	4-6	5/16	9/32	S-1706	47/64	T-2706	1 1/64	B-3706	47/64	D-4706	31/32	N-5706	1 1/64	B
12-10	8	5/16	9/32	S-1707	47/64	T-2707	1 1/64	B-3707	47/64	D-4707	31/32	N-5707	1 1/64	B
12-10	10	5/16	9/32	S-1708	47/64	T-2708	1 1/64	B-3708	47/64	D-4708	31/32	N-5708	1 1/64	B

LISTING CONTINUED ON NEXT PAGE FOR PRICES, SEE PRICE CODE TABLE ON NEXT PAGE

SOLDERLESS CONNECTORS AND TERMINALS (CONTINUED)

Wire Range	Dimensions, Ins. Stud S	Width W	Clearance C	Non-Insulated Butted Seam Waldom No.	Lgth. L	Vinyl Insulated Waldom No.	Lgth. L	Non-Insulated Brazed Seam Waldom No.	Lgth. L	Non-Insulated w/Ins. Grip Waldom No.	Lgth. L	Nylon Insulated w/Ins. Grip Waldom No.	Lgth. L	* Price Code
FLANGED BLOCK SPADE TERMINALS														
22-18	4-6	1/4	1/4	S-1717	21/32	T-2717	27/32	B-3717	21/32	D-4717	51/64	N-5717	27/32	A
22-18	4-6	19/64	1/4	S-1080	21/32	T-2080	27/32	B-3080	21/32	D-4080	51/64	N-5080	27/32	A
22-18	8	19/64	1/4	S-1081	21/32	T-2081	27/32	B-3081	21/32	D-4081	51/64	N-5081	27/32	A
22-18	10	19/64	1/4	S-1082	21/32	T-2082	27/32	B-3082	21/32	D-4082	51/64	N-5082	27/32	A
16-14	4-6	1/4	1/4	S-1718	9/16	T-2718	27/32	B-3718	21/32	D-4718	51/64	N-5718	27/32	A
16-14	4-6	19/64	1/4	S-1083	9/16	T-2083	27/32	B-3083	21/32	D-4083	51/64	N-5083	27/32	A
16-14	8	19/64	1/4	S-1084	9/16	T-2084	27/32	B-3084	21/32	D-4084	51/64	N-5084	27/32	A
16-14	10	19/64	1/4	S-1085	9/16	T-2085	27/32	B-3085	21/32	D-4085	51/64	N-5085	27/32	A
12-10	4-6	5/16	9/32	S-1722	47/64	T-2722	1 1/64	B-3722	47/64	D-4722	31/32	N-5722	1 1/64	B
12-10	8	5/16	9/32	S-1723	47/64	T-2723	1 1/64	B-3723	47/64	D-4723	31/32	N-5723	1 1/64	B
12-10	10	5/16	9/32	S-1724	47/64	T-2724	1 1/64	B-3724	47/64	D-4724	31/32	N-5724	1 1/64	B
ROUND SPADE TERMINALS														
26-24	0	9/64	7/64	S-1938	5/16	.....				D-4938	7/16	N-5938	15/32	A
26-24	3-4	13/64	7/32	S-1934	29/64	.....				D-4934	37/64	N-5934	39/64	A
26-24	5-6	1/4	9/32	S-1940	17/32	.....				D-4940	21/32	N-5940	1 1/16	A
22-18	4-6	21/64	1/4	S-1029	1 1/16	T-2029	7/8	B-3029	1 1/16	D-4029	53/64	N-5029	7/8	A
22-18	4-6	23/64	9/32	S-1551	21/32	T-2501	15/16	B-3501	23/32	D-4501	57/64	N-5501	15/16	A
22-18	8	21/64	1/4	S-1031	1 1/16	T-2031	7/8	B-3031	1 1/16	D-4031	53/64	N-5031	7/8	A
22-18	8	23/64	9/32	S-1806	21/32	T-2806	15/16	B-3806	23/32	D-4806	57/64	N-5806	15/16	A
22-18	10	21/64	1/4	S-1709	1 1/16	T-2709	7/8	B-3709	1 1/16	D-4709	53/64	N-5709	7/8	A
22-18	10	23/64	9/32	S-1505	21/32	T-2505	15/16	B-3505	23/32	D-4505	57/64	N-5505	15/16	A
16-14	4-6	21/64	1/4	S-1529	1 1/16	T-2529	7/8	B-3529	1 1/16	D-4529	53/64	N-5529	7/8	A
16-14	4-6	23/64	9/32	S-1051	21/32	T-2051	15/16	B-3051	23/32	D-4051	57/64	N-5051	15/16	A
16-14	8	21/64	1/4	S-1831	1 1/16	T-2831	7/8	B-3831	1 1/16	D-4831	53/64	N-5831	7/8	A
16-14	8	23/64	9/32	S-1052	21/32	T-2052	15/16	B-3052	23/32	D-4052	57/64	N-5052	15/16	A
16-14	10	21/64	1/4	S-1016	1 1/16	T-2016	7/8	B-3016	1 1/16	D-4016	53/64	N-5016	7/8	A
16-14	10	23/64	9/32	S-1533	21/32	T-2533	15/16	B-3533	23/32	D-4533	57/64	N-5533	15/16	A
12-10	4-6	3/8	9/32	S-1053	47/64	T-2053	1 1/64	B-3053	47/64	D-4053	31/32	N-5053	1 1/64	B
12-10	8	3/8	9/32	S-1054	47/64	T-2054	1 1/64	B-3054	47/64	D-4054	31/32	N-5054	1 1/64	B
12-10	10	3/8	9/32	S-1017	47/64	T-2017	1 1/64	B-3017	47/64	D-4017	31/32	N-5017	1 1/64	B
ROUND FLANGED SPADE TERMINALS														
22-18	4-6	21/64	1/4	S-1510	1 1/16	T-2510	7/8	B-3510	1 1/16	D-4510	53/64	N-5510	7/8	A
22-18	4-6	23/64	9/32	S-1809	23/32	T-2809	15/16	B-3809	23/32	D-4809	57/64	N-5809	15/16	A
22-18	8	21/64	1/4	S-1811	1 1/16	T-2811	7/8	B-3811	1 1/16	D-4811	53/64	N-5811	7/8	A
22-18	8	23/64	9/32	S-1812	23/32	T-2812	15/16	B-3812	23/32	D-4812	57/64	N-5812	15/16	A
22-18	10	21/64	1/4	S-1715	1 1/16	T-2715	7/8	B-3715	1 1/16	D-4715	53/64	N-5715	7/8	A
22-18	10	23/64	9/32	S-1582	23/32	T-2582	15/16	B-3582	23/32	D-4582	57/64	N-5582	15/16	A
16-14	4-6	21/64	1/4	S-1538	1 1/16	T-2538	7/8	B-3538	1 1/16	D-4538	53/64	N-5538	7/8	A
16-14	4-6	23/64	9/32	S-1834	23/32	T-2834	15/16	B-3834	23/32	D-4834	57/64	N-5834	15/16	A
16-14	8	21/64	1/4	S-1836	1 1/16	T-2836	7/8	B-3836	1 1/16	D-4836	53/64	N-5836	7/8	A
16-14	8	23/64	9/32	S-1837	23/32	T-2837	15/16	B-3837	23/32	D-4837	57/64	N-5837	15/16	A
16-14	10	21/64	1/4	S-1716	1 1/16	T-2716	7/8	B-3716	1 1/16	D-4716	53/64	N-5716	7/8	A
16-14	10	23/64	9/32	S-1585	23/32	T-2585	15/16	B-3585	23/32	D-4585	57/64	N-5585	15/16	A
12-10	4-6	3/8	9/32	S-1086	47/64	T-2086	1 1/64	B-3086	47/64	D-4086	31/32	N-5086	1 1/64	B
12-10	8	3/8	9/32	S-1087	47/64	T-2087	1 1/64	B-3087	47/64	D-4087	31/32	N-5087	1 1/64	B
12-10	10	3/8	9/32	S-1088	47/64	T-2088	1 1/64	B-3088	47/64	D-4088	31/32	N-5088	1 1/64	B



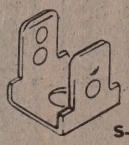
NYLON INSULATED CLOSED END CONNECTORS

Connectors are annealed, tin-plated, seamless brass for 22-14 wire range; annealed tin-plated copper for 16-10 wire range. Insulation is natural color translucent DuPont Nylon. UL Approved. Temperature rating, 105° C, maximum. 600 V maximum in building wire; 1000 V inside a sign or fixture.

Waldom Number	Wire Range	Size, Inches O.D.	I.D.	Barrel Lgth.	† Lgth.	Circular Mil Area	* Price Code*
CE-2214	22-14	5/16	1/4	1 1/32	39/64	600–5180	G
CE-1610	16-10	7/16	3/8	3/8	23/32	2400–13000	B

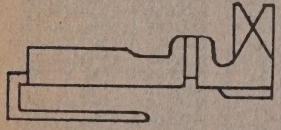
*Price code same as in T-2000 Series. †Overall.

¼" MALE TABS


S-1432T

S-1431T

Waldom Number	Size, Inches Height	Mtg. Hole	Material	Price Code*
S-1431T	7/16	.156	Brass,	T
S-1432T	29/64	.144	cadmium plated	R



PIGGY-BACK TERMINAL

Waldom Part No. PB-1431—Material, unplated brass. Wire range, 20-12. Net, 100–999, per pkg. of 100, **$8.60**; 1000–4999, per M, **$61.50**; 5000–9999, per M, **$57.10.**

FEMALE FLAGS

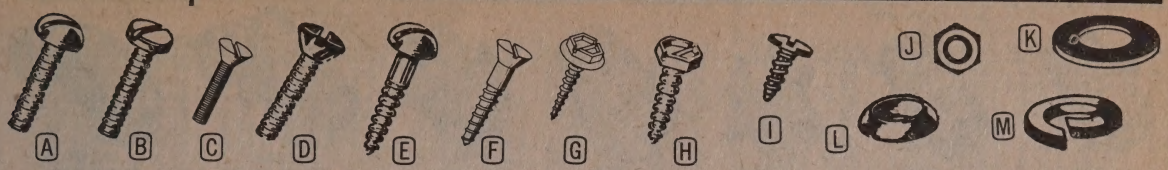
Waldom Number	Wire Range	Size, Inches Tab Width	Lgth.§	Lgth.‡	Price Code*
S-1189	18-14	.187 x .020	15/64	29/64	Q
S-1091-A	18-14	.250 x .032	15/64	29/64	L
S-1091-B	16-12	.250 x .020	5/16	19/32	L

*Vinyl insulated. †Non-insulated butted seam. ‡Overall. §Barrel.

★PRICE CODES

Price Code	S-1000 Series Net/100 100-999	Net/1000 1000-4999	Net/1000 5000-9999	T-2000 Series Net/100 100-999	Net/1000 1000-4999	Net/1000 5000-9999	B-3000 Series Net/100 100-999	Net/1000 1000-4999	Net/1000 5000-9999	D-4000 Series Net/100 100-999	Net/1000 1000-4999	Net/1000 5000-9999	N-5000 Series Net/100 100-999	Net/1000 1000-4999	Net/1000 5000-9999
A	$3.05	$21.55	$16.85	$ 6.05	$44.70	$35.05	$ 4.90	$38.95	$29.20	$ 6.20	$43.90	$37.45	$ 9.40	$ 75.90	$57.00
B	4.20	29.75	23.30	7.85	57.90	45.25	6.80	54.45	40.85	8.00	63.70	54.10	11.70	93.60	70.30
C	6.45	45.85	35.80	9.25	68.20	53.25	9.30	74.35	55.75	9.40	75.15	56.40	13.20	103.75	77.85
G	2.90	26.70	16.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
L	4.15	29.35	22.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N	9.85	70.80	55.30	11.65	83.75	65.25	12.45	98.85	74.20	12.14	97.40	73.10	15.40	123.30	92.50
Q	3.75	26.55	20.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
R	4.75	37.50	32.65	8.25	65.65	49.30	8.45	67.55	50.65	10.45	83.70	62.80	14.90	118.60	89.00
T	2.20	17.35	16.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

waldom ELECTRONIC HARDWARE



Note: Steel and brass hardware is nickel-plated unless otherwise noted. **Specify suffix C for pkg. of 100 (i.e., F-579-C); suffix M for bag of 1000 (i.e., F-579-M).**

ROUND HEAD MACHINE SCREWS (FIG. A)

STEEL TYPE

Waldom No.	Size Thd. x Lght. (Inches)	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
F-579	2-56 x 1/8	$1.75	$11.10	$ 9.60
F-461	2-56 x 1/4	1.50	9.30	8.00
F-462	2-56 x 1/2	1.70	10.70	9.25
F-463	2-56 x 3/4	1.75	11.30	9.70
F-464	3-48 x 3/4	2.00	13.40	11.55
F-465	4-36 x 1/4	1.85	12.10	10.45
F-466	4-36 x 3/8	1.75	11.45	9.85
F-467	4-36 x 1/2	1.85	12.05	10.40
F-580	4-36 x 5/8	1.90	12.45	10.75
F-468	4-36 x 3/4	2.00	13.30	11.45
F-469	4-40 x 1/4	1.85	11.95	10.30
F-581	4-40 x 3/8	1.65	10.45	9.00
F-470	4-40 x 1/2	1.90	12.45	10.75
F-582	4-40 x 5/8	1.80	11.60	10.00
F-471	4-40 x 3/4	1.95	12.80	11.00
F-472	6-32 x 1/4	1.60	9.80	8.45
F-583	6-32 x 3/8	1.70	10.95	9.45
F-473	6-32 x 1/2	1.60	10.15	8.70
F-584	6-32 x 5/8	1.80	11.60	10.00
F-475	6-32 x 1	2.10	14.10	12.15
F-476	6-32 x 1 1/4	2.25	15.25	13.15
F-477	6-32 x 2	3.70	27.55	23.75
F-478	8-32 x 1/4	1.80	11.45	9.85
F-479	8-32 x 3/8	1.70	10.95	9.45
F-480	8-32 x 1/2	1.85	11.95	10.30
F-585	8-32 x 5/8	2.20	14.95	12.85
F-481	8-32 x 3/4	2.05	13.60	11.70
F-482	8-32 x 1	2.30	15.95	13.75
F-483	8-32 x 1 1/4	2.80	19.75	17.00
F-484	10-32 x 1/2	2.05	13.50	11.65
F-586	10-32 x 5/8	2.60	18.45	15.85
F-485	10-32 x 3/4	2.40	16.75	14.45
F-486	10-32 x 1	2.95	21.10	18.15
F-487	10-32 x 1 1/2	3.45	25.25	21.75

BINDER HEAD STEEL MACHINE SCREWS (FIG. B)

F-591	2-56 x 1/8	$1.90	$12.45	$10.75
F-592	2-56 x 1/4	1.95	12.95	11.15
F-593	2-56 x 1/2	2.10	14.10	12.15
F-594	2-56 x 5/8	2.15	14.45	12.45
F-020	4-40 x 1/4	1.75	11.40	9.80
F-021	4-40 x 1/2	2.05	13.50	11.65
F-022	4-40 x 3/4	2.15	14.70	12.65
F-502	6-32 x 3/16	2.05	13.60	11.75
F-503	6-32 x 1/4	1.55	9.45	8.15
F-504	6-32 x 3/8	1.65	10.45	9.00
F-014	6-32 x 1/2	1.60	9.75	8.40
F-621	6-32 x 5/8	1.80	11.45	9.85
F-015	6-32 x 3/4	1.90	12.40	10.65
F-023	8-32 x 1/4	1.75	11.25	9.70
F-505	8-32 x 5/16	1.75	11.30	9.70
F-024	8-32 x 3/8	1.70	10.60	9.15
F-025	8-32 x 1/2	2.00	13.45	11.60
F-026	8-32 x 3/4	1.90	12.50	10.75
F-577	10-32 x 1/2	2.45	16.95	14.60
F-578	10-32 x 3/4	2.90	20.80	17.90

FLAT HEAD STEEL MACHINE SCREWS (FIG. C)

F-622	4-40 x 1/4	$1.80	$11.60	$10.00
F-623	4-40 x 3/8	1.80	11.80	10.15
F-624	4-40 x 1/2	1.90	12.30	10.60
F-625	6-32 x 1/4	1.60	9.95	8.60
F-626	6-32 x 3/8	1.70	10.60	9.15
F-627	6-32 x 1/2	1.80	11.60	10.00
F-628	6-32 x 3/4	1.85	12.10	10.45
F-629	8-32 x 3/8	2.00	13.10	11.30
F-630	8-32 x 1/2	2.10	13.95	12.00
F-631	8-32 x 3/4	2.25	15.45	13.30
F-632	10-32 x 1/2	2.00	13.10	11.30

OVAL HEAD STEEL MACHINE SCREWS (FIG. D)

F-506	6-32 x 1/2	$1.80	$11.80	$10.15
F-507	6-32 x 3/4	1.90	12.45	10.75
F-508	8-32 x 3/4	2.15	14.60	12.60
F-509	10-32 x 1/2	2.35	16.10	13.85
F-510	10-32 x 3/4	2.05	13.55	11.65

ROUND HEAD STEEL WOOD SCREWS (FIG. E)

Waldom No.	Size Thd. x Lgth. (Inches)	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
F-514	4 x 1/2	$2.15	$14.45	$12.45
F-515	4 x 3/4	2.25	15.45	13.30
F-516	6 x 3/4	2.25	15.45	13.30
F-517	6 x 1	2.60	18.45	15.90
F-519	8 x 3/4	2.35	16.25	14.00
F-047	8 x 1	2.85	20.40	17.60
F-519	8 x 1 1/4	2.90	20.90	18.00
F-520	10 x 1 1/2	3.70	27.40	23.60
F-521	12 x 1 1/2	4.90	37.20	32.05
F-522	14 x 1 3/4	6.45	50.30	43.35

FLAT HEAD STEEL WOOD SCREWS (FIG. F)

F-027	8 x 1/2	$2.10	$14.30	$12.30
F-048	8 x 1	2.90	20.75	17.90
F-032	8 x 1 1/4	2.95	21.10	18.15
F-044	10 x 1 1/2	3.20	23.05	19.90

HEX SLOTTED WASHER HEAD SHEET METAL SCREWS (FIG. G)

F-065	6 x 1/4	$2.20	$15.10	$13.00
F-057	6 x 3/8	2.10	14.05	12.10
F-050	6 x 1/2	2.10	14.05	12.10
F-058	6 x 5/8	2.25	15.35	13.25
F-054	6 x 3/4	2.30	15.60	13.45
F-051	8 x 1/4	2.30	15.75	13.60
F-052	8 x 3/8	2.30	15.95	13.75
F-053	8 x 1/2	2.45	17.10	14.75
F-055	8 x 5/8	2.45	17.20	14.80
F-059	8 x 3/4	2.35	16.10	13.85

SLOTTED HEX HEAD SHEET METAL SCREWS TYPE A (FIG. H)

F-016	4 x 3/8	$1.85	$11.85	$10.20
F-523	4 x 1/2	1.90	12.40	10.65
F-524	6 x 1/4	1.95	12.80	11.00
F-525	6 x 3/8	1.95	12.95	11.15
F-526	6 x 1/2	2.10	14.30	12.30
F-595	6 x 5/8	2.20	14.75	12.75
F-527	6 x 3/4	2.30	15.95	13.75
F-528	8 x 1/4	1.90	12.30	10.60
F-529	8 x 3/8	1.90	12.45	10.75
F-530	8 x 1/2	2.05	13.80	11.85
F-017	8 x 5/8	2.20	15.15	13.05
F-531	8 x 1	2.60	18.25	15.75
F-532	10 x 3/8	2.55	18.05	15.55
F-533	10 x 1/2	2.50	17.35	14.95
F-534	10 x 3/4	2.85	20.40	17.60

PAN HEAD SHEET METAL SCREWS TYPE A (FIG. I)

F-596	4 x 1/2	$1.70	$10.90	$ 9.40
F-033	6 x 1/4	1.60	9.95	8.60
F-597	6 x 3/8	1.70	10.70	9.25
F-034	6 x 1/2	1.60	10.05	8.65
F-035	6 x 3/4	1.95	12.95	11.15
F-036	8 x 1/4	1.90	12.30	10.60
F-598	8 x 3/8	1.90	12.45	10.75
F-037	8 x 1/2	1.95	12.80	11.00
F-038	8 x 1	2.50	17.45	15.00

ROUND HEAD NYLON SCREWS

FN-800	2-56 x 1/4	$4.75	$36.20	$36.20
FN-801	2-56 x 1/2	4.90	37.35	32.30
FN-802	4-40 x 1/4	5.00	38.00	32.75
FN-803	4-40 x 1/2	5.00	38.20	32.90
FN-804	4-40 x 3/4	5.10	39.20	33.75
FN-805	6-32 x 1/4	4.90	37.20	32.05
FN-806	6-32 x 3/8	5.00	38.00	32.75
FN-807	6-32 x 1/2	5.00	38.20	32.90
FN-808	6-32 x 5/8	5.10	39.20	33.75
FN-809	6-32 x 3/4	5.15	39.30	33.85
FN-810	8-32 x 3/8	5.15	39.35	33.90
FN-811	8-32 x 1/2	5.15	39.50	34.05
FN-812	8-32 x 3/4	5.55	42.65	36.75
FN-813	10-32 x 1/2	6.10	47.30	40.75
FN-814	10-32 x 1	6.10	47.40	40.85

NYLON HEX NUTS

FN-853	2-56	$5.30	$40.50	$34.90
FN-854	4-40	5.30	40.65	35.05
FN-855	6-32	5.30	40.85	35.20
FN-856	8-32	5.35	41.00	35.30
FN-857	10-32	5.90	45.65	39.35

BINDER HEAD NYLON SCREWS

Waldom No.	Size Thd. x Lght. (Inches)	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
FN-815	2-56 x 1/4	$4.70	$35.70	$30.75
FN-816	2-56 x 1/2	4.85	36.85	31.75
FN-817	4-40 x 1/4	5.00	38.00	32.75
FN-818	4-40 x 1/2	5.00	38.20	32.90
FN-819	4-40 x 3/4	5.10	39.20	33.75
FN-820	6-32 x 1/4	4.90	37.20	32.05
FN-821	6-32 x 3/8	5.00	38.00	32.75
FN-822	6-32 x 1/2	5.00	38.20	32.90
FN-823	6-32 x 5/8	5.10	39.20	33.75
FN-824	6-32 x 3/4	5.15	39.30	33.85
FN-825	8-32 x 3/8	5.15	39.35	33.90
FN-826	8-32 x 1/2	5.15	39.50	34.05
FN-827	8-32 x 3/4	5.55	42.65	36.75
FN-828	10-32 x 1/2	6.10	47.30	40.75
FN-829	10-32 x 1	6.10	47.40	40.85

HEX STEEL NUTS (FIG. J)

F-554	2-56 x 3/16 x 1/16	$1.80	$11.60	$10.00
F-555	3-48 x 3/16 x 1/16	1.90	12.45	10.75
F-556	4-36 x 1/4 x 3/32	2.00	13.30	11.45
F-557	4-40 x 1/4 x 3/32	2.10	14.10	12.15
F-559	6-32 x 1/4 x 3/32	2.20	14.95	12.85
F-560	6-32 x 5/16 x 7/64	2.30	15.75	13.60
F-561	8-32 x 1/4 x 3/32	2.20	14.95	12.85
F-562	8-32 x 5/16 x 7/64	2.30	15.75	13.60
F-563	10-32 x 3/8 x 1/8	2.40	16.60	14.30
F-619	12-24 x 7/16 x 5/32	3.40	25.05	21.60
F-564	1/4-20 x 7/16 x 3/16	3.70	27.50	23.70

WASHERS

Steel and brass washers are nickel-plated unless otherwise noted. Fiber washers, both flat and extruded, are for insulation of components and controls from chassis or from each other.

FLAT STEEL WASHERS (FIG. K)

Waldom No.	Screw No.	O.D., In.	Pkg. of 100	Per 1000 1000-4999	Per 1000 5000-Up
MW-400	#2	7/32	$0.75	$ 2.80	$ 2.45
MW-401	#4	9/32	.65	2.15	1.85
MW-402	#6	3/8	.75	2.95	2.55
MW-403	#8	3/8	.75	2.80	2.45
MW-404	#10	7/16	.75	2.95	2.55
MW-408	1/4	5/8	1.60	9.80	8.45
MW-410	3/8	1 1/16	1.40	8.15	7.00

FLAT BRASS WASHERS (FIG. K)

MW-400B	#2	7/32	$2.75	$19.40	$16.75
MW-401B	#4	9/32	2.40	16.45	14.15
MW-402B	#6	3/8	2.00	13.20	11.40
MW-403B	#8	3/8	2.10	13.95	12.00
MW-404B	#10	7/16	2.35	16.10	13.85

STEEL CUP WASHERS (FIG. L)

CW-6	#6	.....	$0.85	$3.65	$3.15
CW-8	#8	.....	1.00	4.90	4.25
CW-10	#10	.....	1.10	6.00	5.20

STEEL SPLIT LOCK WASHERS (FIG. M)

MW-411*	#4	.....	$0.85	$3.70	$3.20
MW-412*	#6	.....	.75	3.00	2.55
MW-413*	#8	.....	.80	3.25	2.80
MW-414*	#10	.....	.80	3.15	2.70
MW-415*	1/4	.....	.95	4.60	3.95

*Zinc plated.

FLAT FIBER WASHERS (FIG. K)

FW-374	#4	1/4	$0.90	$ 4.15	$ 3.60
FW-375	#6	1/4	.90	4.15	3.60
FW-376	#8	3/8	.90	4.15	3.60
FW-377	#10	3/8	.90	4.30	3.70
FW-378	1/4	1/2	1.10	5.65	4.85
FW-379	3/8	5/8	1.20	6.80	5.85
FW-380	7/16	3/4	2.05	13.60	11.75

EXTRUDED FIBER WASHERS (FIG. K)

FW-384	#4	9/32	$2.35	$16.10	$13.85
FW-385	#6	5/16	2.20	15.00	12.95
FW-386	#8	3/8	2.35	16.25	14.00
FW-387	#10	7/16	2.50	17.45	15.00
FW-388	1/4	1/2	2.75	19.60	16.85
FW-389	3/8	5/8	3.00	21.75	18.75

FLAT NYLON WASHERS (FIG. K)

NW-875	#4	9/32	$1.20	$ 6.45	$ 5.60
NW-876	#6	5/16	1.25	7.15	6.15
NW-877	#8	3/8	1.80	11.65	10.05
NW-878	#10	7/16	1.85	12.20	10.50

THERE ARE OVER 4000 ITEMS IN THE WALDOM LINE. ASK FOR CATALOG #7G7.

3100A
Feed-thru

3101A
Cable Jack

3102A
Receptacle

3106A
Plug

3106B
Plug and
Split Back Shell

3108A
Angle Plug
Solid Back Shell

3108B
Angle Plug
Split Back Shell

Meet current MIL-C-5015 specifications; interchangeable with units made to meet previous specs. **Finish:** Cadmium-plated aluminum with olive drab chromate conversion coating; non-reflective, corrosion-resistant. **Inserts:** Molded diallyl phthalate; offers dimensional stability, high insulation resistance, high arc resistance. **Contacts:** Non-rotating, silver-plated; pre-tinned solder pockets. **Coupling Rings:** Made from solid aluminum bar stock. Other MS/AN connectors for potting and pressurizing are available; write for complete literature.

Note: For W, X, Y or Z polarization, add **5c** to price shown.

Type 3100A: Wall receptacle with mounting flange; with AN3057 cable clamp.
Type 3101A: Cable receptacle. Provides for detachable splice in cable or conduit.
Type 3102A: Box receptacle that mounts on chassis or panel. For open type wiring.
Type 3106A: Straight plug with solid back shell.
Type 3106B: Same but with split back shell.
Type 3108A: Angle plug. Solid back shell.
Type 3108B: Same, but with split back shell.

Insert	Net Each, Lots of 1-9* Shell Style						
	3100A	3101A	3102A	3106A	3106B	3108A	3108B
8S-01P	$3.48	.....	$1.94	$2.22	.....	.....	.....
8S-01S	3.48	.....	1.94	2.22	.....	.....	.....
10S-02P	3.59	$2.93	1.35	3.14	.....	.....	.....
10S-02S	3.65	2.98	1.41	3.15	.....	.....	.....
10SL-03P	2.24	3.38	1.75	.....	.....	.....	.....
10SL-03S	.....	.....	.....	2.74	.....	$ 4.85	$ 2.51
10SL-04P	2.22	3.17	1.75	.....	.....	.....	.....
10SL-04S	.....	.....	.....	2.68	.....	4.83	2.47
12-05P	2.98	3.33	1.84	3.00	.....	5.43	3.17
12-05S	3.17	3.57	2.11	3.23	.....	5.68	3.44
12S-01P	2.74	3.14	1.54	2.51	.....	5.81	3.23
12S-01S	2.85	3.15	1.56	2.57	.....	5.83	3.25
12S-02P	2.74	3.14	1.54	2.51	.....	5.81	3.23
12S-02S	2.85	3.15	1.56	2.57	.....	5.83	3.25
12S-03P	2.45	2.87	1.31	2.24	.....	5.49	2.98
12S-03S	2.49	2.93	1.41	2.39	.....	5.53	3.02
12S-04P	2.51	2.98	1.43	2.41	.....	5.57	3.12
12S-04S	2.51	2.98	1.43	2.41	.....	5.57	3.12
12S-06P	7.83	8.28	6.71	7.68	.....	10.85	8.34
12S-06S	8.32	8.70	7.14	8.19	.....	11.36	8.84
12SL-844P	.....	.....	3.15	.....	.....	.....	.....
12SL-844S	.....	.....	.....	5.87	.....	8.84	.....
14-03P	3.02	3.65	1.90	3.17	.....	5.68	4.79
14-03S	3.33	3.90	2.19	3.48	.....	5.93	5.11
14S-01P	2.58	3.17	1.73	2.58	$3.15	5.42	2.93
14S-01S	2.68	3.23	1.75	2.68	3.17	5.43	2.98
14S-02P	2.57	3.15	1.71	2.57	3.14	5.40	2.89
14S-02S	2.77	3.34	1.84	2.77	3.33	5.53	3.12
14S-04P	2.47	3.02	1.54	2.47	3.00	5.28	2.77
14S-04S	2.51	3.14	1.65	2.51	3.12	5.38	2.87
14S-05P	2.87	3.44	1.94	2.87	3.38	5.64	3.15
14S-05S	2.98	3.57	2.09	2.98	3.55	5.80	3.25
14S-06P	2.98	3.57	2.09	2.98	3.55	5.80	3.25
14S-06S	3.02	3.65	2.13	3.02	3.59	5.83	3.34
14S-07P	2.58	3.17	1.73	2.58	3.15	5.42	2.93
14S-07S	2.68	3.23	1.75	2.68	3.17	5.43	2.98
14S-09P	2.47	3.02	1.54	2.47	3.00	5.28	2.77
14S-09S	2.49	3.12	1.56	2.49	3.02	5.30	2.85
14S-10P	2.87	3.44	1.94	2.87	3.38	5.64	3.15
14S-10S	3.12	3.67	2.19	3.12	3.65	5.87	3.38
14S-11P	2.87	3.44	1.94	2.87	3.38	5.64	3.15
14S-11S	3.12	3.67	2.19	3.12	3.65	5.87	3.38
14S-12P	2.87	3.44	1.94	2.87	3.38	5.64	3.15
14S-12S	2.98	3.57	2.09	2.98	3.55	5.80	3.25
16-02P	3.17	3.33	1.79	3.00	.....	6.21	3.86
16-02S	3.55	3.63	2.11	3.33	.....	6.56	4.10
16-07P	3.90	3.99	2.47	3.69	.....	6.97	4.57
16-07S	4.47	4.58	3.02	4.31	.....	7.52	5.13
16-09P	3.67	3.78	2.22	3.48	.....	6.75	4.33
16-09S	4.09	4.26	2.74	3.91	.....	7.14	4.77
16-10P	3.57	3.67	2.13	3.34	.....	6.61	4.22
16-10S	3.97	4.07	2.51	3.78	.....	7.01	4.62
16-11P	3.30	3.44	1.90	3.14	.....	6.37	3.97
16-11S	3.71	3.86	2.34	3.57	.....	6.80	4.37
16-12P	3.82	3.91	2.41	3.65	.....	6.84	4.47
16-12S	4.35	4.47	2.93	4.10	.....	7.41	5.02
16-13P	8.06	8.21	6.71	7.90	.....	11.15	8.70
16-13S	9.37	9.46	7.94	9.14	.....	12.39	10.01
16S-01P	3.33	3.59	2.11	2.97	3.82	6.97	3.57
16S-01S	3.67	3.91	2.45	3.33	4.10	7.30	3.90
16S-03P	2.85	3.00	1.52	2.41	3.23	6.37	2.98
16S-03S	2.93	3.17	1.73	2.57	3.44	5.56	3.15
16S-04P	2.93	3.17	1.73	2.57	3.44	5.56	3.15
16S-04S	3.02	3.33	1.81	2.74	3.57	6.71	3.25
16S-05P	3.14	3.38	1.90	2.77	3.65	6.76	3.34
16S-05S	3.17	3.48	2.01	2.87	3.69	6.82	3.44
16S-06P	3.17	3.48	2.01	2.87	3.69	6.82	3.44
16S-06S	3.17	3.48	2.01	2.87	3.69	6.82	3.44
16S-08P	3.23	3.55	2.07	2.89	3.71	6.84	3.48
16S-08S	3.34	3.65	2.13	3.00	3.86	6.99	3.59
16S-15P	3.34	3.65	2.13	3.00	3.86	6.99	3.59
16S-15S	3.48	3.71	2.22	3.14	3.97	7.09	3.69
18-01P	4.09	4.62	2.85	3.91	4.69	7.96	4.85
18-01S	4.47	5.00	3.15	4.31	5.04	8.32	5.23
18-03P	3.25	3.78	2.01	3.12	3.86	7.11	4.05
18-03S	4.05	4.56	2.76	3.86	4.62	7.90	4.79
18-04P	3.33	3.82	2.07	3.14	3.90	7.14	4.07

Insert	Net Each, Lots of 1-9* Shell Style						
	3100A	3101A	3102A	3106A	3106B	3108A	3108B
18-04S	$ 3.59	$ 4.07	$ 2.24	$ 3.38	$ 4.10	$ 7.47	$ 7.35
18-05P	3.15	3.67	1.84	2.98	3.71	7.01	3.91
18-05S	3.59	4.07	2.24	3.38	4.10	7.47	4.35
18-06P	3.48	3.97	2.19	3.25	4.05	7.33	4.26
18-06S	4.01	4.62	2.85	3.91	4.69	7.96	4.85
18-07P	3.25	3.78	2.01	3.12	3.86	7.11	4.05
18-07S	3.86	4.35	2.51	3.67	4.43	7.70	4.62
18-08P	4.09	4.62	2.85	3.91	4.69	7.96	4.85
18-08S	4.37	4.85	3.12	4.22	5.00	8.28	5.15
18-09P	3.90	4.37	2.57	3.69	4.47	7.73	4.66
18-09S	4.22	4.69	2.89	3.99	4.77	8.06	5.00
18-10P	3.97	4.47	2.68	3.78	4.56	7.83	4.71
18-10S	4.37	4.85	3.12	4.22	5.00	8.28	5.15
18-11P	3.97	4.47	2.68	3.78	4.56	7.83	4.71
18-11S	4.09	4.62	2.85	3.91	4.69	7.96	4.85
18-12P	3.69	4.22	2.41	3.55	4.31	7.54	4.47
18-12S	3.97	4.47	2.68	3.78	4.56	7.83	4.71
18-13P	3.99	4.50	2.74	3.82	4.58	7.87	4.77
18-13S	4.50	5.02	3.17	4.33	5.11	8.34	5.28
18-14P	3.69	4.22	2.41	3.55	4.31	7.54	4.47
18-14S	4.31	4.77	2.98	4.07	4.83	8.15	5.04
18-15P	13.15	3.68	11.91	12.96	13.76	17.02	13.89
18-15S	13.51	14.02	12.24	13.34	14.08	17.40	14.29
18-16P	3.59	4.07	2.24	3.38	4.10	7.47	4.35
18-16S	4.22	4.69	2.89	3.99	4.77	8.06	5.00
18-17P	4.47	5.00	3.15	4.31	5.04	8.32	5.23
18-17S	4.50	5.02	3.17	4.33	5.11	8.34	5.28
18-18P	4.47	5.00	3.15	4.31	5.04	8.32	5.23
18-18S	4.50	5.02	3.17	4.33	5.11	8.34	5.28
18-19P	5.53	6.08	4.31	5.40	6.14	9.42	6.33
18-19S	4.56	5.04	3.23	4.35	5.13	8.40	5.30
18-20P	3.57	4.05	2.22	3.34	4.09	7.41	4.33
18-20S	3.78	4.31	2.47	3.59	4.35	7.66	4.56
18-22P	3.25	3.78	2.01	3.12	3.86	7.11	4.05
18-22S	3.57	4.05	2.22	3.34	4.09	7.41	4.33
18-23P	4.71	5.23	3.44	4.56	5.30	8.59	5.49
18-23S	4.79	5.30	3.55	4.62	5.40	8.66	5.53
18-24P	4.71	5.23	3.44	4.56	5.30	8.59	5.49
18-24S	4.79	5.30	3.55	4.62	5.40	8.66	5.53
18-29P	3.59	4.07	2.24	3.38	4.10	7.47	4.35
18-29S	3.59	4.07	2.24	3.38	4.10	7.47	4.35
18-404P	9.14	9.69	7.87	8.99	9.75	13.05	9.92
18-404S	10.39	10.83	9.06	10.15	10.93	14.23	11.12
18-42CP	.....	.....	.....	.....	.....	.....	9.12
18-42CS	.....	.....	.....	.....	.....	.....	9.67
18-420P	6.40	7.41	6.04	8.21	9.08	12.29	.....
18-420S	7.30	7.90	6.50	8.66	9.48	12.79	.....
20-02P	5.23	5.49	3.69	5.64	6.19	9.79	6.50
20-02S	5.80	6.06	4.26	6.16	6.76	10.39	7.01
20-03P	3.91	4.22	2.41	4.35	4.90	8.47	5.17
20-03S	5.15	5.42	3.65	5.53	6.14	9.75	6.40
20-04P	4.10	4.43	2.58	4.58	5.15	8.70	5.42
20-04S	4.71	5.02	3.17	5.15	5.76	9.31	6.04
20-05P	4.07	4.35	2.51	4.50	5.11	8.66	5.38
20-05S	4.43	4.69	2.89	4.83	5.42	9.01	5.68
20-06P	3.71	3.97	2.19	4.09	4.69	8.30	5.05
20-06S	3.78	4.05	2.22	4.22	4.77	8.34	5.04
20-07P	4.10	4.43	2.58	4.58	5.15	8.70	5.42
20-07S	4.50	4.77	2.98	4.90	5.49	9.08	5.80
20-08P	4.71	5.02	3.17	5.15	5.76	9.31	6.04
20-08S	5.49	5.80	3.97	5.89	6.50	10.05	6.76
20-09P	4.47	4.71	2.93	4.85	5.43	9.06	5.76
20-09S	4.56	4.79	3.00	5.00	5.51	9.12	5.81
20-11P	5.28	5.51	3.71	5.68	5.31	9.84	6.54
20-11S	8.06	8.32	6.54	8.46	9.06	12.65	9.31
20-12P	4.10	4.43	2.58	4.58	5.15	8.70	5.42
20-12S	4.43	4.69	2.89	4.83	5.42	9.01	5.68
20-13P	3.91	4.22	2.41	4.35	4.90	8.47	5.17
20-13S	5.81	6.08	4.30	6.19	6.80	10.41	7.03
20-14P	5.00	5.23	3.44	5.40	5.93	9.52	7.19
20-14S	6.40	6.71	4.85	6.82	7.41	10.96	7.68
20-15P	4.58	4.83	3.02	5.02	5.53	9.14	5.83
20-15S	6.19	6.50	4.69	6.63	7.22	10.81	7.49
20-16P	4.62	4.85	3.12	5.04	5.57	9.20	5.87
20-16S	4.90	5.17	3.38	5.38	5.89	9.48	6.16
20-17P	4.56	4.79	3.00	5.00	5.51	9.12	5.81
20-17S	5.51	5.81	3.99	5.93	6.54	10.13	6.80

★LARGER QUANTITY DISCOUNTS SHOWN ON LAST PAGE OF THIS SERIES

Insert	Net Each, Lots of 1-9* Shell Style 3100A	3101A	3102A	3106A	3106B	3108A	3108B
20-18P	$ 4.79	$ 5.11	$ 3.25	$ 5.23	$ 5.81	$ 9.39	$ 6.08
20-18S	5.30	5.53	3.78	5.76	6.31	9.88	6.50
20-19P	5.11	5.40	3.57	5.49	6.08	9.69	6.33
20-19S	6.19	6.50	4.69	6.63	7.22	10.81	7.49
20-20P	5.15	5.42	3.65	5.81	6.14	9.75	6.40
20-20S	6.19	6.50	4.69	6.63	7.22	10.81	7.49
20-21P	4.47	4.71	2.93	4.85	5.43	9.06	5.76
20-21S	4.69	5.00	3.15	5.13	5.68	9.27	5.93
20-22P	5.28	5.51	3.71	5.64	6.21	9.84	6.54
20-22S	6.19	6.50	4.69	6.63	7.22	10.81	7.49
20-23P	4.43	4.69	2.89	4.83	5.42	9.01	5.68
20-23S	4.83	5.13	3.33	5.28	5.83	9.42	6.10
20-24P	4.56	4.79	3.00	5.00	5.51	9.12	5.81
20-24S	5.64	5.89	4.09	6.01	6.63	10.18	6.86
20-27P	4.71	5.02	3.17	6.15	5.76	9.31	6.04
20-27S	5.17	5.43	3.67	5.57	6.16	9.77	6.44
20-29P	5.13	5.40	3.59	5.51	6.10	9.73	6.37
20-29S	5.68	5.93	4.10	6.10	6.71	10.26	6.97
20-33P	5.11	5.38	3.57	5.49	6.08	9.69	6.33
20-33S	5.23	5.49	3.69	5.64	6.19	9.79	6.50
22-01P	4.69	4.90	2.85	4.69	5.38	9.20	5.68
22-01S	5.43	5.68	3.67	5.43	6.16	10.03	6.54
22-02P	5.02	5.23	3.17	5.02	5.76	9.60	6.08
22-02S	6.10	6.33	4.33	6.10	6.82	10.68	7.14
22-03P	6.04	6.19	4.22	6.04	6.75	10.60	7.03
22-03S	6.19	6.44	4.43	6.19	6.97	10.81	7.30
22-04P	5.17	5.42	3.38	5.17	5.89	9.77	6.21
22-04S	5.87	6.10	4.07	5.87	6.61	10.45	6.97
22-05P	4.83	5.11	3.02	4.83	5.53	9.42	5.89
22-05S	4.85	5.13	3.12	4.85	5.57	9.46	5.93
22-06P	4.77	5.02	2.98	4.77	5.49	9.37	5.83
22-06S	5.57	5.83	3.82	5.57	6.33	10.17	6.71
22-07P	5.04	5.28	3.23	5.04	5.80	9.67	6.10
22-07S	5.64	5.87	3.86	5.64	6.37	10.18	6.75
22-08P	4.07	4.33	2.24	4.07	4.79	8.66	5.15
22-08S	5.15	5.40	3.34	5.15	5.87	9.75	6.19
22-09P	4.31	4.50	2.47	4.31	5.02	8.84	5.38
22-09S	5.43	5.68	3.67	5.43	6.16	10.03	6.54
22-10P	4.31	4.50	2.47	4.31	5.02	8.84	5.38
22-10S	4.47	4.69	2.68	4.47	5.17	9.06	5.51
22-11P	3.97	4.22	2.19	3.97	4.69	8.55	5.04
22-11S	4.31	4.50	2.47	4.31	5.02	8.84	5.38
22-12P	5.17	5.42	3.38	5.17	5.89	9.77	6.21
22-12S	6.04	6.19	4.22	6.04	6.75	10.60	7.03
22-13P	4.79	5.04	3.00	4.79	5.51	9.39	5.87
22-13S	5.38	5.53	3.57	5.38	6.08	9.92	6.40
22-14P	5.76	5.93	3.91	5.76	6.44	10.34	6.80
22-14S	6.56	6.80	4.77	6.56	7.30	11.15	7.66
22-15P	5.13	5.38	3.33	5.13	5.83	9.73	6.16
22-15S	6.21	6.50	4.47	3.21	6.99	10.83	7.33
22-16P	5.38	5.53	3.57	5.38	6.08	9.92	6.40
22-16S	5.43	5.68	3.67	5.43	6.16	10.03	6.54
22-17P	5.13	5.38	3.33	5.13	5.83	9.73	6.16
22-17S	5.28	5.49	3.48	5.28	6.04	9.54	6.33
22-18P	4.77	5.02	2.98	4.77	5.49	9.37	5.83
22-18S	4.83	5.11	3.02	4.83	5.53	9.42	5.89
22-19P	5.64	5.87	3.86	5.64	3.37	10.18	6.75
22-19S	5.76	5.93	3.91	5.76	6.44	10.34	6.80
22-20P	4.90	5.15	3.14	4.90	5.64	9.48	6.04
22-20S	5.15	5.40	3.34	5.15	5.87	9.75	6.19
22-21P	5.40	5.57	3.59	5.40	6.10	9.94	6.44
22-21S	6.08	6.31	4.31	6.08	6.80	10.66	7.11
22-22P	5.80	6.04	3.97	5.80	6.50	10.39	6.82
22-22S	7.28	7.49	5.43	7.28	7.96	11.86	8.32
22-23P	5.51	5.80	3.71	5.51	6.21	10.13	6.61
22-23S	7.09	7.33	5.30	7.09	7.83	11.65	8.19
22-24P	4.71	5.00	2.93	4.71	5.43	9.31	5.81
22-24S	5.02	5.23	3.17	5.02	5.76	9.60	6.08
22-26P	5.30	5.51	3.55	5.30	6.06	9.88	6.37
22-26S	6.04	6.19	4.22	6.04	6.75	10.60	7.03
22-27P	5.43	5.68	3.67	5.43	6.16	10.03	6.54
22-27S	5.87	6.10	4.07	5.87	6.61	10.45	6.97
22-28P	5.23	5.43	3.44	5.23	5.93	9.79	6.31
22-28S	7.22	7.47	5.42	7.22	7.94	11.74	8.30
22-29P	5.68	5.89	3.90	5.68	6.40	10.26	6.76
22-29S	6.44	6.71	4.66	6.44	7.14	11.00	7.52
22-33P	4.71	5.00	2.93	4.71	5.43	9.31	5.81
22-33S	4.85	5.13	3.12	4.85	5.57	9.46	5.93
22-34P	4.79	5.04	3.00	4.79	5.51	9.39	5.87
22-34S	5.02	5.23	3.17	5.02	5.76	9.60	6.08
22-36P	25.00	25.21	23.22	25.00	25.75	29.60	26.05
22-36S	27.36	27.61	25.61	27.36	28.12	31.96	28.42
22-404P	25.00	25.21	23.22	25.00	25.75	29.60	26.05
22-404S	27.36	27.61	25.61	27.36	28.12	31.96	28.42
24-01P	6.10	6.14	3.99	6.19	7.52	11.15	6.84
24-01S	7.28	7.30	5.15	7.37	8.66	12.29	8.02
24-02P	5.81	5.83	3.69	5.89	7.22	10.83	6.56
24-02S	7.01	7.03	4.90	7.11	8.44	12.05	7.75
24-03P	5.43	5.49	3.34	5.53	6.84	10.49	6.19
24-03S	5.53	5.57	3.48	5.68	6.99	10.62	6.33
24-04P	6.40	6.44	4.33	6.54	7.83	11.46	7.14
24-04S	7.30	7.33	5.17	7.41	8.68	12.31	8.06
24-05P	6.44	6.50	4.35	6.56	7.87	11.50	7.22
24-05S	7.28	7.30	5.15	7.37	8.66	12.29	8.02
24-06P	6.06	6.08	3.91	6.14	7.47	11.10	6.80
24-06S	7.87	7.90	5.80	7.96	9.27	12.92	8.63
24-07P	6.75	6.76	4.62	6.82	8.15	11.72	7.49
24-07S	7.28	7.30	5.15	7.37	8.66	12.29	8.02
24-09P	5.76	5.80	3.65	5.83	7.11	10.77	6.50
24-09S	6.37	6.40	4.31	6.50	7.75	11.38	7.11
24-10P	8.40	8.44	6.31	8.47	9.79	13.43	9.14
24-10S	9.67	9.69	7.90	9.75	11.00	14.65	10.41
24-11P	7.14	7.22	5.11	7.30	8.59	12.24	7.94
24-11S	9.12	9.14	7.01	9.22	10.51	14.14	9.88

Insert	Net Each, Lots of 1-9* Shell Style 3100A	3101A	3102A	3106A	3106B	3108A	3108B
24-12P	$ 7.49	$ 7.52	$ 5.40	$ 7.62	$ 8.93	$12.50	$ 8.28
24-12S	8.99	9.01	6.84	9.08	10.41	14.02	9.75
24-14P	7.09	7.11	5.02	7.22	8.47	12.14	7.87
24-14S	8.93	8.97	6.80	9.01	10.34	13.89	9.69
24-16P	6.19	6.21	4.09	6.33	7.66	11.27	6.99
24-16S	7.28	7.30	5.15	7.37	8.66	12.29	8.02
24-17P	5.15	5.17	3.02	5.28	6.56	10.17	5.89
24-17S	5.76	5.80	3.65	5.83	7.11	10.77	6.50
24-18P	5.23	5.28	3.14	5.38	6.63	10.26	6.04
24-18S	8.08	8.15	6.04	8.21	9.48	13.11	8.04
24-19P	6.44	6.50	4.35	6.56	7.87	11.50	7.22
24-19S	6.84	6.86	4.17	6.99	8.30	11.93	7.66
24-20P	6.04	6.06	3.90	6.10	7.41	11.00	6.76
24-20S	6.08	6.10	3.97	6.16	7.49	11.12	6.82
24-21P	6.04	6.06	3.90	6.50	7.41	11.00	6.76
24-21S	6.44	6.50	4.35	6.56	7.87	11.50	7.22
24-22P	6.82	6.84	4.71	6.97	8.28	11.91	7.62
24-22S	8.46	8.47	6.37	6.59	9.55	13.51	9.22
24-23P	6.84	6.86	4.77	6.99	8.30	11.93	7.66
24-23S	8.32	8.34	6.19	8.44	9.75	13.38	9.08
24-24P	6.97	6.99	4.83	7.03	8.34	11.99	7.70
24-24S	7.83	7.87	5.76	7.94	9.22	12.84	8.59
24-27P	5.15	5.17	3.02	5.28	6.56	10.17	5.89
24-27S	5.30	5.38	3.17	5.42	6.75	10.39	6.08
24-28P	7.03	7.09	5.00	7.14	8.40	12.10	7.83
24-28S	7.96	8.02	5.87	8.08	9.39	13.05	8.70
24-768P	7.54	7.62	5.43	7.68	8.99	12.64	8.32
24-768S	10.17	10.18	8.08	10.34	11.61	15.24	10.94
24-835P	6.08	6.10	3.97	6.16	7.49	11.12	6.82
24-835S	7.49	7.52	5.40	7.62	8.93	12.50	8.28
28-01P	7.41	8.15	5.42	7.68	8.34	12.56	8.44
28-01S	9.46	10.17	7.49	9.75	10.43	14.63	10.49
28-02P	6.61	7.33	7.62	6.86	7.54	11.72	7.66
28-02S	7.03	7.75	5.11	7.33	8.02	12.24	8.08
28-03P	6.82	7.54	4.83	7.09	7.75	11.99	7.87
28-03S	7.28	7.96	5.28	7.52	8.21	12.39	8.30
28-04P	6.10	6.82	4.09	6.37	7.03	11.27	7.11
28-04S	6.40	7.11	4.43	6.71	7.37	11.59	7.47
28-05P	6.61	7.33	4.62	6.84	7.54	11.72	7.66
28-05S	7.54	8.30	5.53	7.83	8.47	12.71	8.59
28-06P	8.02	8.70	6.06	8.30	8.99	13.15	9.06
28-06S	8.99	9.73	6.99	9.22	9.92	14.12	10.01
28-07P	6.82	7.54	4.83	7.09	7.75	11.99	7.87
28-07S	7.68	8.40	5.68	7.94	8.63	12.83	8.68
28-08P	6.61	7.33	4.62	6.84	7.54	11.72	7.66
28-08S	6.82	7.54	4.83	7.09	7.75	11.99	7.87
28-09P	6.99	7.77	5.02	7.28	7.94	12.14	8.02
28-09S	7.66	8.34	5.64	7.90	8.59	12.79	8.66
28-10P	9.06	9.77	7.03	9.31	10.01	14.23	10.05
28-10S	11.38	12.14	9.42	11.65	12.37	16.59	12.43
28-11P	7.49	8.21	5.49	7.73	8.44	12.65	8.47
28-11S	9.08	9.79	7.09	9.37	10.03	14.27	10.13
28-12P	7.75	8.47	5.81	8.06	8.70	12.94	8.82
28-12S	9.08	9.79	7.09	9.37	10.03	14.27	10.13
28-13P	8.59	9.31	6.61	8.84	9.52	13.76	9.67
28-13S	9.94	10.68	7.96	10.18	10.93	15.12	10.96
28-14P	7.47	8.19	5.43	7.70	8.40	12.64	8.46
28-14S	8.19	8.93	6.16	8.44	9.12	13.34	9.20
28-15P	8.70	9.46	6.76	9.01	9.73	13.87	9.77
28-15S	10.05	10.81	8.08	10.39	11.00	15.24	11.12
28-16P	7.70	8.44	5.76	7.96	8.66	12.84	8.70
28-16S	7.75	8.47	5.81	8.06	8.70	12.94	8.82
28-17P	6.54	7.28	4.56	6.80	7.49	11.65	7.49
28-17S	6.99	7.70	5.02	7.28	7.94	12.14	8.02
28-18P	6.33	7.03	4.33	6.61	7.30	11.50	7.37
28-18S	6.86	7.66	4.90	7.14	7.87	12.05	7.94
28-19P	6.40	7.11	4.43	6.71	7.37	11.59	7.47
28-19S	7.75	8.47	5.81	8.06	8.70	12.94	8.82
28-20P	7.54	8.30	5.53	7.83	8.47	12.71	8.59
28-20S	8.40	9.12	6.40	8.66	9.37	13.57	9.42
28-21P	9.01	9.75	7.01	9.27	9.94	14.14	10.03
28-21S	10.18	10.94	8.28	10.49	11.19	15.35	11.27
28-22P	8.84	9.60	6.84	9.12	9.79	14.02	9.88
28-22S	10.51	11.27	8.55	10.81	11.50	15.69	11.59
28-766P	10.39	11.10	8.34	10.62	11.32	15.49	11.36
28-766S	12.84	13.59	10.85	13.11	13.81	18.05	13.87
32-01P	9.77	10.43	7.62	11.36	11.46	17.06	12.03
32-01S	11.99	12.65	9.79	13.59	13.68	19.30	14.27
32-02P	10.15	10.81	7.96	11.72	11.86	17.46	12.39
32-02S	11.74	12.43	9.67	13.41	13.47	19.11	14.04
32-03P	10.72	11.36	8.55	12.31	12.39	18.09	12.96
32-03S	13.09	13.76	10.93	14.69	14.76	20.43	15.33
32-04P	7.47	8.08	5.28	9.06	9.12	14.76	9.73
32-04S	8.55	9.20	6.37	10.15	10.18	15.90	10.81
32-05P	9.37	10.01	7.14	10.94	11.00	16.68	11.61
32-05S	10.39	10.96	8.19	11.97	12.03	17.69	12.64
32-06P	10.05	10.72	7.90	11.65	11.72	17.42	12.31
32-06S	14.31	14.97	12.14	15.94	16.00	21.66	16.59
32-07P	9.52	10.17	7.37	11.15	11.25	16.87	11.74
32-07S	12.14	12.79	9.94	13.76	13.81	19.51	14.40
32-08P	10.43	11.10	8.28	12.03	12.10	17.73	12.67
32-08S	10.60	11.25	8.40	12.18	12.27	17.88	12.83
32-09P	8.97	9.60	6.76	10.51	10.62	16.26	11.19
32-09S	10.17	10.83	8.02	11.74	11.91	17.52	12.43
32-10P	10.05	10.72	7.90	11.65	11.72	17.42	12.31
32-10S	10.94	11.61	8.80	12.56	12.65	18.37	13.17
32-101P	22.04	22.69	19.87	23.62	23.67	29.34	24.28
32-101S	20.62	21.30	18.43	22.23	22.29	27.95	22.88
32-102P	16.25	16.87	14.04	17.80	17.88	23.56	18.45
32-102S	18.89	19.55	16.68	20.44	20.58	26.20	21.11
32-12P	7.75	8.44	5.57	9.39	9.46	15.12	10.03
32-12S	9.73	10.39	7.52	11.32	11.36	17.02	11.97
32-13P	8.63	9.27	6.44	10.18	10.34	15.96	10.85
32-13S	9.84	10.49	7.68	11.46	11.53	17.20	12.10

★LARGER QUANTITY DISCOUNTS SHOWN ON FOLLOWING PAGE

MS CONNECTORS (CONTINUED)

Insert	Net Each, Lots of 1-9* Shell Style 3100A	3101A	3102A	3106A	3106B	3108A	3108B
32-15P	$11.86	$12.45	$ 9.69	$13.43	$13.51	$19.19	$14.08
32-15S	13.05	13.68	10.83	14.63	14.69	20.35	15.28
32-17P	11.70	12.37	9.52	13.34	13.41	19.02	13.98
32-17S	12.83	13.47	10.66	14.44	14.50	20.12	15.09
32-414P	14.44	15.09	12.27	16.02	16.09	21.77	16.68
32-414S	19.27	19.93	17.06	20.86	20.94	26.66	21.53
36-01P	9.84	10.15	6.61	11.15	11.38	17.37	12.14
36-01S	12.31	12.65	9.08	13.64	13.87	19.86	14.63
36-02P	13.81	14.12	10.60	15.12	15.35	21.32	16.09
36-02S	17.52	17.80	14.29	18.87	19.10	25.00	19.86
36-03P	14.12	14.44	10.85	15.39	15.69	21.57	16.42
36-03S	18.11	18.39	14.80	14.36	19.67	25.61	20.39
36-04P	14.04	14.36	10.81	15.33	15.60	21.53	15.32
36-04S	16.63	16.93	13.38	17.88	18.18	24.07	18.91
36-05P	17.37	17.67	14.08	18.62	18.91	24.83	19.65
36-05S	20.58	20.84	17.31	21.83	22.08	28.04	22.86
36-06P	17.20	17.46	13.89	18.45	18.75	24.68	19.51
36-06S	21.05	21.36	17.77	22.31	22.61	28.52	23.33
36-07P	13.57	13.83	10.34	14.80	15.12	21.05	15.87
36-07S	14.97	15.28	11.70	16.26	16.55	22.42	17.27
36-08P	13.11	13.43	9.88	14.44	14.69	20.62	15.39
36-08S	14.04	14.36	10.81	15.33	15.60	21.53	16.32
36-09P	15.60	15.94	12.37	16.93	17.20	23.09	17.88
36-09S	18.94	19.25	15.69	20.24	20.48	26.45	21.24
36-10P	12.94	13.21	9.73	14.23	14.50	20.43	15.24
36-10S	13.98	14.29	10.72	15.28	15.56	21.43	16.26
36-13P	11.12	11.38	7.87	12.39	12.67	18.60	13.41
36-13S	12.71	13.05	9.46	14.02	14.29	20.20	15.01
36-14P	17.27	17.54	14.02	18.56	18.87	24.72	19.57
36-14S	18.45	18.77	15.24	19.78	20.03	25.94	20.77
36-15P	10.96	11.32	7.73	12.29	12.56	18.45	13.30
36-15P	12.05	12.37	8.82	13.38	13.64	19.57	14.36
36-21P	17.27	17.54	14.02	18.56	18.87	24.72	19.57
36-21S	20.94	21.30	17.71	22.25	22.57	28.42	23.26
36-403P	15.60	15.94	12.37	16.93	17.20	23.09	17.88
36-403S	20.94	21.30	17.71	22.25	22.57	28.42	23.26
36-404P	18.13	18.43	14.93	19.40	19.68	25.65	20.43
36-404S	21.43	21.77	18.22	22.74	22.99	28.96	23.75
36-405P	21.39	21.72	18.18	22.72	22.97	28.92	23.67
36-405S	26.89	27.21	23.62	28.18	28.42	34.39	29.17
36-406P	19.00	19.30	15.73	20.33	20.60	26.52	21.32
36-406S	28.12	28.39	24.87	29.43	29.68	35.59	30.40
36-407P	21.48	21.77	18.22	22.74	22.99	28.96	23.75
36-407S	30.17	30.51	26.92	31.48	31.75	37.64	32.47
40-01P	13.59	13.81	9.37	17.94	.....	.....	16.93
40-01S	17.01	17.21	12.77	21.30	.....	.....	20.33
40-02P	12.94	13.15	8.68	17.25	.....	.....	16.26
40-02S	14.55	14.76	10.15	18.87	.....	.....	17.86
40-03P	17.37	17.54	13.09	21.66	.....	.....	20.63
40-03S	19.91	20.10	15.68	24.21	.....	.....	23.22
40-04P	20.38	21.57	17.14	25.69	.....	.....	24.70
40-04S	23.26	23.52	19.00	27.59	.....	.....	26.58
40-05P	23.09	23.33	18.89	27.44	.....	.....	26.45
40-05S	28.92	29.11	24.68	33.25	.....	.....	32.22
40-09P	18.13	18.37	13.87	22.46	.....	.....	21.43
40-09S	24.68	24.93	20.43	28.96	.....	.....	27.97
40-10P	25.80	26.03	21.55	30.12	.....	.....	29.11
40-10S	29.77	30.00	25.52	34.09	.....	.....	33.08
40-60P	40.17	40.36	36.77	43.57	.....	.....	42.83
40-60S	40.68	40.81	37.26	44.08	.....	.....	43.34

CAP AND CHAIN ASSEMBLIES

Fits MS and 97 type receptacles and plugs. Provides protection against live circuits, dirt and dust when connector is not in use. Add P, to the part number for plug cap and chain.

Cap and Chain: Amphenol Number	Shell Size	Net Ea. 1-9*	Cap Only, No Chain: Amphenol Number	Shell Size	Net Ea. 1-9*
9760-8	8S	$5.80	9760-8G	8S	$5.50
9760-10	10S, SL	.91	9760-10G	10S, SL	.59
9760-12	12, S, SL	.82	9760-12G	12, S, SL	.68
9760-14	14, 14S	.91	9760-14G	14, 14S	.75
9760-16	16, 16S	.99	9760-16G	16, 16S	.82
9760-18	18	1.17	9760-18G	18	1.01
9760-20	20	1.29	9760-20G	20	1.13
9760-22	22	1.48	9760-22G	22	1.29
9760-24	24	1.93	9760-24G	24	1.54
9760-28	28	2.04	9760-28G	28	1.88
9760-32	32	2.90	9760-32G	32	2.38
9760-36	36	3.33	9760-36G	36	2.73

CABLE CLAMPS

Sturdy Amphenol AN3057 Cable Clamp supports cable or wire at the plug or receptacle, prevents twisting or pulling at soldered connections.

Amphenol Number	Shell Size	Net Ea. 1-9*	Amphenol Number	Shell Size	Net Ea. 1-9*
AN3057-3	8S, 10S	$1.73	AN3057-20	32	$2.63
AN3057-4	12, 12S	1.78	AN3057-24	36	2.70
AN3057-6	14, 14S	1.83	AN3057-28	40	2.94
AN3057-8	16, 16S	1.98	AN3057-32	44	3.28
AN3057-10	18	1.67	97-3057-10-6†	18	1.77
AN3057-12	20, 22	1.79	97-3057-12-6†	20, 22	1.79
AN3057-16	24, 28	1.80			

†Step-down type. #Prices on request.

MINIATURE AN 165 SERIES CONNECTORS

Economical, quality miniature connectors feature quick mate and disconnect with reliable bayonet coupling. Pressure- and weather-proof. **Finish:** Aluminum shells with clear conversion seal. **Construction:** Internal rubber gasket cable clamp except those with potting construction. **Inserts:** Hard dielectric, rubber faced for environmental capability. Available in eight insert configurations with from 5–24 contacts in two shell sizes. **Contacts:** Gold over silver-plated; available in X and W alternate positions. **Mounting:** Small receptacles mount in $1\frac{13}{32}$" dia. hole, four .125 screw holes on $\frac{25}{32}$" centers. Large receptacles mount in $1\frac{1}{16}$" hole with four .125 screw holes on $1\frac{5}{64}$" centers. **Size:** Small plugs, $2\frac{1}{64}$" lg. x $\frac{57}{64}$" dia.; large plugs, $2\frac{1}{16}$" lg. x $1\frac{9}{64}$" dia. **Rated:** 500 volts rms except as otherwise indicated. **Weight:** 3 oz., average.

SMALL SIZE: FIVE #20 CONTACTS

Rated 600 volts rms.

Type	Pin Contacts: Amphenol Number 165-	Net Each, Lots of 1-49	50-99	Socket Contacts: Amphenol Number 165-	Net Each, Lots of 1-49	50-99
Plug	33	$ 7.99	$ 6.06	34	$ 9.82	$ 7.44
Recept.*	35	5.39	4.08	36	7.21	5.47
Plug†	33-1000	5.00	3.79	34-1000	6.81	5.17
Recept.†	35-1000	14.04	10.65	36-1000	16.08	12.19
Recept.	35-1002	9.82	7.44	36-1003	11.64	8.83

SMALL SIZE: NINE #20 CONTACTS

Plug	13	$ 8.17	$ 6.20	14	$10.69	$ 8.11
Recept.*	15	5.78	4.38	16	8.25	6.26
Plug	13-1000	5.34	4.05	14-1000	7.86	5.96
Recept.	15-1000	14.43	10.94	16-1000	17.39	13.19
Recept.	15-1002	10.16	7.71	16-1003	12.68	9.62

SMALL SIZE: EIGHT #20 AND ONE SHIELDED CONTACTS

Recept.*	73	$ 9.25	$ 7.01	83	$15.77	$11.96
Plug	82	11.64	8.83	61-1008	18.21	13.81
Recept.†	73-1000	18.29	13.87	83-1000	25.47	19.32
Plug†	82-1000	8.86	6.72	61	15.38	11.67
Recept.	73-1001	13.69	10.38	83-1001	20.21	15.33

SMALL SIZE: TWELVE #20 CONTACTS

Plug	9	$ 9.29	$ 7.05	10	$12.08	$ 9.16
Recept.*	11	6.91	5.24	12	9.60	7.28
Plug†	9-1000	6.47	4.90	10-1000	9.21	6.98
Recept.†	11-1000	15.51	11.76	12-1000	18.99	14.41
Recept.	11-1002	11.30	8.57	12-1002	14.08	10.68

LARGE SIZE: FOURTEEN #16 CONTACTS

Plug	29	$12.34	$ 9.36	30	$15.38	$11.67
Recept.*	31	7.56	5.73	32	10.56	8.01
Plug†	29-1000	7.26	5.50	30-1000	10.30	7.81
Recept.†	31-1000	38.99	29.57	32-1000	42.90	32.54
Recept.	31-1003	32.73	24.82	32-1006	36.65	27.79

LARGE SIZE: NINETEEN #20 AND ONE SHIELDED CONTACTS

Recept.*	84	$13.51	$10.25	85	$21.17	$16.05
Plug	86	18.21	13.81	62-1007	25.99	19.71
Recept.†	84-1000	46.03	34.91	85-1000	53.90	40.88
Plug†	86-1000	13.21	10.02	62	23.12	17.54
Recept.	84-1001	39.82	30.20	85-1001	47.72	36.19

LARGE SIZE: TWENTY-FOUR #20 CONTACTS

Plug	25	$16.52	$12.53	26	$19.04	$14.44
Recept.*	27	11.69	8.86	28	14.16	10.74
Plug†	25-1000	11.42	8.66	26-1000	13.94	10.57
Recept.†	27-1000	43.86	33.26	28-1000	47.11	35.73
Recept.	27-1005	37.60	28.52	28-1003	40.86	30.99

*Square flange. †Potting construction.

MS3057A CABLE CLAMPS & AN3420 BUSHING

Clamp for rubber-covered cables protected by tubing. Both halves float so cable is always centered for maximum strain relief. With unjacketed cable or wire bundles, use bushing. Shell sizes 16 and larger require two "telescoping" bushings (one corresponding size AN3420 with one smaller).

MS3057A Cable Clamps: Amph. No. 97-3057-	MS No. MS-3057-	Shell Size	Net Ea., Lots 1-9*	AN3420 Bushings: Amph. No. 9779-513-	MS No. AN-3420-	I.D., In.	Net Ea., Lots 1-9*
.....	.....	.....	.....	3	3	.130	$.211
1004	4A	10SL, 12S	$1.86	4	4	.220	.245
1007	6A	14, 14S	1.91	6	6	.312	.254
1008	8A	16, 16S	2.01	8	8	.437	.211
1010	10A	18	1.75	10	10	.562	.211
1012	12A	20, 22	1.75	12	12	.625	.245
1016	16A	24, 28	1.81	16	16	.750	.310
1020	20A	32	2.71	20	20	.937	.490
1024	24A	36	2.71	24	24	1.250	.490

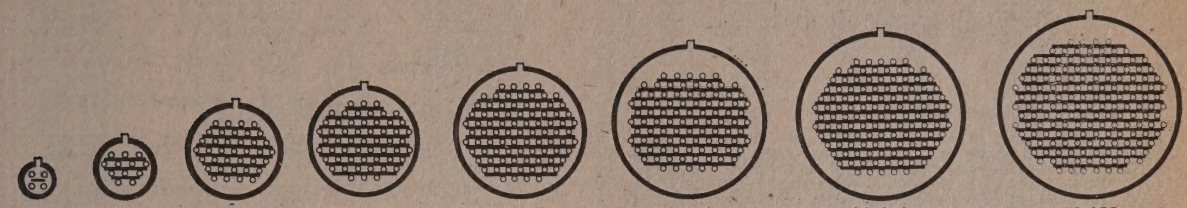
★QUANTITY DISCOUNTS FOR MS TYPES

Quantity In Lots	MS Connector: Discount	Multiplier	MS Fittings
10–49	−23%	0.770	Discounts vary with each item—complete price list on request
50–99	−31%	0.690	
100–999	−38%	0.620	

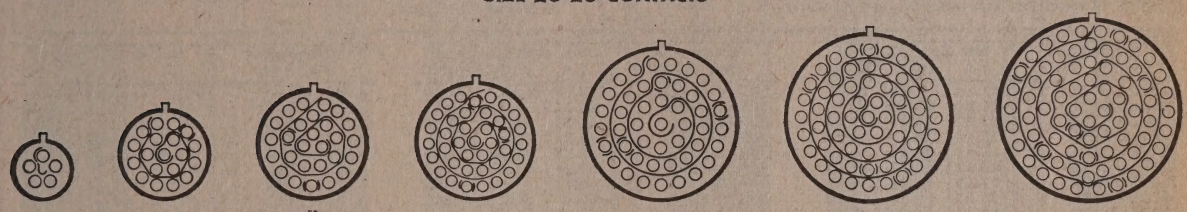
INSERT AND CONTACT SIZES

Hyphenated number below each diagram represents shell size (first number) and number of contacts (second number). Example: **14-37** indicates a size 14 shell with 37 contacts.

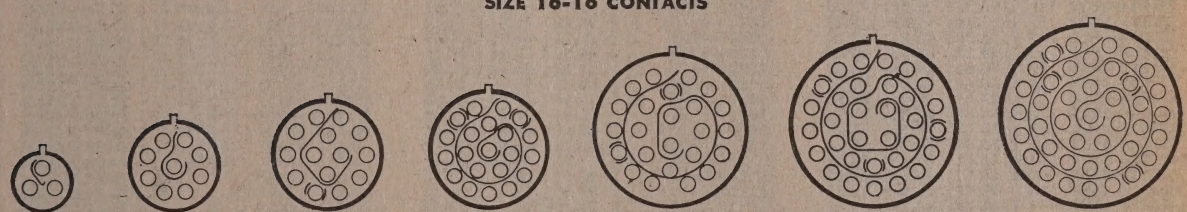
SIZE 23-22 CONTACTS



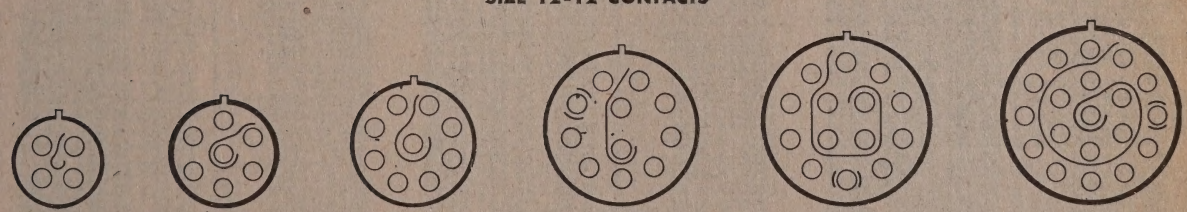
SIZE 20-20 CONTACTS



SIZE 16-16 CONTACTS



SIZE 12-12 CONTACTS



CONTACT SIZES AND PRICING (WHEN PURCHASED SEPARATELY)

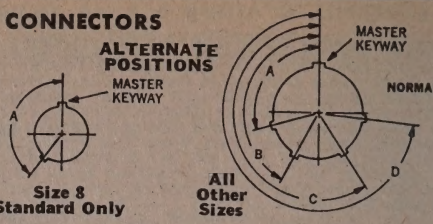
Standard construction socket contacts .687″ lg.; long construction, 1.017″ lg.

Contact Size	Wire Size AWG	Cur. Rtg., A	For Construction	Socket Contacts (Only) Amp. No. 348-100-	Socket Contacts (Only) MIL No. MS-	Socket Contacts (Only) Net Each, Lots 1-5499	Socket Contacts (Only) Net Each, Lots 5500-13,999	Pin Contacts (Only) Amp. No. 348-100-	Pin Contacts (Only) MIL No. MS-	Pin Contacts (Only) Net Each, Lots 1-5499	Pin Contacts (Only) Net Each, Lots 5500-13,999
23-22	22, 24, 26	5.0	Std.	2201S-02	90460A23-22	$0.326	$0.242	2202P-02	90461A23-22	$0.198	$0.147
			Long	2203S-02*	3343A23-22	.378	.28	2202P-02	90461A23-22	.198	.147
20-20	20, 22, 24	7.5	Std.	2000S-02	90460A20-20	.413	.304	2000P-02	90461A20-20	.217	.162
			Long	2003S-02*	3343A20-20	.414	.305	2000P-02	90461A20-20	.217	.162
16-16	16, 18, 20	13.0	Std.	1600S-02	90460A16-16	.473	.347	1600P-02	90461A16-16	.244	.18
			Long	1603S-02*	3343A16-16	.529	.39	1600P-02	90461A16-16	.244	.18
12-12	12, 14	23.0	Std.	1200S-02	90460A12-12	.833	.614	1200P-02	90461A12-12	.514	.437
			Long	1203S-02*	3343A12-12	.928	.685	1200P-02	90461A12-12	.514	.437

*Non-stock item subject to $100.00 min. order.

HOW TO ORDER ASTRO/348 CONNECTORS

348	-3	0	E	18	-85	S	1	(200)
A	B	C	D	E	F	G	H	I



(A) Series Designation: **348.**

(B) Type: **3**—Long MIL-C-81511, Rev. B. For blind mating; can't damage by wiping contacts across a mating shell. Even when mated, .090" contact separation is guaranteed. Won't mate with Type 4. **4**—Standard MIL-C-81511, Rev. B. Standard construction; for most applications. Won't mate with Type 3.

(C) Shell Style: **0**—Square Flange Receptacle. **1**—Cable Receptacle. **3**—Single Hole Mounting Receptacle. **5**—Hermetically-sealed, Solder Flange Receptacle. **6**—Straight Plug.

(D) Class: **E**—Environmental is standard. H, Hermetic and P, Potted are available on special order.

(E) Shell Size: **08, 10, 14, 16 and 18** are standard; **20, 22 and 24** available only in long construction.

(F) Insert Arrangement: **03, 04, 05, 07, 09, 11, 12, 14, 19, 21, 24, 27, 32, 37, 38, 41, 45, 55, 61, 74, 85, 92, 121 and 155.**

(G) Contact Style: **P**—Pin Contact. **S**—Socket Contact.

(H) Shell Position: 1, normal; 2, 3, 4, 5 or 6 available.

(I) Deviations: Omit if no cable clamp is desired; **(200)**—connector with cable clamp; **(201)**—connector less contacts (separate contacts listed on the previous page).

Write for key and keyway arrangement for standard and long construction types.

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
20E08-04P1*	$24.18	$22.04	$19.92
20E08-04S1	23.80	21.69	19.60
20E10-12P1	28.69	26.15	23.63
20E10-12S1	28.94	26.38	23.84
20E14-37P1	41.42	37.75	34.11
20E14-37S1	45.22	41.22	37.24
20E16-55P1	47.20	43.02	38.87
20E16-55S1	55.25	48.54	43.86
20E18-85P1	50.13	45.69	41.28
20E18-85S1	60.84	55.46	50.10
21E08-04P1	24.25	22.10	19.97
21E08-04S1	22.80	20.78	18.78
21E10-12P1	22.06	20.11	18.17
21E10-12S1	22.31	20.34	18.38
21E14-37P1	41.46	37.79	34.14
21E14-37S1	45.22	41.22	37.24
21E16-55P1	47.20	43.02	38.87
21E16-55S1	53.25	48.54	43.86
21E18-85P1	50.13	45.69	41.28
21E18-85S1	60.86	55.48	50.12
23E08-04P1	28.62	26.09	23.57
23E08-04S1	27.88	25.41	22.96
23E10-12P1	30.37	27.68	25.01
23E10-12S1	30.62	27.91	25.22
23E14-37P1	33.92	30.91	27.93
23E14-37S1	46.41	42.30	38.22
23E16-55P1	49.17	44.82	40.50
23E16-55S1	55.23	50.34	45.48
23E18-85P1	51.28	46.74	42.23
23E18-85S1	62.01	56.52	51.07
26E08-04P1	22.82	20.80	18.80
26E08-04S1	21.57	19.66	17.76
26E10-12P1	26.78	24.41	22.05
26E10-12S1	27.03	24.64	22.26
26E14-37P1	41.23	37.58	33.95
26E14-37S1	44.99	41.01	37.05
23E16-55P1	47.24	43.06	38.90
26E16-55S1	53.30	48.58	43.89
26E18-85P1	51.19	46.66	42.16
26E18-85S1	61.05	55.65	50.28
30E08-04P1*	25.69	21.01	18.89
30E08-04S1*	25.23	20.63	18.47
30E10-03P1	28.60	23.39	20.94
30E10-03S1	28.20	23.05	20.64
30E10-05P1	28.92	23.65	21.17
30E10-05S1	29.21	23.88	21.38
30E10-12P1	30.41	21.87	22.26
30E10-12S1	31.74	25.95	23.23
30E14-04P1*	30.36	24.83	22.23
30E14-04S1*	30.46	24.91	22.30
30E14-09P1	29.71	24.30	21.75
30E14-09S1	31.76	25.97	23.25
30E14-19P1	32.89	26.90	24.08
30E14-19S1	35.64	29.14	26.09
30E14-37P1	45.71	37.38	33.46
30E14-37S1	52.58	43.00	38.49
30E16-07P1	34.75	28.71	25.44
30E16-07S1	36.20	29.60	26.50
30E16-14P1	32.22	26.34	23.58
30E16-14S1	34.89	28.53	25.54
30E16-27P1	35.88	29.34	26.27
30E16-27S1	42.39	34.66	31.03
30E16-55P1	52.12	42.62	38.16
30E16-55S1	62.68	51.25	45.88
30E18-09P1	35.83	29.30	26.23
30E18-09S1	38.56	31.53	28.22
30E18-21P1	45.30	37.04	33.16
30E18-21S1	54.53	44.59	39.92
30E18-38P1	43.18	35.31	31.61
30E18-38S1	50.97	41.68	37.31
30E18-85P1	55.47	45.36	40.61

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
30E18-85S1	$74.32	$60.77	$54.40
30E20-11P1	42.58	34.82	31.17
30E20-11S1	45.86	37.50	33.57
30E20-24P1	44.87	36.69	32.85
30E20-24S1	49.28	40.30	36.07
30E20-45P1	52.24	42.72	38.24
30E20-45S1	60.17	49.20	44.05
30E20-92P1	62.05	50.74	45.42
30E20-92S1	80.03	65.44	58.58
30E22-14P1	47.21	38.60	34.56
30E22-14S1	50.80	41.54	37.19
30E22-32P1	48.22	39.43	35.30
30E22-32S1	56.58	46.27	41.42
30E22-61P1	57.14	46.72	41.82
30E22-61S1	70.12	57.34	51.33
30E22-121P1	71.96	58.84	52.67
30E22-121S1	96.49	78.90	70.63
30E24-19P1	51.74	42.31	37.87
30E24-19S1	58.58	47.90	42.88
30E24-41P1	53.67	43.88	39.28
30E24-41S1	65.76	53.77	48.14
30E24-74P1	63.86	52.22	46.75
30E24-74S1	81.55	66.68	59.69
30E24-155P1	86.15	70.44	63.06
30E24-155S1	118.46	96.87	86.72
31E08-04P1*	25.93	21.20	18.98
31E08-04S1*	25.64	20.97	18.77
31E10-03P1*	28.58	23.37	20.92
31E10-03S1*	28.44	23.25	20.82
31E10-05P1*	29.06	23.76	21.27
31E10-05S1*	29.16	23.84	21.35
31E10-12P1*	28.82	23.57	21.10
31E10-12S1*	31.74	25.95	23.23
31E14-04P1*	30.34	24.81	22.21
31E14-04S1*	30.41	24.87	22.26
31E14-09P1*	29.93	24.47	21.91
31E14-09S1*	31.76	25.97	23.25
31E14-19P1*	33.13	27.09	24.26
31E14-19S1*	25.83	29.30	26.23
31E14-37P1*	45.71	37.38	33.46
31E14-37S1*	46.92	38.36	34.35
31E16-07P1*	34.75	28.41	25.44
31E16-07S1*	36.20	29.60	26.50
31E16-14P1*	32.73	26.76	23.96
31E16-14S1*	36.22	29.62	26.51
31E16-27P1*	36.32	29.69	26.58
31E16-27S1*	50.22	41.06	36.76
31E16-55P1*	52.12	42.62	38.16
31E16-55S1*	62.70	51.27	45.90
31E18-09P1*	35.62	29.12	26.07
31E18-09S1*	38.65	31.61	28.29
31E18-21P1*	36.70	30.01	26.87
31E18-21S1*	41.66	34.07	30.50
31E18-38P1*	41.25	33.73	30.20
31E18-38S1*	50.08	40.95	36.66
31E18-85P1*	55.11	45.06	40.34
31E18-85S1*	69.06	56.47	50.56
31E20-11P1*	42.39	34.66	31.03
31E20-11S1*	45.76	37.42	33.50
31E20-24P1*	42.70	34.92	31.26
31E20-24S1*	48.63	39.76	35.60
31E20-45P1*	50.15	41.00	36.71
31E20-45S1*	57.83	47.29	42.34
31E20-92P1*	61.91	50.62	45.32
31E20-92S1*	81.04	66.27	54.32
31E22-14P1*	45.11	36.89	33.02
31E22-14S1*	49.23	40.26	36.04
31E22-32P1*	45.59	37.28	33.37
31E22-32S1*	53.74	43.94	39.34
31E22-61P1*	57.06	46.66	41.77
31E22-61S1*	70.12	57.34	51.33

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
31E22-121P1*	$67.47	$55.17	$49.34
31E22-121S1*	93.64	76.57	68.55
31E24-19P1*	51.91	42.44	38.00
31E24-19S1*	58.77	48.06	43.02
31E24-41P1*	53.62	43.84	39.25
31E24-41S1*	65.71	53.73	48.10
31E24-74P1*	63.71	52.10	46.64
31E24-74S1*	80.32	65.67	58.79
31E24-155P1*	86.00	70.32	62.96
31E24-155S1*	118.29	96.73	86.59
33E08-04P1*	26.19	21.42	19.18
33E08-04S1*	26.51	21.67	19.40
33E10-03P1*	29.66	24.26	21.72
33E10-03S1*	30.05	24.57	22.00
33E10-05P1*	30.32	24.79	22.19
33E10-05S1*	30.82	25.20	22.56
33E10-12P1*	31.47	25.73	23.04
33E10-12S1*	32.80	26.82	24.01
33E14-04P1*	32.17	26.31	23.55
33E14-04S1*	32.22	26.34	23.58
33E14-09P1*	31.42	25.69	23.00
33E14-09S1*	33.11	27.07	24.24
33E14-19P1*	34.65	28.34	25.37
33E14-19S1*	37.40	30.58	27.38
33E14-37P1	42.56	34.80	31.15
33E14-37S1	53.93	44.10	39.48
33E16-07P1*	35.30	28.87	25.84
33E16-07S1*	37.98	31.35	27.80
33E16-14P1*	33.88	27.71	24.80
33E16-14S1*	38.15	31.19	27.92
33E16-27P1*	35.83	29.30	26.23
33E16-27S1*	44.30	36.30	32.49
33E16-55P1	54.10	44.24	39.60
33E16-55S1	64.70	52.91	47.36
33E18-09P1*	37.66	30.80	27.57
33E18-09S1*	40.41	33.04	29.58
33E18-21P1*	38.53	31.51	28.21
33E18-21S1*	43.50	35.57	31.84
33E18-38P1*	43.11	35.25	31.56
33E18-38S1*	52.39	42.84	38.35
33E18-85P1	57.30	46.86	41.95
33E18-85S1	76.39	62.46	55.92
33E20-11P1*	44.49	36.38	32.56
33E20-11S1*	47.86	39.13	35.03
33E20-24P1*	44.80	36.63	32.79
33E20-24S1*	50.72	41.48	37.13
33E20-45P1*	52.36	42.82	38.33
33E20-45S1*	62.22	50.88	45.55
33E20-92P1*	63.96	52.30	46.82
33E20-92S1*	81.98	67.04	60.01
33E22-14P1*	49.06	40.12	35.92
33E22-14S1*	53.91	44.08	39.46
33E22-32P1*	50.29	41.12	36.82
33E22-32S1*	58.41	47.76	42.76
33E22-61P1*	58.99	48.24	43.18
33E22-61S1*	73.14	59.80	53.54
33E22-121P1*	73.79	60.34	54.01
33E22-121S1*	98.32	80.39	71.97
33E24-19P1*	41.47	33.91	30.36
33E24-19S1*	61.74	50.48	45.19
33E24-41P1*	57.47	46.99	42.07
33E24-41S1*	69.47	56.81	50.86
33E24-74P1*	67.57	55.25	49.46
33E24-74S1*	85.23	69.69	62.39
33E24-155P1	89.88	73.50	65.80
33E24-155S1	121.12	99.04	88.66
36E08-04P1*	28.10	22.98	20.57
36E08-04S1*	28.22	23.07	20.66
36E10-03P1	26.70	21.83	19.55
36E10-03S1	29.76	24.34	21.79
Alternate key†	2.00	1.75	1.50

*Non-stock item subject to **$100.00** minimum order. †Add to price for key **other than 1.**

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
36E10-05P1	$31.06	$25.40	$22.74
36E10-05S1	30.68	25.08	22.46
36E10-12P1	32.22	26.34	23.58
36E10-12S1	30.17	24.67	22.09
36E14-04P1	33.62	27.49	24.61
36E14-04S1	33.66	27.53	24.64
36E14-09P1	31.86	26.05	23.32
36E14-09S1	35.28	28.85	25.82
36E14-19P1	36.72	30.03	26.88
36E14-19S1	39.47	32.28	28.90
36E16-07P1	38.58	31.55	28.24
36E16-07S1	40.24	32.91	29.46
36E16-14P1	36.46	29.81	26.69
36E16-14S1	40.05	32.75	29.32
36E16-27P1	40.12	32.81	29.37
36E16-27S1	46.19	37.77	33.82
36E16-55P1	56.22	45.97	41.15
36E16-55S1	66.82	54.64	48.92
36E18-09P1	40.17	32.85	29.41
36E18-09S1	42.89	35.07	31.40
36E18-21P1	40.87	33.42	29.92
36E18-21S1	45.86	37.50	33.57
36E18-38P1	45.45	37.16	33.27
36E18-38S1	54.75	44.77	40.08
36E18-85P1	59.98	49.04	43.91
36E18-85S1	79.06	64.65	57.88
36E20-11P1	60.07	49.12	43.98
36E20-11S1	63.59	52.00	46.55
36E20-24P1	60.10	49.14	43.99
36E20-24S1	66.03	53.99	48.33
36E20-45P1	65.57	53.62	48.00
36E20-45S1	77.71	68.55	56.89
36E20-92P1	79.64	65.12	58.30
36E20-92S1	98.32	80.39	71.97
36E22-14P1	65.11	53.24	47.66
36E22-14S1	69.23	56.61	50.68
36E22-32P1	65.59	53.64	48.02
36E22-32S1	73.74	60.30	58.98
36E22-61P1	65.45	53.52	47.91
36E22-61S1	78.44	64.14	57.42
36E22-121P1	88.72	72.63	65.02
36E22-121S1	113.33	92.67	82.96
36E24-19P1	66.63	54.48	48.77
36E24-19S1	72.41	59.21	53.01
36E24-41P1	67.95	55.57	49.74
36E24-41S1	80.46	65.79	58.90
36E24-74P1	71.11	58.15	52.06
36E24-74S1	92.13	75.33	67.44
36E24-155P1	101.50	82.99	74.30
36E24-155S1	129.36	105.77	94.69
40E08-04P1	27.42	22.42	20.08
40E08-04S1	26.99	22.07	19.76
40E10-03P1	30.48	24.93	22.31
40E10-03S1	29.59	24.20	21.66
40E10-05P1	30.82	25.20	22.56
40E10-05S1	30.68	25.08	22.46
40E10-12P1	32.53	26.60	23.81
40E10-12S1	32.82	26.84	24.03
Alternate key†	2.00	1.75	1.50

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
40E14-04P1	$31.62	$25.85	$23.14
40E14-04S1	30.82	25.20	22.56
40E14-09P1	31.35	25.63	22.95
40E14-09S1	32.27	26.38	23.62
40E14-19P1	34.51	28.22	25.26
40E14-19S1	36.51	29.85	26.72
40E14-37P1	46.97	38.40	34.38
40E14-37S1	51.28	41.93	37.54
40E16-07P1	36.10	29.52	26.43
40E16-07S1	36.63	29.95	26.81
40E16-14P1	34.12	27.90	24.98
40E16-14S1	36.22	29.62	26.51
40E16-27P1	37.86	30.96	27.71
40E16-27S1	42.92	35.09	31.42
40E16-55P1	53.52	43.46	39.18
40E16-55S1	60.39	49.38	44.21
40E18-09P1	37.47	30.64	27.43
40E18-09S1	38.92	31.82	28.49
40E18-21P1	38.19	31.23	27.96
40E18-21S1	41.42	33.87	30.32
40E18-38P1	42.70	34.92	31.26
40E18-38S1	49.74	40.67	36.41
40E18-85P1	56.85	46.48	41.61
40E18-85S1	68.99	56.41	50.50
41E08-04P1*	27.49	22.48	20.13
41E08-04S1*	25.86	21.14	18.93
41E10-03P1*	22.96	18.78	16.81
41E10-03S1*	22.36	18.29	16.37
41E10-05P1*	23.52	19.23	17.22
41E10-05S1*	30.51	24.95	22.33
41E10-12P1*	25.01	20.45	18.31
41E10-12S1*	25.30	20.69	18.52
41E14-04P1*	25.21	20.61	18.45
41E14-04S1*	33.64	27.51	24.63
41E14-09P1*	31.42	25.69	23.00
41E14-09S1	32.19	26.33	23.57
41E14-19P1*	34.51	28.22	25.26
41E14-19S1*	36.51	29.85	26.72
41E14-37P1*	47.01	38.44	34.42
41E14-37S1*	50.80	41.54	37.19
41E16-07P1*	36.10	29.52	26.43
41E16-07S1*	36.63	29.95	26.81
41E16-14P1*	30.46	24.91	20.30
41E16-14S1*	37.78	30.90	27.66
41E16-27P1*	37.78	30.90	27.66
41E16-27S1*	42.94	35.11	31.44
41E16-55P1*	53.52	43.79	39.18
41E16-55S1*	60.39	49.38	44.21
41E18-09P1*	37.57	30.72	27.50
41E18-09S1*	39.01	31.90	28.56
41E18-21P1*	38.19	31.23	27.96
41E18-21S1*	41.40	33.85	30.31
41E18-38P1*	41.88	34.25	30.66
41E18-38S1*	50.05	40.93	36.64
41E18-85P1*	56.85	46.48	41.61
41E18-85S1*	69.02	56.43	50.52
43E08-04P1*	32.46	26.54	23.76
43E08-04S1*	31.62	25.85	23.14
43E10-03P1*	32.46	26.54	23.76
43E10-03S1*	31.86	26.05	23.32
Alternate key†	2.00	1.75	1.50

Amphenol No. 348-	Net Each, Lots of 1-9	10-24	25-99*
43E10-05P1*	$33.06	$27.03	$24.20
43E10-05S1*	32.70	26.74	23.94
43E10-12P1*	34.43	28.16	25.21
43E10-12S1*	34.72	28.39	25.42
43E14-04P1*	33.57	27.45	24.57
43E14-04S1*	32.77	26.80	23.99
43E14-09P1*	32.77	26.80	23.99
43E14-09S1*	33.59	27.47	24.59
43E14-19P1*	35.78	29.26	26.20
43E14-19S1*	37.81	30.92	27.68
43E14-37P1	38.46	31.45	28.15
43E14-37S1	52.63	43.03	38.53
43E16-07P1*	38.03	31.09	27.84
43E16-07S1*	38.56	31.53	28.22
43E16-14P1*	35.83	29.30	26.23
43E16-14S1*	38.48	31.47	28.17
43E16-27P1*	39.50	32.30	28.91
43E16-27S1*	44.97	36.77	32.92
43E16-55P1	55.76	45.60	40.82
43E16-55S1	62.63	51.21	45.85
43E18-09P1*	38.89	31.80	28.47
43E18-09S1*	40.34	32.99	29.53
43E18-21P1*	39.62	32.39	29.00
43E18-21S1*	42.82	35.01	31.35
43E18-38P1*	44.07	36.04	32.26
43E18-38S1*	52.10	42.60	38.14
43E18-85P1	58.15	47.55	42.56
43E18-85S1	70.32	57.50	51.47
46E08-04P1	25.88	21.16	18.95
46E08-04S1	24.46	20.00	17.90
46E10-03P1	32.46	26.54	23.76
46E10-03S1	31.86	26.05	23.32
46E10-05P1	33.06	27.03	24.20
46E10-05S1	32.70	26.74	23.94
46E10-12P1	34.43	28.16	25.21
46E10-12S1	34.72	28.39	25.42
46E14-04P1	33.57	27.45	24.57
46E14-04S1	32.77	26.80	23.99
46E14-09P1	32.77	26.80	23.99
46E14-09S1	33.59	27.47	24.59
46E14-19P1	35.78	29.26	26.20
46E14-19S1	37.81	30.92	27.68
46E14-37P1	38.46	31.45	28.15
46E14-37S1	52.63	43.03	38.53
46E16-07P1	38.03	31.09	27.84
46E16-07S1	38.56	31.53	28.22
46E16-14P1	35.83	29.30	26.23
46E16-14S1	38.48	31.47	28.17
46E16-27P1	39.50	32.30	28.91
46E16-27S1	44.97	36.77	32.92
46E16-55P1	55.76	45.60	40.82
46E16-55S1	62.63	51.21	45.85
46E18-09P1	38.89	31.80	28.47
46E18-09S1	40.34	32.99	29.53
46E18-21P1	39.62	32.39	29.00
46E18-21S1	42.82	35.01	31.35
46E18-38P1	44.07	36.04	32.26
46E18-38S1	52.10	42.60	38.14
46E18-85P1	58.15	47.55	42.56
46E18-85S1	70.32	57.50	51.47
Alternate key†	2.00	1.75	1.50

*Non-stock item subject to **$100.00** minimum order. †Add to price for key **other than 1.** 201 Types connectors less contacts are non-stock items subject to **$100.00** per line item minimum order; write for full information and prices.

PLASTIC RETAINING CAPS

Fits both long or standard connectors.

Amph. No. 348-	Shell Size	Net Each, Lots of 1-9	10-24	25-99*
193-08000*	8	$0.20	$0.18	$0.16
193-10000*	10	.20	.18	.16
193-14000*	14	.21	.19	.17
193-16000*	16	.21	.19	.17
193-18000*	18	.21	.19	.17

PLUG CAPS WITH CHAINS

Metal cap seals face of unmated connectors. Basic Part No. M81511/17.

For Standard Connectors				
139-08001	8	$4.14	$3.39	$3.03
139-10001	10	4.53	3.70	3.32
139-14001	14	5.01	4.10	3.67
139-16001	16	5.35	4.38	3.92
139-18001	18	5.49	4.49	4.02
For Long Connectors				
289-08001*	8	$ 9.25	$ 7.57	$ 6.77
289-10001*	10	9.69	7.92	7.09
289-14001*	14	9.69	7.92	7.09
289-16001*	16	12.58	10.29	9.21
289-18001*	18	12.39	10.13	9.07
289-20001*	20	18.22	14.90	13.34
289-22001*	22	18.17	14.86	13.30
289-24001*	24	12.12	9.91	8.87

RECEPTACLE CAPS WITH CHAINS

Same as above, but use with long or std. connectors. Basic Part No. M81511/18.

140-08001	8	$ 6.55	$5.36	$4.80
140-10001	10	6.75	5.52	4.94
140-14001	14	6.51	5.32	4.76
140-16001	16	6.84	5.60	5.01
140-18001	18	7.04	5.75	5.15
140-20001	20	10.56	8.63	7.73
140-22001	22	11.47	9.38	8.40
140-24001	24	10.17	8.32	7.44

STRAIGHT CABLE CLAMPS

Support cable or wire at connector; prevent twisting or strain on wire terminations. For either long or standard connectors. Basic Part No. M81511/13.

Amph. No. 348-	Shell Size	Net Each, Lots of 1-9	10-24	25-99*
260-08001	8	$ 7.09	$5.79	$5.19
260-10001	10	6.75	5.52	4.94
260-14001	14	6.99	5.72	5.12
260-16001	16	7.42	6.07	5.43
260-18001	18	7.52	6.15	5.50
260-20001	20	10.68	8.73	7.81
260-22001	22	11.23	9.18	8.22
260-24001	24	11.95	9.77	8.75

DUMMY RECEPTACLES

Anchor disconnected plugs; prevent damage or dirt buildup on plug face. Basic Part No. M81511/19.

For Standard Connectors				
167-08000-01	8	$4.63	$3.78	$3.39
167-10000-01	10	4.92	4.02	3.60
167-14000-01	14	5.66	4.63	4.15
167-16000-01	16	7.71	6.81	5.64
167-18000-01	18	3.28	2.68	2.40
For Long Connectors				
292-08000-1*	8	$16.77	$13.71	$12.28
292-10000-1*	10	16.24	13.28	11.89
292-14000-1*	14	16.48	13.48	12.07
292-16000-1*	16	18.60	15.21	13.62
292-18000-1*	18	18.36	15.02	13.44
292-20000-1*	20	34.80	28.45	25.47
292-22000-1*	22	36.68	29.99	26.85
292-24000-1*	24	37.40	30.58	27.38

*Non-stock item subject to **$100.00** per line item minimum order.

ACCESSORY CONTACT TOOLS

Insertion Tools

Contact Size	Amphenol Number	MIL MS No.	Net Each
23-22	294-278	MS3323-22	$ 6.83
20-20	294-27	MS3320-20	10.95
16-16	294-30	MS3320-16	10.60

Pin Contact Removal Tools

23-22	294-286	MS3342-23	$5.12
20-20	294-28	MS3342-20	9.54
16-16	294-31	MS3342-16	8.05

Socket Contact Removal Tools

23-22	294-287	MS3344-23	$14.12
20-20	294-29	MS3344-20	21.69
16-16	294-32	MS3344-16	28.57

Crimping Tools

Amphenol No. 294-268 MIL No. MS3198 Contact Crimping Tool—With 4 notched indentors. Net Each.....**$153.38**

Amphenol No. 294-1551 Contact Locator—For use with above crimping tool. Net Each.....**$14.97**

Amphenol No. 294-1462, MIL No. MS3191-4 Daniels Crimping Pliers—For #16 or #20 contacts. Net Each.**$145.73**

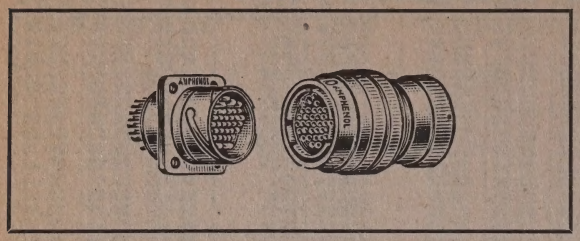
Amphenol No. 294-1722-01 Contact Locator—For use with Daniels crimping tool, above. Net Each.....**$75.55**

Amphenol No. 294-1718, MIL No. MS3191-4 Buchanan Crimping Pliers—For #16 or #20 contacts. Net...**$159.74**

Amphenol No. 294-1722-02 Contact Locator—For use with Buchanan crimping pliers, above. Net Each.....**$75.55**

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

MINNI-E® SERIES 67 MINIATURE CONNECTORS



Quick disconnect, multi-contact, miniature bayonet connectors are environment sealed with unitized back end grommet or provision for potting. Shells are polarized for easy mating alignment; single key on 12, 14 and 18 sizes, 5 keys for sizes 20 and 22. Spring-loaded coupling ring for positive locking action in bayonet slot; stainless steel slots and pins. Hooded contacts resist test prod damage. Contacts gold plated over silver. Visual engagement indicator built-in. Face seal gasket has individual barriers; hard insert dielectric. **Insulation Resistance:** "E" type following altitude-moisture resistance test, 1000 megs min.; MIL-C-5015 minimum following type "E" test, 100 megs. **Test Voltage:** 1500 V rms. 70,000 ft. on sealed connectors. **Vibration:** 10–2,000 Hz at 20 G's per Method 204 of MIL-STD-202A. **Temperature Cycling:** Per MIL-C-5015, Para. 4.5.3 increased to 257° F max., −67° F. min. Diallyl phthalate dielectric except hermetically sealed type. **Type P:** Potting mold meets MIL-C-5015. Indicated by P in number (example: 67-01P12-7S). Comes with disposable polyethylene potting form. **Type E:** Meets MIL-C-5015. With unitized grommet and clamp; individual wire seal. **Type J:** For use with jacketed cables; has waterproofing type cable clamp. **Type C:** General duty construction has standard type cable clamp to provide strong support for jacketed cables or unjacketed individual wire leads. When potted, meets requirements of "E" performance while providing a mechanical cable support. **Type H:** Glass dielectric hermetically sealed. **For X or W Positioning:** Specify by adding appropriate suffix, and **20c** (1–24), **18c** (25–99) or **15c** (100–199) to net price shown.

CABLE-TO-CABLE RECEPTACLES

WITH FORM FOR POTTING SEAL

No. Contacts	Pin Contacts: Amph. No. 67-01-	Net Each, Lots of: 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-01-	Net Each, Lots of: 1-24	25-99	100-199
7	P12-7P	$14.90	$11.30	$ 9.50	P12-7S	$16.95	$12.86	$10.81
3	P12-60P	14.80	11.23	9.44	P12-60S	14.86	11.27	9.48
5	P14-5P	21.94	16.64	13.99	P14-5S	23.00	17.44	14.67
9	P14-9P	22.27	16.89	14.20	P14-9S	24.14	18.31	15.39
12	P14-12P	22.75	17.25	14.51	P14-12S	25.61	19.42	16.33
9	P14-61P	25.85	19.61	16.49	P14-61S	30.24	22.94	19.29
5	P14-63P	24.38	18.49	15.55	P14-63S	26.29	19.94	16.76
24	P18-24P	18.28	13.86	11.66	P18-24S	22.52	17.08	14.36
20	P18-62P	21.76	16.50	13.87	P18-62S	26.66	20.22	17.00
14	P18-64P	17.04	12.92	10.86	P18-64S	18.90	14.33	12.05
11	P18-65P	21.90	16.61	13.97	P18-65S	17.80	13.50	11.35
37	P20-37P	18.13	13.75	11.56	P20-37S	24.90	18.89	15.88
19	P20-66P	15.81	11.99	10.08	P20-66S	18.05	13.69	11.51
48	P22-48P	21.86	16.58	13.94	P22-48S	29.41	22.31	18.76
25	P22-67P	18.28	13.86	11.66	P22-67S	21.24	16.11	13.54
38	P22-68P	19.67	14.92	12.54	P22-68S	26.04	19.75	16.61
42	P22-69P	27.32	20.72	17.42	P22-69S	21.61	16.39	13.78

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$27.18	$20.61	$17.33	E12-7S	$29.23	$22.17	$18.64
3	E12-60P	26.66	20.22	17.00	E12-60S	27.47	20.83	17.52
5	E14-5P	26.85	20.36	17.12	E14-5S	27.90	21.16	17.79
9	E14-9P	27.14	20.58	17.31	E14-9S	29.00	22.00	18.49
12	E14-12P	29.77	22.58	18.98	E14-12S	32.62	24.74	20.80
9	E14-61P	31.90	24.19	20.34	E14-61S	36.29	27.52	23.14
5	E14-63P	31.38	23.80	20.01	E14-63S	33.29	25.25	21.23
24	E18-24P	28.94	21.95	18.45	E18-24S	33.14	25.14	21.13
20	E18-62P	32.27	24.48	20.58	E18-62S	37.18	28.20	23.71
14	E18-64P	27.66	20.98	17.64	E18-64S	29.52	22.39	18.82
11	E18-65P	32.85	24.92	20.95	E18-65S	28.75	21.81	18.33
37	E20-37P	24.32	18.45	15.51	E20-37S	31.09	23.58	19.83
19	E20-66P	21.24	16.11	13.54	E20-66S	23.52	17.84	15.00
48	E22-48P	37.86	28.72	24.14	E22-48S	45.48	34.49	29.00
25	E22-67P	31.19	23.66	19.89	E22-67S	34.13	25.89	21.77
38	E22-68P	33.66	25.53	21.46	E22-68S	40.03	30.36	25.53
42	E22-69P	32.89	24.95	20.97	E22-69S	40.37	30.62	25.74

WITH CLAMP FOR JACKETED CABLE

7	J12-7P	$25.96	$19.69	$16.55	J12-7S	$28.42	$21.56	$18.12
3	J12-60P	14.80	11.23	9.44	J12-60S	14.96	11.27	9.48
5	J14-5P	25.19	19.11	16.06	J14-5S	26.33	19.97	16.79
9	J14-9P	25.48	19.33	16.25	J14-9S	27.47	20.83	17.52
12	J14-12P	25.96	19.69	16.55	J14-12S	29.00	22.00	18.49
9	J14-61P	29.15	22.11	18.59	J14-61S	33.58	25.47	21.41
5	J14-63P	29.62	22.47	18.89	J14-63S	29.52	22.39	18.82
24	J18-24P	17.62	13.36	11.23	J18-24S	21.53	16.33	13.73
20	J18-62P	20.72	15.72	13.21	J18-62S	25.67	19.47	16.37
14	J18-64P	15.71	11.92	10.02	J18-64S	17.51	13.28	11.17
11	J18-65P	20.51	15.56	13.08	J18-65S	16.99	12.89	10.84
37	J20-37P	67.13	50.92	42.81	J20-37S	75.27	57.09	48.00
19	J20-66P	64.89	49.22	41.38	J20-66S	67.61	51.28	43.11
48	J22-48P	42.33	32.11	26.99	J22-48S	50.90	38.61	32.46
25	J22-67P	39.04	29.61	24.90	J22-67S	42.15	31.97	26.88
38	J22-68P	42.27	32.06	26.95	J22-68S	47.42	35.97	30.24
42	J22-69P	40.76	30.91	25.99	J22-69S	47.75	36.22	30.45

WITH STANDARD CABLE CLAMP

7	C12-7P	$18.34	$13.91	$11.70	C12-7S	$20.37	$15.45	$12.99
3	C12-60P	18.24	13.83	11.63	C12-60S	19.04	14.44	12.14
5	C14-5P	24.09	18.27	15.36	C14-5S	25.19	19.11	16.06
9	C14-9P	24.47	18.56	15.60	C14-9S	26.33	19.97	16.79
12	C14-12P	24.90	18.89	15.88	C14-12S	27.80	21.09	17.73
9	C14-61P	28.05	21.27	17.89	C14-61S	32.42	24.59	20.67
5	C14-63P	26.56	20.14	16.94	C14-63S	28.46	21.59	18.15
24	C18-24P	21.28	16.14	13.57	C18-24S	25.52	19.36	16.28
20	C18-62P	24.76	18.78	15.79	C18-62S	29.66	22.50	18.62
14	C18-64P	20.00	15.17	12.75	C18-64S	21.90	16.61	13.97
11	C18-65P	24.86	18.86	15.85	C18-65S	20.06	15.75	13.24
37	C20-37P	20.24	15.35	12.91	C20-37S	26.99	20.47	17.21
19	C20-66P	17.91	13.58	11.42	C20-66S	20.18	15.31	12.87
48	C22-48P	32.04	24.30	20.43	C22-48S	39.62	30.05	25.26
25	C22-67P	23.99	18.20	15.30	C22-67S	26.95	20.44	17.19
38	C22-68P	25.38	19.25	16.18	C22-68S	31.71	24.05	20.22
42	C22-69P	25.56	19.39	16.30	C22-69S	33.00	25.03	21.04

PLUGS

WITH FORM FOR POTTING SEAL

No. Contacts	Pin Contacts: Amph. No. 67-06-	Net Each, Lots of: 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-06-	Net Each, Lots of: 1-24	25-99	100-199
7	P12-7P	$13.77	$10.44	$ 8.78	P12-7S	$15.81	$11.99	$10.08
3	P12-60P	13.66	10.36	8.71	P12-60S	14.47	10.94	9.23
5	P14-5P	11.61	8.81	7.41	P14-5S	12.71	9.64	8.10
9	P14-9P	12.01	9.11	7.66	P14-9S	13.81	10.47	8.80
12	P14-12P	12.42	9.42	7.92	P14-12S	15.34	11.63	9.78
9	P14-61P	15.42	11.70	9.83	P14-61S	19.81	15.02	12.63
5	P14-63P	14.10	10.69	8.99	P14-63S	16.00	12.14	10.20
24	P18-24P	15.01	11.38	9.57	P18-24S	19.23	14.59	12.26
20	P18-62P	18.34	13.91	11.70	P18-62S	23.18	17.58	14.78
14	P18-64P	13.77	10.44	8.78	P18-64S	15.67	11.88	9.99
11	P18-65P	18.61	14.11	11.87	P18-65S	14.53	11.02	9.27
37	P20-37P	18.86	14.30	12.03	P20-37S	25.61	19.42	16.33
19	P20-66P	16.52	12.53	10.53	P20-66S	22.85	17.33	14.57
48	P22-48P	22.42	17.00	14.30	P22-48S	29.95	22.72	19.10
25	P22-67P	18.82	14.27	12.00	P22-67S	21.80	16.53	13.90
38	P22-68P	20.18	15.31	12.87	P22-68S	25.13	19.06	16.02
42	P22-69P	20.37	15.45	12.99	P22-69S	27.86	21.13	17.77

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$26.08	$19.78	$16.63	E12-7S	$28.13	$21.34	$17.94
3	E12-60P	25.56	19.39	16.30	E12-60S	26.33	19.97	16.79
5	E14-5P	16.56	12.56	10.56	E14-5S	17.62	13.36	11.23
9	E14-9P	16.85	12.78	10.74	E14-9S	18.71	14.19	11.93
12	E14-12P	19.48	14.77	12.42	E14-12S	22.27	16.89	14.20
9	E14-61P	21.38	16.22	13.64	E14-61S	25.81	19.58	16.46
5	E14-63P	21.09	16.00	13.45	E14-63S	22.96	17.41	14.64
24	E18-24P	25.67	19.47	16.37	E18-24S	29.89	22.67	19.06
20	E18-62P	28.71	21.78	18.31	E18-62S	33.76	25.61	21.53
14	E18-64P	24.38	18.49	15.55	E18-64S	26.29	19.94	16.76
11	E18-65P	29.56	22.42	18.85	E18-65S	25.48	19.33	16.25
37	E20-37P	25.09	19.03	16.00	E20-37S	31.80	24.12	20.28
19	E20-66P	21.94	16.64	13.99	E20-66S	24.18	18.34	15.42
48	E22-48P	38.46	29.17	24.53	E22-48S	46.04	34.92	29.36
25	E22-67P	31.75	24.08	20.25	E22-67S	34.76	26.36	22.16
38	E22-68P	34.28	26.00	21.86	E22-68S	40.61	30.80	25.90
42	E22-69P	33.51	25.42	21.37	E22-69S	40.99	31.09	26.14

WITH CLAMP FOR JACKETED CABLE

7	J12-7P	$17.28	$13.11	$11.02	J12-7S	$19.77	$14.99	$12.61
3	J12-60P	17.14	13.00	10.93	J12-60S	18.34	13.91	11.70
5	J14-5P	12.19	9.25	7.77	J14-5S	13.33	10.11	8.50
9	J14-9P	14.48	9.47	7.96	J14-9S	14.47	10.97	9.23
12	J14-12P	12.96	9.83	8.26	J14-12S	16.00	12.14	10.20
9	J14-61P	16.19	12.28	10.32	J14-61S	20.66	15.67	13.17
5	J14-63P	16.62	12.61	10.60	J14-63S	16.52	12.53	10.53
24	J18-24P	17.86	13.55	11.39	J18-24S	21.57	16.36	13.75
20	J18-62P	20.95	15.89	13.36	J18-62S	25.85	19.61	16.49
14	J18-64P	15.96	12.10	10.18	J18-64S	17.72	13.44	11.30
11	J18-65P	20.72	15.72	13.21	J18-65S	17.24	13.08	11.00
37	J20-37P	47.32	35.89	30.18	J20-37S	55.41	42.03	35.34
19	J20-66P	45.04	34.16	28.72	J20-66S	47.80	36.25	30.48
48	J22-48P	31.42	23.83	20.04	J22-48S	39.95	30.30	25.48
25	J22-67P	28.09	21.30	17.91	J22-67S	31.19	23.66	19.89
38	J22-68P	31.38	23.80	20.01	J22-68S	36.51	27.69	23.28
42	J22-69P	29.77	22.58	18.97	J22-69S	36.80	27.91	23.47

WITH STANDARD CABLE CLAMP

7	C12-7P	$17.18	$13.03	$10.96	C12-7S	$19.23	$14.59	$12.26
3	C12-60P	17.04	12.92	10.86	C12-60S	17.86	13.55	11.89
5	C14-5P	13.70	10.39	8.74	C14-5S	14.86	11.27	9.48
9	C14-9P	14.14	10.72	9.02	C14-9S	15.96	12.10	10.18
12	C14-12P	14.61	11.08	9.32	C14-12S	17.47	13.25	11.14
9	C14-61P	17.76	13.47	11.33	C14-61S	21.80	16.53	13.90
5	C14-63P	16.29	12.36	10.39	C14-63S	18.13	13.75	11.56
24	C18-24P	17.99	13.64	11.47	C18-24S	22.19	16.83	14.15
20	C18-62P	21.47	13.28	12.69	C18-62S	26.37	20.00	16.82
14	C18-64P	16.70	12.67	10.65	C18-64S	18.61	14.44	11.87
11	C18-65P	21.57	16.36	13.75	C18-65S	17.47	13.25	11.14
37	C20-37P	20.95	15.89	13.36	C20-37S	27.72	21.02	17.67
19	C20-66P	18.67	14.16	11.91	C20-66S	20.91	15.86	13.33
48	C22-48P	28.13	21.34	17.94	C22-48S	35.71	27.08	22.77
25	C22-67P	24.57	18.64	15.67	C22-67S	27.51	20.87	17.54
38	C22-68P	25.96	19.69	16.55	C22-68S	32.33	24.52	20.62
42	C22-69P	26.14	19.83	16.67	C22-69S	33.62	25.50	21.48

Continued on following page.

MINNI-E® SERIES 67 MINIATURE CONNECTORS (CONTINUED)

WALL RECEPTACLES

WITH FORM FOR POTTING SEAL

No. Contacts	Pin Contacts: Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199
7	P12-7P	$16.29	$12.36	$10.39	P12-7S	$18.38	$13.94	$11.72
3	P12-60P	16.00	12.14	10.20	P12-60S	16.99	12.89	10.84
5	P14-5P	13.48	10.22	8.59	P14-5S	14.53	11.02	9.27
9	P14-9P	13.81	10.47	8.80	P14-9S	15.67	11.88	9.99
12	P14-12P	14.28	10.83	9.11	P14-12S	17.14	13.00	10.93
9	P14-61P	17.43	13.22	11.11	P14-61S	30.24	22.94	19.29
5	P14-63P	24.38	18.49	15.55	P14-63S	17.80	13.50	11.35
24	P18-24P	18.53	14.05	11.81	P18-24S	22.75	17.25	14.51
20	P18-62P	22.00	16.69	14.03	P18-62S	26.95	20.44	17.19
14	P18-64P	17.28	13.11	11.02	P18-64S	19.09	14.48	12.17
11	P18-65P	22.15	16.80	14.12	P18-65S	18.05	13.69	11.51
37	P20-37P	25.01	18.97	15.95	P20-37S	31.75	24.08	20.25
19	P20-66P	22.71	17.22	14.48	P20-66S	24.94	18.92	15.91
48	P22-48P	26.33	19.97	16.79	P22-48S	33.91	25.72	21.62
25	P22-67P	22.75	17.25	14.51	P22-67S	25.75	19.53	16.42
38	P22-68P	24.14	18.31	15.39	P22-68S	30.51	23.14	19.46
42	P22-69P	24.32	18.45	15.51	P22-69S	31.80	24.12	20.28

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$28.52	$21.63	$18.19	E12-7S	$30.62	$23.22	$19.52
3	E12-60P	27.99	21.23	17.85	E12-60S	28.81	21.85	18.37
5	E14-5P	18.34	13.91	11.70	E14-5S	19.38	14.70	12.36
9	E14-9P	18.61	14.11	11.87	E14-9S	20.47	15.53	13.05
12	E14-12P	21.24	16.11	13.54	E14-12S	24.14	18.31	15.39
9	E14-61P	23.47	17.80	14.97	E14-61S	27.86	21.13	17.77
5	E14-63P	22.85	17.33	14.57	E14-63S	24.76	18.78	15.79
24	E18-24P	29.08	22.06	18.55	E18-24S	33.33	25.28	21.25
20	E18-62P	32.42	24.59	20.67	E18-62S	37.43	28.39	23.87
14	E18-64P	27.80	21.09	17.73	E18-64S	29.70	22.53	18.94
11	E18-65P	33.00	25.03	21.04	E18-65S	28.90	21.92	18.43
37	E20-37P	31.28	23.72	19.95	E20-37S	37.98	28.81	24.22
19	E20-66P	28.13	21.34	17.94	E20-66S	30.43	23.08	19.40
48	E22-48P	42.37	32.14	27.02	E22-48S	49.95	37.88	31.85
25	E22-67P	35.71	27.08	22.77	E22-67S	38.67	29.33	24.66
38	E22-68P	38.19	28.97	24.35	E22-68S	44.57	33.80	28.42
42	E22-69P	37.43	28.39	23.87	E22-69S	44.90	34.05	28.63

WITH STANDARD CABLE CLAMP

No. Contacts	Pin Contacts: Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199
7	C12-7P	$19.77	$14.99	$12.61	C12-7S	$21.76	$16.50	$13.87
3	C12-60P	19.56	14.84	12.47	C12-60S	20.37	15.45	12.99
5	C14-5P	15.57	11.81	9.93	C14-5S	16.62	12.61	10.60
9	C14-9P	15.90	12.06	10.14	C14-9S	17.76	13.47	11.33
12	C14-12P	16.37	12.42	10.44	C14-12S	19.23	14.59	12.26
9	C14-61P	18.82	14.27	12.00	C14-61S	23.37	17.73	14.90
5	C14-63P	17.99	13.64	11.47	C14-63S	19.89	15.09	12.69
24	C18-24P	21.53	16.33	13.73	C18-24S	25.71	19.50	16.39
20	C18-62P	24.18	18.34	15.42	C18-62S	23.67	22.28	18.73
14	C18-64P	20.24	15.35	12.91	C18-64S	22.15	16.80	14.12
11	C18-65P	25.09	19.03	16.00	C18-65S	20.99	15.92	13.38
37	C20-37P	27.14	20.58	17.31	C20-37S	33.91	25.72	21.62
19	C20-66P	24.86	18.86	15.85	C20-66S	27.10	20.55	17.28
48	C22-48P	32.04	24.30	20.43	C22-48S	39.62	30.05	25.26
25	C22-67P	28.46	21.59	18.15	C22-67S	31.46	23.86	20.06
38	C22-68P	29.85	22.64	19.03	C22-68S	36.23	27.48	23.10
42	C22-69P	30.04	22.78	19.15	C22-69S	37.51	28.45	23.92

PANEL RECEPTACLES WITH 4-HOLE MOUNT

AND INDIVIDUAL WIRE SEAL GROMMET

No. Contacts	Pin Contacts: Amph. No. 67-02-	Net Each, Lots of 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-02-	Net Each, Lots of 1-24	25-99	100-199
7	E12-7P	$12.01	$ 9.11	$ 7.66	E12-7S	$14.43	$10.94	$ 9.20
3	E12-60P	11.86	9.00	7.56	E12-60S	13.00	9.86	8.29
5	E14-5P	9.71	7.36	6.19	E14-5S	10.85	8.23	6.92
9	E14-9P	10.00	7.58	6.38	E14-9S	12.01	9.11	7.66
12	E14-12P	10.47	7.94	6.68	E14-12S	13.48	10.22	8.59
9	E14-61P	13.70	10.39	8.74	E14-61S	18.20	13.80	11.60
5	E14-63P	14.14	10.72	9.02	E14-63S	14.06	10.66	8.96
24	E18-24P	15.05	11.41	9.60	E18-24S	18.90	14.33	12.05
20	E18-62P	18.24	13.83	11.63	E18-62S	23.14	17.55	14.76
14	E18-64P	13.14	9.97	8.38	E18-64S	14.86	11.27	9.48
11	E18-65P	17.91	13.58	11.42	E18-65S	14.39	10.91	9.17
37	E20-37P	16.62	12.61	10.60	E20-37S	24.65	18.70	15.72
19	E20-66P	14.32	10.86	9.13	E20-66S	17.04	12.92	10.86
48	E22-48P	23.29	17.66	14.85	E22-48S	31.75	34.08	20.25
25	E22-67P	19.95	15.13	13.72	E22-67S	23.00	17.44	14.67
38	E22-68P	23.23	17.62	14.81	E22-68S	28.34	21.49	18.07
42	E22-69P	21.61	16.39	13.78	E22-69S	28.61	21.70	18.24

ROUND FLANGE RECEPTACLES

REAR MOUNT WITH HEX NUT

No. Contacts	Pin Contacts: Amph. No. 67-03-	Net Each, Lots of 1-24	25-99	100-199	Socket Contacts: Amph. No. 67-03-	Net Each, Lots of 1-24	25-99	100-199
7	E12-7P	$14.24	$10.80	$ 9.08	E12-7S	$16.66	$12.64	$10.63
3	E12-60P	14.14	10.72	9.02	E12-60S	15.24	11.56	9.72
5	E14-5P	11.90	9.03	7.59	E14-5S	13.04	9.89	8.32
9	E14-9P	12.23	9.28	7.80	E14-9S	14.18	10.75	9.04
12	E14-12P	12.67	9.61	8.08	E14-12S	15.67	11.88	9.99
9	E14-61P	15.86	12.03	10.11	E14-61S	20.33	15.42	12.96
5	E14-63P	16.33	12.39	10.41	E14-63S	16.19	12.28	10.32
24	E18-24P	15.19	11.52	9.69	E18-24S	19.04	14.44	12.14
20	E18-62P	18.28	13.86	11.66	E18-62S	23.33	17.69	14.88
14	E18-64P	13.29	10.08	8.47	E18-64S	15.05	11.41	9.60
11	E18-65P	18.09	13.72	11.54	E18-65S	14.39	10.91	9.17
37	E20-37P	20.99	15.92	13.38	E20-37S	29.04	22.03	18.52
19	E20-66P	18.71	14.19	11.93	E20-66S	21.42	16.25	13.66
48	E22-48P	40.99	31.09	26.14	E22-48S	49.47	37.52	31.55
25	E22-67P	37.65	28.56	24.01	E22-67S	40.72	30.88	25.93
38	E22-68P	40.94	31.05	26.11	E22-68S	46.18	35.03	29.45
42	E22-69P	39.33	29.83	25.08	E22-69S	46.33	35.14	29.54

HERMETICALLY-SEALED, PIN CONTACT

No. Contacts	Amph. No. 67-04-	Hex Nut Front Mount Type: Net Each, Lots of 1-24	25-99	100-199	Stake-On Solder Flange Type*: Net Each, Lots of 1-24	25-99	100-199
7	H12-7P	$ 54.81	$ 41.57	$ 34.95	$ 28.02	$21.25	$17.87
12	H14-12P	44.46	33.72	28.35	23.31	17.68	14.86
9	H14-61P	55.31	41.95	35.27	34.94	26.50	22.28
24	H18-24P	76.84	58.28	48.99	42.35	32.12	27.01
20	H18-62P	87.27	66.19	55.65	53.99	40.95	34.42
37	H20-37P	173.09	131.28	110.38	77.96	59.13	49.71
48	H22-48P	98.45	74.67	62.78	123.79	93.89	78.94

*Add suffix (105) when ordering—example: 67-04-H12-7P (105)—stake-on solder flange type.

SERIES 225 PRINTED CIRCUIT CONNECTORS

Gold plated bifurcated ribbon contacts with eyelet, straight pin or right angle solder type terminations. Rated 5 amps at 600 VAC rms. Large mating surface provides low contact resistance. Centers .156" for .154" to .170" PC boards. Glass filled diallyl phthalate. Meets MIL-C-21097C. Polarizing key assures contact positioning. Straight pin is .406". Screw mount on 0.128" clearance hole.

WITH 2 ROWS OF INDEPENDENT CONTACTS

Amphenol No. 225-	Contacts	Tail Style	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
20621-101	12	Eyelet	$2.09	$1.74	$1.46	$1.31	$1.19
21021-101	20	Eyelet	2.74	2.30	1.94	1.72	1.57
21521-101	30	Eyelet	3.28	2.74	2.30	2.05	1.88
21821-101	36	Eyelet	3.65	3.06	2.55	2.28	2.09
22221-101	44	Eyelet	4.41	3.70	3.10	2.76	2.53
22521-101	50	Eyelet	5.61	4.69	3.94	3.51	3.21
22821-101	56	Eyelet	6.19	5.18	4.35	3.86	3.53
23621-101	72	Eyelet	8.09	6.77	5.68	5.06	4.63
24321-101	86	Eyelet	8.99	7.52	6.30	5.62	5.14
20621-103	12	Pin	2.09	1.74	1.46	1.31	1.19
21021-103	20	Pin	2.74	2.30	1.94	1.72	1.57
21521-103	30	Pin	3.28	2.74	2.30	2.05	1.88
21821-103	36	Pin	3.65	3.06	2.55	2.28	2.09
22221-103	44	Pin	4.41	3.70	3.10	2.76	2.53
22521-103	50	Pin	5.61	4.69	3.94	3.51	3.21
22821-103	56	Pin	6.19	5.18	4.35	3.86	3.53

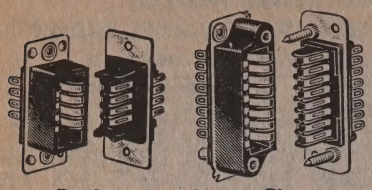
Amphenol No. 225-	Contacts	Tail Style	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
20621-105	12	Pin*	$2.32	$1.95	$1.63	$1.44	$1.33
21021-105	20	Pin*	3.15	2.64	2.21	1.97	1.80
21521-105	30	Pin*	3.89	3.26	2.73	2.42	2.22
21821-105	36	Pin*	4.36	3.65	3.07	2.73	2.50
22221-105	44	Pin*	5.28	4.42	3.71	3.30	3.03
22821-105	56	Pin*	7.30	6.09	5.12	4.55	4.17

WITH 2 ROWS BRIDGED CONTACTS (TWO TAILS)

20631-101	6	Eyelet	$2.09	$1.74	$1.46	$1.31	$1.19
21031-101	10	Eyelet	2.74	2.30	1.94	1.72	1.57
21531-101	15	Eyelet	3.28	2.74	2.30	2.05	1.88
21831-101	18	Eyelet	3.65	3.06	2.55	2.28	2.09
22231-101	22	Eyelet	4.41	3.70	3.10	2.76	2.53
22831-101	28	Eyelet	6.19	5.18	4.35	3.86	3.53

*Right angle.

BLUE RIBBON® CONNECTORS



Barrier Polarization — Pin Polarization

Patented gold plated ribbon contact provides self-wiping action with low contact resistance. Steel mounting plates with float bushings for alignment in rack and panel applications. Impact and moisture resistant, high quality diallyl phthalate dielectric.

BARRIER POLARIZATION TYPES

Requires rectangular panel cutout. Polarization and contact alignment by construction of dielectric barriers at end of connectors (26-182, -183), or by barrier thickness between contacts. **Rating:** 5 amps, 750 V. Parts 26-4200 are float mounted, all others, fixed positions.

Amph. No. 26-	Contacts	*	Net Each, Lots of 1-9	10-49	50-99	100-249*
182	8	M	$1.60	$1.34	$1.09	$0.98
4100-8P	8	M	1.45	1.21	.99	.89
4100-16P	16	M	2.72	2.29	1.85	1.67
4100-24P	24	M	3.27	2.76	2.24	2.01
4100-32P	32	M	3.81	3.20	2.59	2.33
183	8	F	2.51	2.10	1.73	1.54
4100-8S	8	F	2.65	1.99	1.60	1.44
4100-16S	16	F	3.81	2.85	2.29	2.06
4100-24S	24	F	4.60	3.44	2.74	2.50
4100-32S	32	F	5.43	4.06	3.22	2.94
4200-8S	8	F	2.37	2.01	1.63	1.45
4200-16S	16	F	3.45	2.92	2.35	2.11
4200-24S	24	F	4.09	3.44	2.79	2.51
4200-32S	32	F	4.88	4.11	3.33	2.99

PIN POLARIZATION TYPES

Polarized by two tapered posts which also align contacts prior to mating. **Rating:** 5 amps, 750 V.

159-16	16	M	$2.92	$2.46	$1.99	$1.78
159-24	24	M	3.29	2.76	2.24	2.02
159-32	32	M	4.15	3.48	2.84	2.55
190-16	16	F	3.71	3.12	2.54	2.28
190-24	24	F	4.43	3.73	3.03	2.72
190-32	32	F	5.23	4.40	3.58	3.21

*Type: M-Male, F-Female.

MINIATURE HEXAGON CONNECTORS

Quality miniature connectors at economy prices. Body of diallyl phthalate dielectric; gold-over-silver contacts. Rated 7.5 amps, 500 V rms at sea level.

RACK AND PANEL WITH HEX NUT (ILLUSTRATED)

No. 126-	Description	Net Each, Lots of 1-49	50-99	100-249
010	5-pin plug	$0.97	$0.77	$0.63
011	5-pin socket	1.53	1.21	1.01
191	7-pin plug	1.13	.89	.74
192	7-pin socket	1.94	1.53	1.29
012	9-pin plug	1.31	1.05	.86
013	9-pin socket	2.40	1.90	1.58

RECEPTACLES WITH LOCKING CLIP

214	4-pin plug	$1.16	$0.91	$0.75
216	5-pin plug	1.03	.83	.69
218	5-pin socket	1.64	1.30	1.08
197	7-pin plug	1.21	.97	.83
198	7-pin socket	2.05	1.62	1.35
219	9-pin plug	1.41	1.12	.92
221	9-pin socket	2.51	1.98	1.65

CABLE TO PANEL WITH HOOD AND CLAMP

215	4-pin socket	$1.94	$1.53	$1.28
217	5-pin plug	2.10	1.67	1.41
223	5-pin socket	2.74	2.17	1.80
195	7-pin plug	2.32	1.85	1.53
196	7-pin socket	3.14	2.49	2.07
220	9-pin plug	2.51	1.98	1.65
222	9-pin socket	3.59	2.85	2.37

KEYED SHELLS

For rack and panel or module applications requiring additional keying or connector protection. Notched keys in shell provide a variety of positioned connectors. Rated 5 amps, 800 V.

PLUGS

Amph. No. 26-	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
4101-8P	8	$2.85	$2.41	$1.96	$1.76
4101-16P	16	4.31	3.63	2.94	2.65
4101-24P	24	4.98	4.18	3.41	3.01
4101-32P	32	5.71	4.80	3.89	3.50
4102-8P	8	2.85	2.41	1.96	1.76
4102-16P	16	4.31	3.63	2.94	2.65
4102-24P	24	4.98	4.18	3.41	3.01
4102-32P	32	5.71	4.80	3.89	3.50

MATING RECEPTACLES

Amph. No. 26-	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
4201-8S	8	$3.29	$2.77	$2.26	$2.04
4201-16S	16	4.48	3.77	3.06	2.74
4201-24S	24	5.36	4.51	3.66	3.28
4201-32S	32	6.22	5.24	4.26	3.83
4202-8S	8	3.29	2.77	2.26	2.04
4202-16S	16	4.48	3.77	3.06	2.74
4202-24S	24	5.36	4.51	3.66	3.28
4202-32S	32	6.22	5.24	4.26	3.83

CABLE TO PANEL TYPES WITH KEYED LATCH-LOCK SHELLS

With end cable clamp (26-4301) or right angle cable clamp (26-4501) on the plug; both units mate with receptacle 26-4401. With notched keying to avoid cross-mating.

PLUGS

Amph. No. 26-	Contacts	*	Net Each, Lots of 1-9	10-49	50-99	100-249*
4301-8P	8	M	$7.36	$6.18	$5.02	$4.51
4301-16P	16	M	9.22	7.76	6.30	5.67
4301-24P	24	M	10.34	8.68	7.04	6.35
4301-32P	32	M	11.52	9.68	7.85	7.07
4301-8S	8	F	7.83	6.55	5.34	4.81
4301-16S	16	F	9.97	8.37	6.80	6.11
4301-24S	24	F	11.63	9.79	7.95	7.14
4301-32S	32	F	12.58	10.50	8.60	7.73
4501-8P	8	M	7.36	6.18	5.02	4.51
4501-16P	16	M	9.22	7.76	6.30	5.67
4501-24P	24	M	10.34	8.68	7.04	6.35
4501-32P	32	M	11.52	9.68	7.85	7.07
4501-8S	8	F	8.28	6.95	5.65	5.07
4501-16S	16	F	9.09	7.64	6.21	5.58
4501-24S	24	F	11.25	9.47	7.69	6.90
4501-32S	32	F	12.42	10.45	8.47	7.61

MATING RECEPTACLES

4401-8P	8	M	$4.43	$3.73	$3.03	$2.72
4401-16P	16	M	5.84	4.90	3.98	3.59
4401-24P	24	M	6.57	5.51	4.49	4.03
4401-32P	32	M	7.29	6.14	4.98	4.49
4401-8S	8	F	5.40	4.55	3.69	3.32
4401-16S	16	F	6.60	5.54	4.50	4.05
4401-24S	24	F	7.46	6.27	5.08	4.58
4401-32S	32	F	9.10	7.10	5.79	5.05

*Type: M-Male, F-Female.

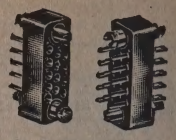
MICRO RIBBON® MINIATURE CONNECTORS

Extremely small connectors for dependable use where miniaturization is needed. Smooth, easy insertion and extraction. Self-wiping and cleaning. Double sided, flexing action of both contact members for added reliability. Available in up to 50-contact arrangements. Diallyl phthalate dielectric bodies. **Rating:** 700 VDC at sea level, 200 VDC at 70,000 feet. Shells, cadmium-plated brass with clear chromate finish.

Amph. No. 57-	*	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
10140	†	14	$2.25	$1.88	$1.53	$1.39
20140	‡	14	2.34	1.98	1.60	1.45
30140	§	14	4.37	3.66	2.98	2.70
40140	#	14	2.91	2.47	2.01	1.81
10240	†	24	3.12	2.60	2.26	1.90
20240	‡	24	3.15	2.65	2.15	1.93
30240	§	24	4.79	4.03	3.26	2.95
40240	#	24	3.73	3.15	2.59	2.36
10360	†	36	3.57	3.00	2.44	2.19
20360	‡	36	3.85	3.14	2.55	2.29
30360	§	36	6.02	4.97	4.02	3.64
40360	#	36	3.86	3.23	2.61	2.35
10500	†	50	4.84	4.08	3.30	2.96
20500	‡	50	4.95	4.17	3.38	3.03
30500	§	50	6.59	5.54	4.52	4.06
40500	#	50	5.00	4.21	3.38	3.06

***Type:** †Plug; ‡receptacle; for rack and panel use. §Plug with cable clamp; #receptacle; for cable to panel use.

MINIATURE RECTANGULAR CONNECTORS



Rectangular connectors of a miniature size, intended for use wherever a circuit must be re-routed, made or broken in the interior of the equipment. Contacts and polarizing pins are gold over silver-base plating; will not tarnish or corrode. Dielectric bodies are of melamine. **Voltage Rating:** Types A and B, 700 V rms at sea level between contacts and 600 V rms at sea level between contacts and ground with a current of 17 amps; Type C and D, 600 V rms with a current of 7.5 amps. **Insertion Force:** 15 lbs., minimum to 40 lbs., maximum. **Withdrawal Force:** 1 lb., minimum to 4 lbs., maximum.

No. 126-	Contacts	Net Each, Lots of 1-49	50-99	100-249
016*	7 p.	$1.84	$1.45	$1.21
017*	7 s.	2.57	2.05	1.69
204*	15 p.	2.61	2.06	1.71
205*	15 s.	4.79	3.76	3.11
206*	18 p.	2.83	2.24	1.85
207*	18 s.	5.53	4.37	3.61
173†	14 p.	3.19	2.52	2.08
174†	14 s.	5.13	4.04	3.36
199†	18 p.	3.21	2.53	2.09
189†	18 s.	5.42	4.28	3.55
171†	21 p.	4.93	3.89	3.22
172†	21 s.	7.93	6.27	5.18
188†	34 p.	4.73	3.75	3.10
187†	34 s.	8.64	6.84	5.67

Current Rating: *17 amps (Types A and B). †7.5 amps (Types C and D). **Prices on request. **Contacts:** p.-pins; s.-sockets.

SERIES 126 RACK AND PANEL CONNECTORS

11, 15 and 20 contact connectors for use on rack and panel mountings. All have eyelets inserted in the mounting holes for added strength, holes for wiring instead of the usual hooks on the male contacts, and interlocking barriers to prevent accidental shorting. All models can be supplied with or without a protective can and cable clamp as shown. Molded of mica-filled phenolic. Contacts are gold over silver and molded into the insert. **Voltage Rating:** 900 volts rms, 60 Hz, at sea level. Contact size 12 rated 23 A; size 16 rated 13 A; size 20 rated 7.5 A. Also available to MIL-C-8384; specs and prices on request.

SPECIFICATIONS

Amphenol No. 126-	Description	Contacts No. 12	Contacts No. 20	Spacing
804, 809	Male	2	9	.864
805, 808	Female	2	9	.864
151, 152	Male	3	12	1.188
150, 153	Female	3	12	1.188
806, 811	Male	4	16	1.620
807, 810	Female	4	16	1.620
812	Female	20*	.....	.....
813	Male	20*	.....	.....

*Size 16.

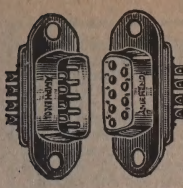
SERIES 126 PRICES

No. 126-	Contacts	Mtg. Screw	Net Each, Lots of 1-49	50-99	100-249
804*	11	#4	$1.35	$1.07	$0.88
809	11	#4	2.21	1.74	1.45
805*	11	#4	1.41	1.11	.92
808	11	#4	2.27	1.79	1.49
151*	15	#6	1.79	1.42	1.17
152	15	#6	3.48	2.75	2.21
150*	15	#6	1.35	1.07	.88
153	15	#6	2.70	2.15	1.78
806*	20	#4	2.16	1.69	1.41
811	20	#4	3.43	2.73	2.26
807*	20	#4	1.72	1.34	1.12
810	20	#4	3.01	2.38	1.96
812*	20	#4	1.80	1.44	1.19
813*	20	#4	3.91	3.09	2.54

*Insert only, without shell and clamp.

★**Larger Quantity Prices on Request.**

MIN RAC® 17 MINIATURE RACK AND PANEL CONNECTORS WITH POKE-HOME® CONTACTS



Half the size and weight of standards. "Poke Home" contacts are soldered to leads outside the connector, then "Poked Home" for quick, simple and reliable assembly. No damage or difficulty from "close in" soldering. From 9 to 50 contacts. Solder type contacts take up to #20 AWG wire. Crimp type take #20, #22 or #24 AWG wire. Steel shells with either clear chromate (listed) or gold iridite (change 2nd number from 0 to 1, e.g., -21090), over cadmium finish. Current rating: 7.5 A. Prices listed less cable housing.

PLUGS WITH ZYTEL‡ 101 NYLON INSERTS

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-20090*	9	$1.50	$1.35	$1.12	$0.90	$0.83	$0.76
17-20150*	15	2.05	1.86	1.55	1.24	1.14	1.04
17-20250*	25	2.90	2.63	2.15	1.73	1.56	1.44
17-20370*	37	3.97	3.60	2.99	2.40	2.14	1.97
17-20500*	50	5.05	4.59	3.78	3.05	2.78	2.54
17-20090-1†	9	1.50	1.35	1.12	.90	.83	.76
17-20150-1†	15	2.05	1.86	1.55	1.24	1.14	1.04
17-20250-1†	25	2.90	2.63	2.15	1.73	1.56	1.44
17-20370-1†	37	3.97	3.60	2.99	2.40	2.14	1.97
17-20500-1†	50	5.05	4.59	3.78	3.05	2.78	2.54

MATING RECEPTACLES

17-10090*	9	$2.05	$1.86	$1.55	$1.24	$1.14	$1.04
17-10150*	15	2.94	2.68	2.22	1.76	1.62	1.48
17-10250*	25	4.38	3.97	3.29	2.65	2.40	2.19
17-10370*	37	6.23	5.63	4.64	3.74	3.37	3.10
17-10500*	50	7.94	7.21	5.95	4.80	4.32	4.00
17-10090-1†	9	2.05	1.86	1.55	1.24	1.14	1.04
17-10150-1†	15	2.94	2.68	2.22	1.76	1.62	1.48
17-10250-1†	25	4.38	3.97	3.29	2.65	2.40	2.19
17-10370-1†	37	6.23	5.63	4.64	3.74	3.37	3.10
17-10500-1†	50	7.94	7.21	5.95	4.80	4.32	4.00

*Solder contacts; for float mount, add suffix -5; prices slightly higher. †Crimp contacts; for float mount, change suffix to -6; prices slightly higher. ‡DuPont registered trademark.

HIGH-TEMP. HARD DIELECTRIC PLUGS

Diallyl phthalate glass-filled per MIL-M-19833, Type GDI-30.

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-70090*	9	$2.44	$2.20	$1.84	$1.66	$1.43	$1.37
17-70150*	15	3.56	3.22	2.71	2.45	2.11	2.03
17-70250*	25	5.29	4.82	3.99	3.59	3.07	2.95
17-70370*	37	7.46	6.83	5.63	5.08	4.35	4.18
17-70500*	50	9.80	8.85	7.41	6.69	5.74	5.53
17-70090-1†	9	2.32	2.09	1.75	1.58	1.36	1.31
17-70150-1†	15	3.41	3.05	2.57	2.33	2.01	1.93
17-70250-1†	25	4.99	4.47	3.74	3.38	2.90	2.78
17-70370-1†	37	6.97	6.30	5.27	4.75	4.09	3.94
17-70500-1†	50	9.09	8.26	6.92	6.26	5.38	5.17

MATING RECEPTACLES

17-60090*	9	$ 3.65	$ 3.28	$ 2.73	$ 2.54	$2.09	$2.01
17-60150*	15	5.38	4.85	4.05	3.64	3.11	2.99
17-60250*	25	8.66	7.79	6.46	5.80	4.93	4.72
17-60370*	37	12.50	11.25	9.34	8.38	7.13	6.83
17-60500*	50	16.29	14.98	12.46	11.17	9.51	9.08
17-60090-1†	9	3.51	3.17	2.63	2.36	2.01	1.93
17-60150-1†	15	5.39	4.85	4.04	3.64	3.11	2.98
17-60250-1†	25	8.30	7.46	6.20	5.57	4.73	4.54
17-60370-1†	37	11.95	10.75	9.06	8.02	6.83	6.55
17-60500-1†	50	16.09	14.38	12.02	10.71	9.11	8.74

*Solder contacts; †Crimp contacts.

CABLE CLAMP ASSEMBLIES FOR MIN RAC SERIES

17-310-01	9	$1.35	$1.14	$0.91	$0.82	$0.68	$0.63
17-311-01	15	1.42	1.19	.93	.85	.70	.65
17-312-01	25	1.49	1.23	.98	.89	.75	.68
17-313-01	37	1.54	1.29	1.04	.92	.78	.70
17-314-01	50	1.58	1.31	1.05	.95	.79	.71
17-529*	9-37	.79	.70	.59	.48	.43	.37
17-770*	50	.79	.70	.59	.48	.43	.37

*Locking assemblies latch cable to panel with clamp assemblies.

No. 294-136 Crimping Tool—Net Each.....$124.74
No. 294-155 Insertion and Removal Tool—Net Each. 13.28

FIXED PIN MIN RAC 17

Low cost, with screw machine-type fixed contacts; dimensions, mounting and panel cut-outs same as standard 17 series. Solder pin contacts; max. wire size, 20 gauge. Glass-filled nylon dielectric.

PLUGS

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-90090-16	9	$1.38	$1.25	$1.04	$0.83	$0.76	$0.69
17-90150-16	15	1.95	1.76	1.47	1.18	1.07	.98
17-90250-16	25	2.81	2.55	2.12	1.70	1.55	1.42
17-90370-16	37	3.84	3.49	2.89	2.32	2.12	1.93
17-90500-16	50	4.99	4.53	3.74	3.01	2.76	2.51

MATING RECEPTACLES

17-80090-16	9	$1.98	$1.79	$1.48	$1.19	$1.09	$1.00
17-80150-16	15	2.90	2.63	2.17	1.74	1.60	1.46
17-80250-16	25	4.40	3.99	3.31	2.66	2.43	2.23
17-80370-16	37	6.18	5.58	4.60	3.72	3.34	3.07
17-80500-16	50	7.93	7.21	5.93	4.80	4.36	3.98

ENCAPSULATED CONTACT MIN RAC 17

Crimp Poke-Home contacts. Extra depth of nylon dielectric at rear of connector protects contacts from arcing, shorting. No sleeving, potting necessary. Shell dimensions, specifications same as standard.

PLUGS

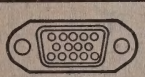
Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-20090-1 (390)	9	$1.55	$1.41	$1.17	$0.93	$0.86	$0.80
17-20150-1 (390)	15	2.12	1.91	1.59	1.28	1.17	1.06
17-20250-1 (390)	25	2.91	2.64	2.16	1.74	1.56	1.44
17-20370-1 (390)	37	4.03	3.65	3.03	2.43	2.15	1.98
17-20500-1 (390)	50	5.09	4.62	3.82	3.07	2.80	2.57

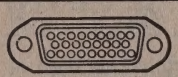
MATING RECEPTACLES

17-10090-1 (390)	9	$2.11	$1.91	$1.58	$1.28	$1.17	$1.06
17-10150-1 (390)	15	2.98	2.70	2.24	1.79	1.63	1.50
17-10250-1 (390)	25	4.36	3.95	3.27	2.63	2.39	2.18
17-10370-1 (390)	37	6.25	5.65	4.67	3.76	3.38	3.12
17-10500-1 (390)	50	7.97	7.21	5.96	4.81	4.39	4.01

HIGH DENSITY MIN RAC 17

Offers 50% to nearly 100% more circuits than standard in the standard size shell. Each #24 size crimp Poke-Home contact carries 3 amps at 500 V rms. Shell dimensions and mounting same as standard. Glass-filled nylon dielectric. Wire size: #24, #26, #28 AWG.


Shell Size 9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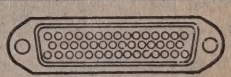
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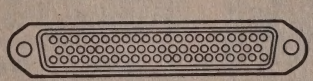
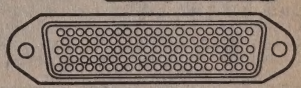
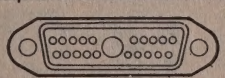

Shell Size 37

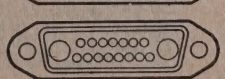

Shell Size 50

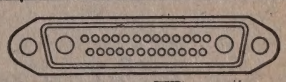
Contacts	Shell Size	Amphenol No.	PLUGS, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999	Amphenol No.	RECEPTACLES, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
14	9	17-90140-1	$2.28	$1.91	$1.72	$1.60	$1.41	$1.35	17-80140-1	$2.93	$2.41	$2.07	$1.95	$1.71	$1.63
26	15	17-90260-1	2.70	2.51	2.37	2.11	1.97	1.89	17-80260-1	4.34	3.11	2.97	2.61	2.47	2.29
44	25	17-90440-1	4.39	3.31	3.17	2.80	2.66	2.49	17-80440-1	6.29	4.32	4.16	3.66	3.50	3.23
65	37	17-90650-1	4.81	4.28	3.79	3.64	3.35	3.13	17-80650-1	6.99	5.79	5.09	4.91	4.48	4.25
98	50	17-90980-1	6.57	5.84	5.17	4.99	4.61	4.32	17-80980-1	9.78	8.04	7.06	6.85	6.25	5.95

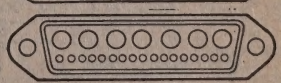
POWER/COAX MIN RAC 17

A variety of combinations available where coax must be terminated with power circuits. Power contacts are #20 size; coax are #1 shielded. Shell dimensions and mounting same as standard Crimp, Poke-Home contacts; rated at 7.5 amps, 500 V rms (power max.). Glass-filled nylon dielectric.


Shell Size 25
1 Coax Contact

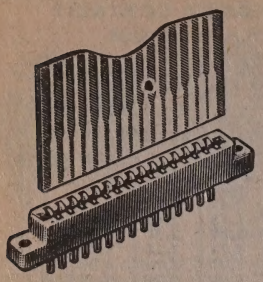

Shell Size 25
2 Coax Contacts


Shell Size 37


Shell Size 50

Contacts Power	Contacts Coax	Shell Size	Amphenol No.	PLUGS, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999	Amphenol No.	RECEPTACLES, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
0	3	15	17-90003-1	$1.46	$1.31	$1.17	$1.05	$0.93	$0.83	17-80003-1	$1.83	$1.64	$1.46	$1.32	$1.19	$1.06
15	2	25	17-90152-1	2.25	2.02	1.79	1.62	1.46	1.29	17-80152-1	3.56	3.20	2.85	2.58	2.32	2.05
25	2	37	17-90252-1	2.81	2.52	2.30	2.10	1.88	1.66	17-80252-1	4.64	4.16	3.79	3.45	3.09	2.72
17	7	50	17-90177-1	2.40	2.16	1.92	1.74	1.56	1.38	17-80177-1	2.79	2.51	2.24	2.02	1.82	1.61

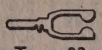
PRINTED CIRCUIT CONNECTORS



RECEPTACLES

—143 SERIES

Type 01



Type 03

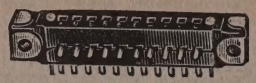
The contact is the secret of these connectors' effectiveness; gold plated tuning fork contacts firmly, but gently. Will form-fit any standard .055″ to .073″ board. Contacts are on .156″ centers. Rated 600 V rms, 5 amps.

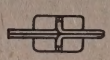
Contact Style

-01—Eyelet contact type. **-03**—Pin contact type. May be ordered with one contact replaced with a key, for positioning. When ordering, number indicates exactly what is desired: Example—143-010-01 indicates 143 Series, 10 contacts, -01 contact style.

No. 143-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999
006-01	6	$1.31	$1.11	$0.92	$0.79
010-01	10	1.36	1.16	.97	.84
012-01	12	1.50	1.28	1.06	.91
015-01	15	1.73	1.45	1.21	1.05
018-01	18	2.06	1.73	1.45	1.23
022-01	22	2.46	2.07	1.73	1.49
036-01	36	4.79	3.99	3.36	2.88
006-03	6	1.31	1.11	.92	.79
010-03	10	1.36	1.16	.97	.84
012-03	12	1.50	1.28	1.06	.91
015-03	15	1.73	1.45	1.21	1.05
018-03	18	2.06	1.73	1.45	1.23
022-03	22	2.46	2.07	1.73	1.49
036-03	36	4.79	3.99	3.36	2.88

PLUGS—133 SERIES





Type 21

Type 03

For use with printed circuit boards requiring frequent mating and disengagement, also for boards of non-standard thickness. Contacts are on .156″ centers. Type 21 contact tail for use in cable to panel applications using a mate to 143 Series connector. Rugged, gold plated contacts. Rated 600 V rms, 5 amps. May be ordered with contact omitted for keying.

Contact Types

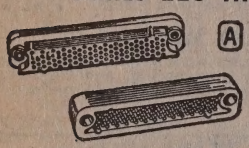
-21—Double Tail, solder type.

-03—Single Side Mount, pin type.

Stock Number Identification: No. 133-022-21 indicates 133 Series, 22 contacts, 21 contact tail (double tail, solder type).

No. 133-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999
006-21	6	$2.73	$2.27	$1.91	$1.64
010-21	10	2.33	1.95	1.64	1.41
012-21	12	2.82	2.37	1.98	1.71
015-21	15	3.27	2.74	2.30	1.96
018-21	18	3.38	2.82	2.38	2.04
022-21	22	3.84	3.22	2.68	2.31
006-03	6	2.46	2.07	1.73	1.49
010-03	10	2.01	1.67	1.42	1.20
012-03	12	2.46	2.07	1.73	1.49
015-03	15	2.75	2.30	1.93	1.65
018-03	18	2.82	2.37	1.98	1.71
022-03	22	3.10	2.61	2.18	1.86

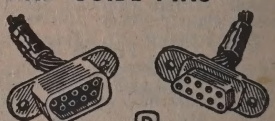
SERIES 220 THRU 223 MICRO-MINIATURE CONNECTORS, CONTACTS AND GUIDE PINS



A

B

C



D

SERIES 220 MICRO-RAC® CONNECTORS (FIG. A)

Rack and panel connectors with monoblock body of polycarbonate resin. Polarization through trapezoidal mating area; molded-in slot-and-key arrangement. Float-mounted connectors. **52-Contact:** 1.888″ x .677″; 1.492″ mtg. ctrs. **104-Contact:** 3.017″ x .677″; 2.611″ mtg. ctrs. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amphenol No.	Contacts	Description	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
220-1N052	52	Plug	$1.97	$1.56	$1.36	$1.17	$1.01
220-2N052	52	Receptacle	1.69	1.35	1.19	1.01	.88
220-5	.....	Cable clamp	1.52	1.21	1.07	.91	.79
220-1N104	104	Plug	2.42	1.94	1.69	1.45	1.27
220-2N104	104	Receptacle	2.10	1.68	1.47	1.27	1.09
220-6	.....	Cable clamp	1.57	1.25	1.10	.95	.81

SERIES 221 MULTI-PURPOSE STRIP CONNECTORS (FIG. B)

Economical connectors with highly versatile adaptability. May be used full 4″ or 6″ length or cut with scissors and stacked to any configuration desired. Material, black nylon; polycarbonate available on request. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

221-1560*	60	6″ plug	$0.90	$0.77	$0.67	$0.64	$0.56
221-1660*	60	6″ recept.	.75	.64	.56	.53	.47
221-2553†	53	4″ plug	.79	.68	.58	.55	.50
221-2653†	53	4″ recept.	.68	.57	.52	.48	.43
221-3580‡	80	4″ plug	.91	.78	.68	.64	.57
221-3680‡	80	4″ recept.	.90	.77	.67	.64	.56

Spacing: *.100″; †.075″; ‡.050″.

SERIES 222 MIGHTY-MITE® CABLE CONNECTORS (FIG. C)

Reliable, low cost connectors for cable-to-cable and cable-to-chassis application. Molded one-piece polycarbonate. **Spacing:** .085″ centers. Size: **19-Contact,** .621″ dia. x 2.618″ lg.; **31-Contact,** .746″ dia. x 2.948″ lg.; **61-Contact,** .996″ dia. x 3.530″ lg. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amphenol No.	Contacts	Description	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
222-11N19	19	Plug	$1.20	$0.99	$0.88	$0.68	$0.61
222-12N19	19	Receptacle	.96	.80	.65	.55	.48
222-518	.....	Cable clamp	2.01	1.67	1.35	1.16	1.01
222-11N31	31	Plug	1.20	.98	.79	.68	.58
222-12N31	31	Receptacle	.96	.79	.65	.55	.48
222-519	.....	Cable clamp	2.16	1.77	1.44	1.22	1.07
222-11N61	61	Plug	1.30	1.07	.86	.73	.64
222-12N61	61	Receptacle	1.02	.85	.68	.58	.52
222-520	.....	Cable clamp	4.92	4.07	3.29	2.79	2.44

SERIES 223 TINY TIM® NYLON CONNECTORS (FIG. D)

Screw-mount rack and panel connectors ideal for circuit module either potted or surface mounted and for cable-to-cable use. Meet MIL-C-8384B requirements. Trapezoidal mating for polarization Contact spacing, .100″ centers each row. Overall length: **5-Contact,** .843″; **9-Contact,** 1.043″; **17-Contact,** 1.443″; **25-Contact,** 1.843″; **33-Contact,** 2.243″. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amph. No.	Contacts	Description	Mtg. Ctrs.	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
223-1505	5	Plug	.593″	$0.56	$0.53	$0.47	$0.42	$0.39
223-1605	5	Receptacle	.593″	.56	.53	.47	.42	.39
223-1509	9	Plug	.793″	.59	.55	.51	.44	.40
223-1609	9	Receptacle	.793″	.59	.55	.51	.44	.40
223-1517	17	Plug	1.193″	.65	.59	.54	.46	.42
223-1617	17	Receptacle	1.193″	.65	.59	.54	.46	.42
223-1525	25	Plug	1.593″	.69	.65	.58	.51	.45
223-1625	25	Receptacle	1.593″	.69	.65	.58	.51	.45
223-1533	33	Plug	1.993″	.70	.66	.59	.52	.46
223-1633	33	Receptacle	1.993″	.70	.66	.59	.52	.46

INDIVIDUAL "WIRE-FORM" AND "RELIA-TAC" CONTACTS

For Amphenol Series 220–223 connectors. Current rating, 3 amps. Both take 24, 26, 28 gauge solid wire; 24, 26, 28 gauge stranded wire. **Wire-Form:** 4-member spring design. Gold clad copper alloy wire in gold plated copper sleeves; .413″ long. **Relia-Tac:** Gold-over-nickel on copper alloy body. Male, .388″ long; female, .404″ long. Does not mate with Wire-Form. **Ask about solder-tail contacts, special adapters, Ultra-Tac crimp contacts, special contacts, guide pins and strain reliefs also available.**

Amph. No.	Description	Net Each, Lots of 1-99	100-999	1M-4999	5M-9999	10M-24,999*
220-P01	Wire-Form male	*	*	*	*	*
220-S01	Wire-Form female	*	*	*	*	*
220-P02	Relia-Tac male	$0.083	$0.066	$0.058	$0.049	$0.042
220-S02	Relia-Tac female	.218	.174	.152	.131	.113
221-759*	Relia-Tac male	.158	.132	.123	.116	.105
221-760†	Relia-Tac female	.36	.304	.281	.251	.238

*For 221-3680 strips. †For 221-3580 strips. ***Prices on Request.**

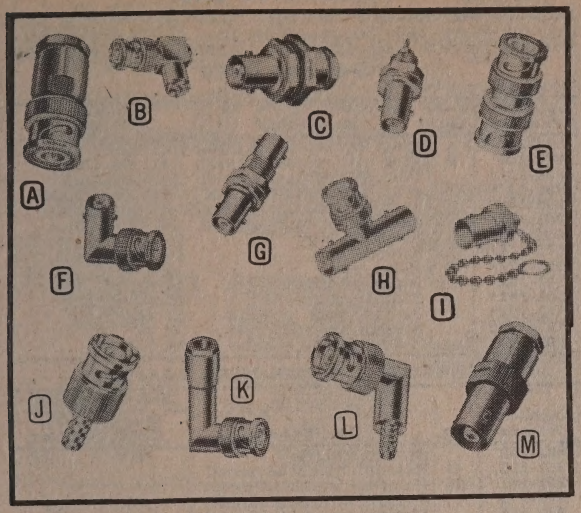
GUIDE PINS

Poke-Home® guide pins for polarizing, keying or connector alignment. Supplement the keyed slots; can be used in conjunction with either Relia-Tac or Wire-Form contacts. Insert into plug.

Amph. No.	Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
221-535	Std. guide pin	$0.360	$0.198	$0.162	$0.144	$0.108
221-590	Groove retention	.612	.336	.276	.252	.18

AMPHENOL RF Connectors

BNC CONNECTORS

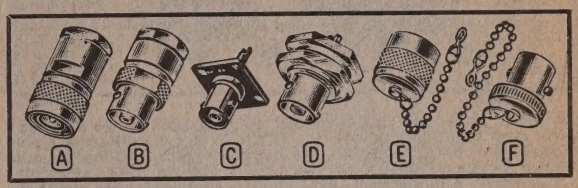


Bayonet coupling coax connectors designed for RG-58, RG-59 and other cable as indicated. Use to 10,000 MHz, 500 V maximum.

Amphenol No.	MIL No.	Fig.	Description	Imp. Ohms	RG Cable
31-002	UG88/U	A	Plug		55, 58
31-012	UG260/U	A	Plug		59, 62, 71
31-018	UG88B/U	A	Plug		55, 58
31-021	UG260A/U	A	Plug		59, 62, 71
31-202	UG88C/U	A	Plug	50	55, 58
31-212	UG260B/U	A	Plug		59, 62, 71
31-4326	M39012	J	Plug		55, 142, 223
31-3301	M39012	A	Plug		55, 58, 141
31-4320	M39012	J	Plug		58, 141, 303
31-4321	M39012	J	Plug		59, 62, 140
31-3302	M39012	A	Plug		59, 62, 140
31-4322	M39012	J	Plug		71
31-4324	M39012	J	Plug		122
31-3303	M39012	A	Plug		122, 180
31-204	UG913/U	B	Angle Plug		55, 58
31-850	.....	B	Angle Plug		59, 62, 71
31-3365	M39012	K	Angle Plug		55, 142
31-3361	M39012	L	Angle Plug		55, 55A, 58
31-3364	M39012	K	Angle Plug		58, 141
31-005	UG89/U	....	Jack		55, 58
31-015	UG261/U	....	Jack		59, 62, 71
31-019	UG89A/U	....	Jack		55, 58
31-022	UG261A/U	....	Jack		59, 62, 71
31-205	UG89B/U	....	Jack	50	55, 58
31-215	UG261B/U	....	Jack		59, 62, 71
31-4333	M39012	....	Jack		55, 142, 223
31-3319	M39012	M	Jack		55, 58, 141
31-4327	M39012	....	Jack		58, 141, 303
31-4328	M39012	....	Jack		59, 62, 140
31-3320	M39012	M	Jack		59, 62, 71
31-4329	M39012	....	Jack		71
31-4331	M39012	....	Jack		122
31-3321	M39012	M	Jack		122, 180
31-001	UG291/U	....	Panel Jack		55, 58
31-011	UG262/U	....	Panel Jack		59, 62, 71
31-020	UG291A/U	....	Panel Jack		55, 58
31-023	UG262A/U	....	Panel Jack		59, 62, 71
31-201	UG291B/U	....	Panel Jack	50	55, 58
31-211	UG262B/U	....	Panel Jack		59, 62, 71
31-3333	M39012	....	Panel Jack		55, 58, 141
31-3334	M39012	....	Panel Jack		59, 62, 71
31-3335	M39012	....	Panel Jack		122, 180
31-206	UG909/U	C	Blkhd. Jack	50	55, 58
31-207	UG910/U	C	Blkhd. Jack		59, 62, 71
2075	UG624/U	C	Blkhd. Jack		59, 62, 71
31-4341	M39012	....	Blkhd. Jack		55, 142, 223
31-3347	M39012	C	Blkhd. Jack		55, 58, 141
31-4342	M39012	....	Blkhd. Jack		58, 141
31-4343	M39012	....	Blkhd. Jack		59, 62, 140
31-3348	M39012	C	Blkhd. Jack		59, 62, 71
31-4344	M39012	....	Blkhd. Jack		71
31-4346	M39012	....	Blkhd. Jack		122
31-003	UG290/U	....	Panel Recpt.		
31-105	.....	....	Panel Recpt.		
31-203	UG290A/U	....	Panel Recpt.	50	
31-817	UG447/U	....	Panel Recpt.		
31-842	.....	....	Panel Recpt.		
4500	UG185/U	....	Panel Recpt.		
31-3377	M39012	....	Panel Recpt.		
31-222	UG1098/U	....	Angle Recpt.	50	
31-016	UG254A/U	D	Blkhd. Recpt.		
31-102	UG657/U	D	Blkhd. Recpt.		
31-221	UG1094/U	D	Blkhd. Recpt.	50	
31-236	UG625B/U	D	Blkhd. Recpt.	50	
31-3375	M39012	D	Blkhd. Recpt.		
31-4238	M39012	D	Blkhd. Recpt.		
31-3376	M39012	D	Blkhd. Recpt.		
31-4237	M39012	D	Blkhd. Recpt.		

Amphenol No.	MIL No.	Fig.	Description	Imp. Ohms	RG Cable
31-218	UG491A/U	E	Adapter	50	
31-219	UG914/U	E	Adapter	50	
31-009	UG306/U	F	Angle Adapter		
31-209	UG306A/U	F	Angle Adapter	50	
31-220	UG492A/U	G	Blkhd. Adapter	50	
47000	UG414/U	G	Blkhd. Adapter		
31-008	UG274/U	H	"T" Adapter		
31-208	UG274A/U	H	"T" Adapter	50	
31-006	CW123/U	....	Cap & Chain		
31-007	CW155/U	....	Cap & Chain		
31-017	CW159/U	....	Cap & Chain		
31-026	M39012	....	Cap & Chain		
31-027	CW155A/U	....	Cap & Chain		
31-210	CW282/U	I	Cap & Chain		

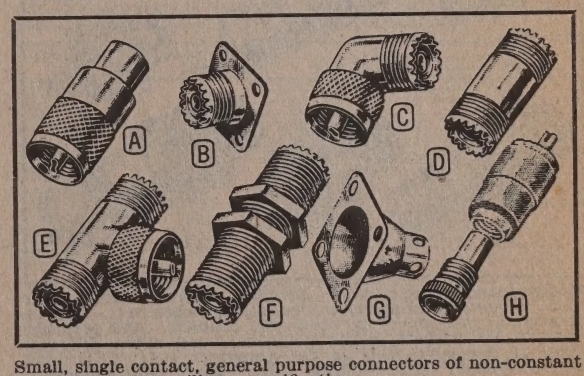
SERIES 82 TYPE C COAXIAL CONNECTORS



Low VSWR to 10,000 MHz, 1,500 V peak. Also used with cables other than 50 ohms. Meets applicable portions of MIL-C-3989.

Amphenol No.	UG/U No.	Fig.	Description	RG Cable
82-530	573A	A	Plug	8, 9
82-532	628A	A	Plug	8, 9A
82-534	709A	A	Plug	55, 58
82-531	710A	....	Angle Plug	8, 9
82-503	572	B	Panel Jack	8, 9
82-504	568	C	Panel Recpt.	
82-515	634	D	Blkhd. Recpt.	
82-535	567A	....	Angle Adapter	
82-512	MX-1142	E	Male Cap & Chain	
82-513	MX-1143	F	Female Cap & Chain	

SERIES 83 UHF TYPE COAXIAL CONNECTORS

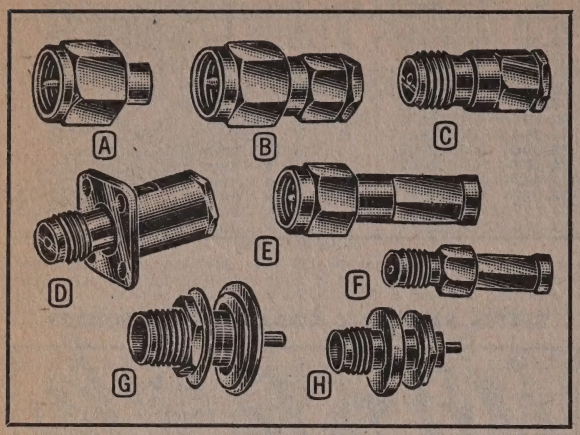


Small, single contact, general purpose connectors of non-constant impedance. Meet military specifications.

Amphenol No.	UG/U No.	Fig.	Description	RG/U Cable
83-1SP	PL259	A	Plug	8, 11
83-1SPN	PL259A	A	Plug	8, 11
83-750	111	A	Plug	59, 62
83-850	.....	A	Plug	11
83-851	.....	A	Plug	8
83-59	.....	.....	Angle Plug	8, 11
83-1R	SO239	B	Panel Recpt.	
83-1RTY	SO239	B	Panel Recpt.	
83-716	.....	B	Panel Recpt.	
83-798	SO239A	.....	Panel Recpt.	
83-1F	363	F	Straight Adapter	
83-1J	PL258	D	Straight Adapter	
83-1AP	646	C	Angle Adapter	
83-1T	.....	E	"T" Adapter	
83-168	176	H	Reducing Adapter	59, 62, 71
83-185	175	H	Reducing Adapter	55, 58
83-1H	106	G	Hood	8, 11
83-1HP	372	G	Hood	8, 11
83-765	177	G	Hood	55, 58
83-877	.....	.....	Double Male Adpt.	
83-878	.....	.....	Single Hole Recpt.	

SEE FOLLOWING PAGES FOR PRICING

SERIES SMA SEMI-PRECISION 3mm HIGH FREQUENCY CONNECTORS



Excellent mechanical and electrical performance, DC to 18 GHz, even after 100 mating cycles. "Thin Wall" beryllium copper bodies have .00452" interface mating cross-section. Coupling nut torque can be twice that of other SMA designs. Easy assembly requires only a simple, low-cost tool kit; crimp style uses standard BNC/TNC Crimper No. 227-350.

Amphenol No. 901-2500 Tool Kit—Jacket and dielectric trim tools for precise cable preparation required for electric performance specified. Net Each, Lots 1–24 ..... **$12.50**

PLUGS AND JACKS

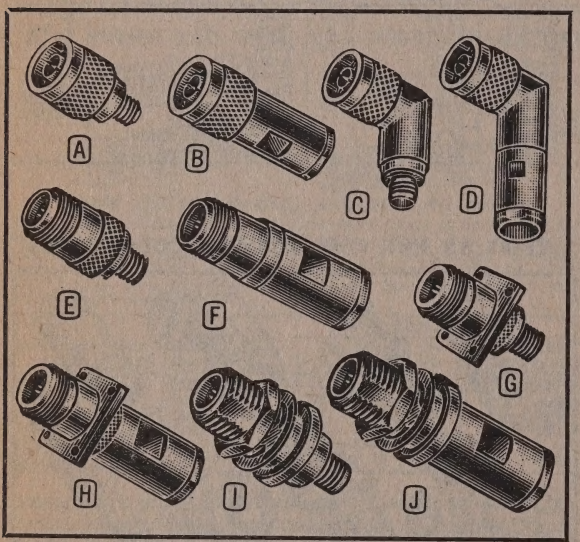
Solder attachment, except: *Clamp; †Crimp.

Amphenol Number	Fig.	Description	For RG/U Cable
901-113	A	Plug, less contact & insul.	.141" dia. Cujak
901-105	B	Plug with contact & insul.	.141" dia. Cujak
901-111*	....	Plug, less contact & insul.	.141" dia. Cujak
901-107*	....	Plug with contact & insul.	.141" dia. Cujak
901-106	C	Jack with contact & insul.	.141" dia. Cujak
901-108*	....	Jack with contact & insul.	.141" dia. Cujak
901-103*	....	Straight plug	55, 58, 141, 142, 223
901-104*	....	Straight jack	55, 58, 141, 142, 223
901-121*	D	Panel jack	55, 58, 141, 142, 223
901-122*	....	Bulkhead jack	55, 58, 141, 142, 223
901-101†	E	Straight plug	55, 142, 223
901-102†	F	Straight jack	55, 143, 223
901-109†	....	Straight plug	58, 141, 303
901-110	....	Straight jack	58, 141, 303

RECEPTACLES & WITHIN-SERIES ADAPTERS

Amphenol Number	Fig.	Description	Std. Wave Ratio Max. SWR	Std. Wave Ratio To f(GHz)
901-112	....	Panel receptacle	.....	.....
901-116	G	Rear-mt. bulkhead recept.	.....	.....
901-117	H	Front-mt. bulkhead recept.	.....	.....
901-118	....	Straight plug-plug adapter	1.15	.01
901-119	....	Straight jack-jack adapter	1.15	.01
901-120	....	Bulkhead jack-jack adapter	1.15	.01

TYPE N MIL-C-39012 CONNECTORS

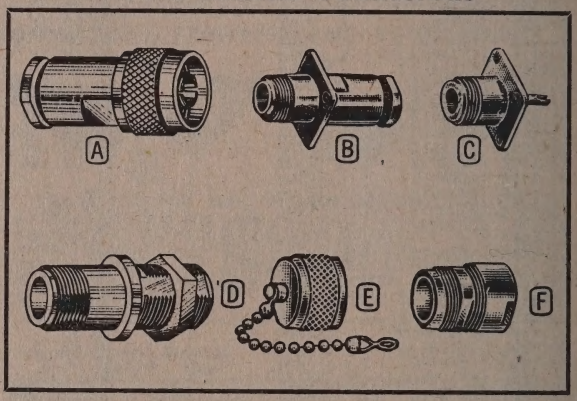


Medium size, weather proof, threaded coupling units for use up-to microwave frequencies. Designed to meet MIL-C-39012. They have crimpable fully captivated contacts, cable retention equal to the strength of the cable braid and utilize the same series of crimpable tools as the Amphenol BNC/TNC MIL type. Frequency range 0–10,000 MHz. 1500 V peak voltage.

Amphenol Number	UG/U No.	Fig.	MIL No. M39012/	Imped. Ohms	RG/U Cable
82-340	1681	A	Mil crimp 01-0007	50	8, 9, 213
82-332	1682	A	Mil crimp 01-0008	50	214
82-352	1185B	B	Mil clamp 01-0005	50	.....
82-352-1	21H	B	Mil clamp 01-0002	50	.....
82-5370	.....	A	Mil crimp	50	55, 58, 141
82-5375	.....	A	Mil crimp	50	142, 223
82-5381	.....	B	Mil clamp	50	.....
82-336	1708	C	Mil crimp 05-0003	50	8, 9, 213, 214
82-357	594C	D	Mil clamp 05-0001	50	.....
82-5379	.....	C	Mil crimp	50	55, 58, 141, 142
82-5374	.....	C	Mil crimp	50	223
82-337	1688	E	Mil crimp 02-0008	50	8, 9, 213, 214
82-333	1689	E	Mil crimp 02-0009	50	.....
82-356	1186B	F	Mil clamp 02-0003	50	.....
82-356-1	23G	F	Mil clamp 02-0002	50	.....
82-5371	.....	E	Mil crimp	50	142, 223
82-334	1698	G	Mil crimp 02-0017	50	.....
82-360	1187B	H	Mil clamp 02-0006	50	.....
82-360-1	22G	H	Mil clamp 02-0005	50	.....
82-335	1701	I	Mil crimp 03-0005	50	8, 9, 213, 214
82-5373	.....	I	Mil crimp	50	142, 223

SEE FOLLOWING PAGES FOR PRICING AND BETWEEN SERIES ADAPTERS

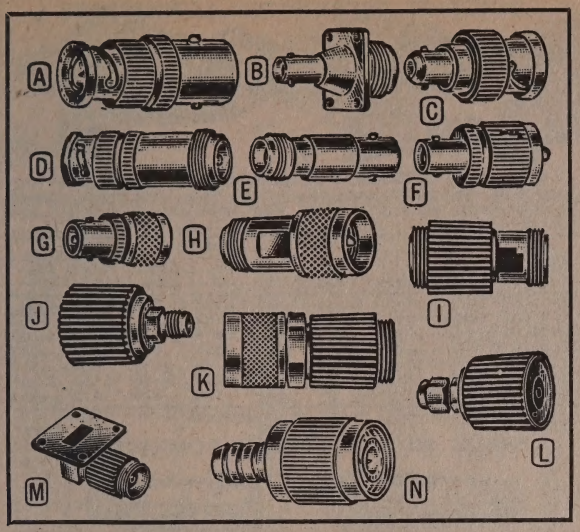
TYPE N COAXIAL CONNECTORS



Impedance matched to 50 or 70-ohm cables. 50-ohm connectors **will not** mate with 75-ohm connectors. Frequency range, 0–10,000 MHz. 500 V maximum. Threaded coupling.

Amphenol No.	UG/U No.	Fig.	Description	Imped. Ohms	RG/U Cable
82-61	21B	A	Plug	50	8, 9, 10
82-84	94A	A	Plug	70	11, 12, 13
82-86	18B	A	Plug	50	5, 6, 21
82-96	21C	A	Plug	50	8, 9, 10
82-104	167A	....	Plug	50	17, 18
82-202	21D	A	Plug	50	8, 9, 10
82-203	18C	A	Plug	50	5, 6, 21
82-204	941A	A	Plug	50	10, 12
34000	536	A	Plug	50	58, 141
82-835	.....	....	Angle Plug	50	8, 9, 10, 87A
82-63	23B	B	Jack	50	8, 9, 10
82-88	20B	B	Jack	50	5, 6, 21
82-89	95A	B	Jack	70	11, 12, 13
82-209	23D	B	Jack	50	8, 9, 10
82-212	940A	B	Jack	50	10, 12
82-62	22B	B	Panel Jack	50	8, 9, 10
82-87	19B	B	Panel Jack	50	5, 6, 21
82-90	96A	B	Panel Jack	70	11, 12, 13
35500	593	B	Panel Jack	50	59, 62, 71
82-67	160A	....	Blkhd. Jack	50	8, 9, 10
82-93	160B	....	Blkhd. Jack	50	8, 9, 10
82-24	58	C	Panel Recpt.	50	.....
82-97	58A	C	Panel Recpt.	50	.....
82-112	.....	C	Panel Recpt.	70	.....
82-811	680	....	Blkhd. Recpt.	50	.....
82-65	29A	D	Adapter	50	.....
82-100	57B	D	Adapter	50	.....
82-101	29B	D	Adapter	50	.....
82-64	27A	....	Angle Adapter	50	.....
82-98	27B	....	Angle Adapter	50	.....
82-213	27C	....	Angle Adapter	50	.....
82-66	30	....	Blkhd. Adapter	50	.....
82-36	107A	....	"T" Adapter	50	.....
82-99	28A	....	"T" Adapter	50	.....
82-102	107B	....	"T" Adapter	50	.....
82-106	MX913	E	Cap & Chain	.....	.....

AMPHENOL RF Connectors, Pricing



BETWEEN SERIES ADAPTERS

APC, BNC, C, HN, MB, N, SMA, TNC, UHF

Amphenol No.	UG/U No.	Fig.	Mates with				Imp., Ohms
			Plug	Recpt.	Plug	Recpt.	
83175	635	A	.....	BNC	C	.....	50
83200	636A	A	BNC	.....	.....	C	50
8900	309	B	BNC	.....	.....	HN	50
32750	.....	B	.....	BNC	HN	.....	.....
47200	.....	C	BNC	.....	MB	.....	50
47250	.....	C	BNC	.....	.....	MB	50
47275	.....	C	.....	BNC	MB	.....	50
31-216	201A	D	BNC	.....	.....	N	.....
31-217	349A	D	.....	BNC	N	.....	.....
31-830	201	D	BNC	.....	.....	N	.....
2800*	.....	D	BNC	.....	N	.....	50
2975	349	D	.....	BNC	N	.....	50
3025†	335	D	.....	BNC	N	.....	50
4900	.....	D	.....	BNC	.....	N	50
5225	1034	D	.....	BNC	.....	N	50
5850‡	.....	D	BNC	.....	N	.....	50
21850†	.....	D	BNC	.....	N	.....	50
79025	.....	E	.....	BNC	TNC	.....	50
79675	.....	E	BNC	.....	.....	TNC	50
31-028	273	F	BNC	.....	.....	UHF	.....
2900	255	F	.....	BNC	UHF	.....	50
12025	.....	F	BNC	.....	.....	UHF	50
82-508	564	G	C	.....	.....	N	50
82-540	565A	G	.....	C	N	.....	50
4400	146	H	.....	N	UHF	.....	.....
14000	83	H	N	.....	.....	UHF	.....
26700	318	H	.....	N	.....	UHF	.....
131-1025	.....	I	APC-7		.....	N	50
131-1026	.....	I	APC-7		.....	BNC	50
131-1027	.....	I	APC-7		.....	OSM	50
131-1028	.....	J	APC-7		.....	SMA	50
131-1035	.....	K	APC-7		N	.....	50
131-1036	.....	I	APC-7		TNC	.....	50
131-1037	.....	I	APC-7		BNC	.....	50
131-1038	.....	L	APC-7		SMA	.....	50
131-1201	.....	M	APC-7		WR-62 wavegd.		.....
131-1202	.....	M	APC-7		WR-90 wavegd.		.....

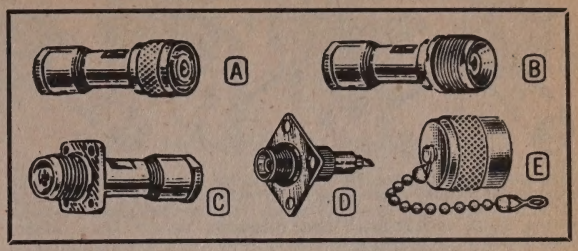
*Angle, flange mount. †Bulkhead mount. ‡Pressurized, bulkhead mount.

QUICK-CRIMP TNC SERIES CONNECTORS

Exclusive design has optional crimp or solder center contact. Maintains constant impedance even when center contact is crimped. Non-impedance match connector when used with cables other than 50 ohms. VSWR is identical to standard solder type TNC connectors, 1.25 to 1, over frequency range to 10,000 MHz.

Amphenol No.	Fig.	Description	RG/U Cable
36825	N	Plug	58, 58A, 58C, 141
36925	N	Plug	55, 55B, 142, 223
34825	N	Plug	71
69350	N	Plug	59, 59A, 59B, 62, 62A, 62C, 140
97750	.....	Bkhd. Jack	55, 55B, 142, 223
97775	.....	Bkhd. Jack	58, 58A, 58C, 141
97825	.....	Bkhd. Jack	71
97875	.....	Right Angle Plug	55, 55B, 142, 223
97900	.....	Right Angle Plug	58, 58A, 58C, 141
97925	.....	Right Angle Plug	59, 59A, 59B, 62, 62A, 62C, 140

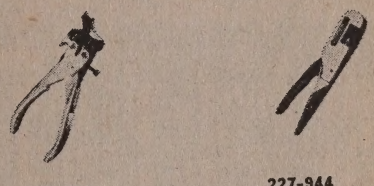
TYPE HN COAXIAL CONNECTORS



Medium size, high voltage, 50-ohm constant impedance connectors with threaded coupling. Meets applicable sections of MIL-C-3643. Low VSWR to 10,000 MHz. 1,500 V maximum.

Amphenol No.	UG/U No.	Fig.	Description	RG/U Cable
82-38	59A	A	Straight Plug	8, 9, 10
82-111	495A	A	Straight Plug	17, 18
82-804	59B	A	Straight Plug	8, 9, 10
82-816	.....	A	Straight Plug	54A
82-833	.....	.....	Angle Plug	8, 9, 10
82-856	.....	.....	Angle Plug	8, 9, 10
82-39	60A	B	Straight Jack	8, 9, 10
82-107	333A	B	Straight Jack	17, 18
82-814	60B	B	Straight Jack	8, 9, 10, 87
82-40	61A	C	Panel Jack	8, 9, 10
82-92	496	D	Panel Recpt.	.....
82-805	560	D	Panel Recpt.	.....
82-91	212A	.....	Angle Adapter	.....
82-130	.....	E	Cap & Chain	.....

RF CRIMPING TOOLS



227-900 227-944

Attach connectors to cables quickly and easily. Crimping force automatically controlled. Meets MIL specifications.

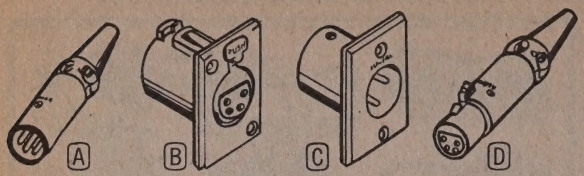
Amphenol No.	Connector Series	For use with RG/U cable
227-900	27 Shield Only	174, 179, 187, 188
227-901		180, 195
227-902		Adapter for 27-14 connector
227-913		Adapter for 27-4, 27-8, 27-10
227-914		Adapter for 27-16, 27-20, 27-22
227-1221-57	N Shield and Contact	55, 58, 141, 142, 223, 303, 400
227-1221-59		59, 62, 140, 210
227-1221-29		5, 6, 21, 143, 212, 222, 304
227-1221-25		8, 9, 11, 87A, 149, 165, 213, 214, 216, 225, 393
227-1221-09	BNC & TNC Shield and Contact	122, 174, 179, 180, 187, 188, 195. Essex 21-597
227-1221-11		55, 58, 141, 142, 223, 303, 400
227-1221-13		59, 62, 140, 210
227-1221-15		71
227-1221-11	MHV Shield Only	55, 58, 141, 142, 223, 303, 400
227-1221-11	UHF Shield Only	55, 58, 141, 142, 223, 303, 400
227-1221-13		59, 62, 140, 210
227-1221-23		8, 11, 149, 213
227-1221-09	SMA Shield Only	122, 174, 179, 180, 187, 188, 195
227-1221-11		55, 58, 141, 142, 223, 303, 400
227-944		Frame only for all 227-1221 die sets

OUR STOCKS ARE COMPLETE

AND UP TO DATE

BUNKER RAMO AMPHENOL Audio Connectors

SERIES 91 MICROPHONE CONNECTORS



Low-cost, dependable audio-type Excellite connectors with latch-lock coupling; fully interchangeable with Qwik Series (below) and Cannon XLR series. Shells of tough molded ABS plastic, nickel-plated inside and out for best shielding. Copper alloy, silver-plated and chromate dipped contacts with solder cup termination.

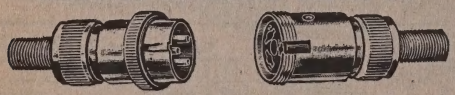
Amph. No. 91-	Fig.	No. of Cont. Description	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
453	A	3, Male plug	$1.439	$1.223	$1.079	$0.935	$0.888
454	D	3, Fem. jack	1.703	1.439	1.283	1.103	1.043
455	C	3, Male recpt.	1.307	1.103	.959	.839	7.91
456	B	3, Fem. recpt.	2.374	2.026	1.762	1.547	1.451
457	A	4, Male plug	1.595	1.367	1.187	1.031	.971
458	D	4, Fem. jack	2.158	1.799	1.607	1.39	1.319
459	C	4, Male recpt.	1.559	1.319	1.151	1.008	.935
460	B	4, Fem. recpt.	2.278	1.943	1.691	1.535	1.39
461	A	5, Male plug	2.542	2.195	1.943	1.679	1.499
462	D	5, Fem. jack	3.717	3.142	2.782	2.422	2.278
463	C	5, Male recpt.	1.979	1.703	1.475	1.283	1.223
464	B	5, Fem. recpt.	3.357	2.878	2.518	2.182	2.05

SERIES 91 QWIKS

Similar to above except bodies are diecast zinc with satin nickel plate. Bronze contacts are gold-plated over silver. Dielectric is blue diallyl phthalate. Easy push-button coupling.

853	E	3, Male plug	$2.266	$1.943	$1.691	$1.487	$1.343
854	H	3, Fem. jack	3.010	2.589	2.266	1.979	1.786
855	G	3, Male recpt.	1.762	1.510	1.319	1.151	1.043
856	F	3, Fem. recpt.	4.172	3.585	3.130	2.746	2.482
857	E	4, Male plug	2.422	2.087	1.823	1.595	1.439
858	H	4, Fem. jack	3.107	2.671	2.333	2.038	1.842
859	G	4, Male recpt.	1.733	1.493	1.308	1.145	1.036
860	F	4, Fem. recpt.	4.088	3.51	3.063	2.681	2.431

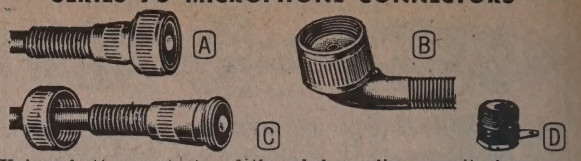
THREADED COUPLING SERIES 91



Mounting hole, 11/16" diameter; maximum 1/8" thick panel. Three contacts, except (*), 4 contacts; (†), 6 contacts. Black phenolic dielectric chrome plated brass shells.

Amphenol No.	Description	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
91-CCC3	Cap and chain	$0.600	$0.516	$0.455	$0.396	$0.036
91-MC3F	Female jack	1.355	1.163	1.02	1.888	.803
91-MC3F1	Female plug	1.415	1.211	1.055	.923	.839
91-MC3M	Male plug	1.331	1.14	.996	.876	.791
91-MC3M1	Male jack	1.271	1.091	.839	.647	.756
91-MC4F	Female jack*	1.403	1.199	1.055	.923	.827
91-MC4F1	Female plug*	1.475	1.26	1.103	.959	.876
91-MC4M	Male plug*	1.39	1.187	1.043	.911	.827
91-MC4M1	Male jack*	1.331	1.151	.996	.876	.791
91-MC6F	Female jack†	1.439	1.247	1.079	.947	.864
91-MC6F1	Female plug†	1.499	1.283	1.128	.983	.888
91-MC6M	Male plug†	1.403	1.211	1.055	.923	.827
91-PC3F	Female recept.	.959	.827	.719	.628	.563
91-PC6F	Female rcpt.†	.983	.839	.732	.648	.587
91-PC3M	Male recept.	.864	.744	.648	.563	.516
91-PC4F	Female rcpt.*	.911	.791	.707	.60	.54
91-PC4M	Male recept.*	.876	.744	.648	.575	.516
91-PC6M	Male recept.†	.935	.803	.707	.612	.563

SERIES 75 MICROPHONE CONNECTORS

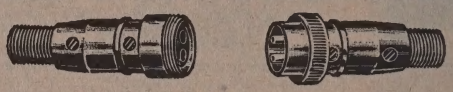


Unique button contact and threaded coupling permit plug conversion to jack by removal of coupling ring. Receptacles mount in .385" holes when grounding, .500" holes for ungrounded two circuit operation.

Amphenol No.	Description	Fig.	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
75-CCC1*	Cap and chain		$0.619	$0.528	$0.462	$0.409	$0.37
75-MC1F	Straight plug	A	.923	.791	.70	.606	.554
75-MC1FA	Angle plug	B	1.951	1.674	1.464	1.279	1.161
75-MC1M	Cable jack	C	.633	.554	.474	.422	.383
75-MC1P	Phone pl. adpt.		.897	.765	.673	.594	.528
75-MC1S	Mike switch		3.284	2.823	2.466	2.151	1.951
75-PC1M	Chassis recept.	D	.633	.554	.474	.422	.383

*May also be used with Series 80 connectors.

SERIES 80 MICROPHONE CONNECTORS



All mount in 5/8" hole. Maximum panel thickness for receptacles is 11/16". Single contacts, except (*), 2 contacts. Chrome finish.

Amphenol No.	Description	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
80-C	Female recept.	$0.791	$0.686	$0.594	$0.528	$0.474
80-M	Male plug	1.002	.858	.751	.66	.594
80-MC2F	Female jack*	1.122	.964	.845	.738	.66
80-MC2F1	Female plug*	1.122	.964	.845	.738	.66
80-MC2M	Male plug*	1.055	.897	.791	.686	.619
80-MC2M1	Male jack*	1.055	.897	.791	.686	.619
80-PC2F	Female rcpt.*	.897	.765	.673	.581	.528
80-PC2M	Male recept.*	.89	.738	.646	.568	.515

MINIATURE CABLE CONNECTORS

Black phenolic dielectric in cadmium plated brass shell. Polarized contact spacing. Plugs and receptacles take cables up to 1/4" dia. Panel receptacle mounts in 7/8" hole with two 6-32 screw holes on 1 1/4" centers. Series 91 also available in short shell. Prices on request.

SERIES 91 PLUGS (FIG. A)

Amphenol No.	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999*
91-MPM-3L	3	$0.504	$0.431	$0.384	$0.336	$0.30
91-MPM-4L	4	.563	.492	.42	.372	.336
91-MPM-5L	5	.587	.504	.431	.384	.348
91-MPM-6L	6	.575	.492	.431	.372	.336

SERIES 91 RECEPTACLES (FIG. B)

91-MPF-3L	3	$0.612	$0.528	$0.455	$0.408	$0.36
91-MPF-4L	4	.66	.563	.492	.431	.396
91-MPF-5L	5	.624	.587	.516	.443	.408
91-MPF-6L	6	.695	.60	.528	.455	.42

PANEL RECEPTACLES (FIG. C)

Amphenol No.	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
78-PCG3	3	$0.624	$0.521	$0.465	$0.361	$0.321
78-PCG4	4	.747	.626	.559	.433	.386
78-PCG5	5	.782	.655	.585	.454	.403
78-PCG6	6	.798	.67	.596	.461	.41

SERIES 91T MINIATURE CABLE-TO-PANEL CONNECTORS

Approximately 33% smaller than above Series 91. Provide high density, low cost, top quality interconnections for microphones, recorders, two-way radios, industrial controls and data processing. Threaded coupling lock design.

No. of Contacts	CABLE PLUGS Straight: Amphenol Number	Net Each, Lots of 1-24	25-49	50-99*	CABLE PLUGS Right Angle: Amphenol Number	Net Each, Lots of 1-24	25-49	50-99*	PANEL RECEPTACLES: Amphenol Number	Net Each, Lots of 1-24	25-49	50-99*
2	91-T-3200-1	$1.295	$1.175	$1.115	91-T-3200-6	$2.063	$1.859	$1.762	91-T-3203-9	$0.935	$0.851	$0.803
3	91-T-3260-1	1.211	1.091	1.031	91-T-3260-6	1.847	1.667	1.583	91-T-3263-9	.971	.876	.827
4	91-T-3300-1	1.571	1.427	1.343	91-T-3300-6	2.17	1.987	1.87	91-T-3303-9	1.091	.983	.935
5	91-T-3360-1	1.63	1.475	1.403	91-T-3360-6	2.266	2.05	1.943	91-T-3363-9	.971	.876	.827
6	91-T-3400-1	1.642	1.487	1.403	91-T-3400-6	2.29	2.075	1.967	91-T-3403-9	1.091	.983	.935
7	91-T-3475-1	1.811	1.642	1.559	91-T-3475-6	2.446	2.219	2.099	91-T-3478-9	1.235	1.115	1.067
12	91-T-3635-1	2.866	2.602	2.459	91-T-3635-6	3.477	3.142	2.973	91-T-3638-9	4.125	3.741	3.538

★LARGER QUANTITY PRICES ON REQUEST

BUNKER RAMO AMPHENOL Tube Sockets

A

B

C

D

E

F

MIP MOLDED-IN-PLATE SOCKETS (FIG. A)

Steel mounting plate molded in black phenolic body; can't come loose. Mounts in 1 5/16" hole with two 5/32" holes on 1 1/2" centers.

Amphenol No. 77-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
MIP4	4	$0.319	$0.267	$0.229	$0.185	$0.165
MIP4T*	4	.352	.294	.264	.205	.182
MIP4TM§	4	.48	.399	.358	.277	.251
MIP5	5	.35	.293	.264	.204	.18
MIP6	6	.383	.321	.288	.222	.20
MIP7S	7 Small	.414	.384	.309	.239	.215
MIP8	8 Octal	.347	.29	.259	.201	.179
MIP8T*	8 Octal	.371	.31	.278	.218	.191
MIP8TM§	8 Octal	.519	.436	.389	.303	.267
MIP9	9	.398	.333	.298	.231	.206
MIP11	11	.409	.342	.306	.238	.21
MIP11T*	11	.493	.411	.37	.285	.253
MIP11TM§	11	.717	.60	.537	.415	.37
MIP12	12	.474	.396	.354	.275	.244
MIP12TM§	12	.66	.548	.488	.383	.338
MIP20‡	20	.928	.778	.694	.541	.48

*Mica filled. ‡Fits 1 5/16" hole. §MIL version; mica-filled phenolic with silver-plated contacts and stainless steel mounting plate.

TYPE RS REPLACEMENT SOCKETS (FIG. B)

Same as Type "S" but with retainer rings in nickel-plated steel mounting rings. Replaces wafer types. Slotted holes in mounting ring fit 1 1/2" to 1 55/64" mtg. centers. Uses 6-32 screw. Black phenolic.

Amphenol No. 78-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
RS4	4	$0.387	$0.323	$0.29	$0.223	$0.199
RS5	5	.417	.349	.31	.241	.215
RS8	8 Octal	.421	.352	.316	.244	.218
RS9	9	.464	.389	.349	.27	.239
RS11	11	.554	.463	.416	.321	.285

TYPE S MOLDED SOCKETS (FIG. C)

Retainer ring mounted. Mounting hole dia., 1 3/16". Black phenolic.

Amphenol No. 78-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
S4	4	$0.316	$0.262	$0.234	$0.182	$0.162
S5	5	.333	.279	.25	.194	.172
S6	6	.365	.306	.274	.212	.189
S7S	7 Small	.394	.33	.295	.228	.205
S8	8 Octal	.317	.264	.237	.182	.164
S8T*	8 Octal	.365	.306	.274	.212	.189
S9	9	.359	.298	.268	.208	.184
S11	11	.411	.345	.296	.239	.212
S11T*	11	.465	.389	.349	.27	.24
S12	12	.425	.355	.319	.248	.22
S16	16	.545	.457	.408	.317	.281
7P†	7 Min.	.531	.444	.397	.308	.274
A9P†	9 Min.	.56	.475	.421	.32	.293

*Mica-filled. †Miniature.

MINIATURE TYPE S SOCKETS

These low cost sockets can be used for vacuum tubes, relays, input or output cable connections and where standard size sockets will not fit. Solderless wrap types mount in 5/8" dia. round or D shaped panel cut out; friction type retainer ring included. PC board types mount thru 1/16" dia. holes in PC boards arranged in proper pin circle dia. Contact shoulders prevent socket from bottoming, allow clearance for air circulations and cleaning.

PC TERMINATION

Amphenol No. 78-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
S3SW-0125	3	$0.191	$0.162	$0.143	$0.111	$0.10
S4SW-0125	4	.285	.239	.213	.166	.147
S5SW-0125	5	.294	.246	.221	.171	.153
S6SW-0125	6	.299	.25	.224	.174	.155

SOLDERLESS WRAP TERMINATION

Amphenol No. 78-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
S3SW-0500*	3	$0.237	$0.198	$0.178	$0.139	$0.122
S4SW-0500*	4	.331	.277	.248	.191	.169
S3SW-0525†	3	.24	.201	.18	.14	.123
S4SW-0525†	4	.378	.318	.284	.221	.195

Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

MIP MOLDED-IN-PLATE SOCKETS

Mounting plate molded in phenolic body. Contacts of copper alloy. PC contacts are 5/32" lg., with .125" tapered lead-in. Solderless wrap contacts are cadmium plated. and "tuning fork" shaped for low resistance; talls 1/16" w. x 1/2" lg.

PC TERMINATION (FIG. D)

Amphenol No. 77-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
MIP8W-0125	8	$0.431	$0.361	$0.323	$0.251	$0.222
MIP9W-0125	9	.484	.406	.362	.279	.251
MIP11W-0125	11	.518	.436	.387	.301	.267
MIP12W-0125	12	.541	.452	.406	.312	.279
MIP20W-0125	20	.928	.778	.694	.539	.48

SOLDERLESS WRAP TERMINATION (FIG. E)

MIP8W-0500*	8	$0.482	$0.404	$0.362	$0.279	$0.249
MIP9W-0500*	9	.534	.446	.399	.31	.276
MIP11W-0500*	11	.602	.504	.449	.349	.31
MIP12W-0500*	12	.626	.523	.363	.362	.322
MIP8W-0525†	8	.515	.43	.386	.297	.261
MIP9W-0525†	9	.557	.466	.416	.323	.288
MIP11W-0525†	11	.626	.524	.468	.362	.322
MIP12W-0525†	12	.694	.542	.484	.375	.334

Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

TYPE S SOCKETS

Same as MIP but retaining ring style.

PC TERMINATION

Amphenol No. 78-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
S8W-0125	8	$0.394	$0.33	$0.295	$0.228	$0.202
S9W-0125	9	.424	.354	.319	.248	.22
S11W-0125	11	.432	.362	.323	.252	.23
S12W-0125	12	.442	.37	.331	.256	.222
S16W-0125	16	.546	.457	.409	.317	.281

SOLDERLESS WRAP TERMINATION

S8W-0500*	8	$0.451	$0.377	$0.338	$0.262	$0.233
S9W-0500*	9	.482	.405	.362	.282	.25
S11W-0500*	11	.491	.411	.369	.285	.284
S12W-0500*	12	.536	.448	.403	.31	.285
S8W-0525†	8	.457	.382	.341	.266	.235
S9W-0525†	9	.443	.371	.332	.257	.229
S11W-0525†	11	.495	.416	.372	.287	.256
S12W-0525†	12	.54	.453	.403	.316	.262

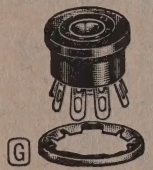
Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

SERIES 88 COMPACT TUBE SOCKETS (FIG. F)

Black phenolic body; fit 1 1/16" mounting holes on 1 5/16" centers.

Amphenol No.	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
88-8	8 Octal	$0.403	$0.337	$0.304	$0.234	$0.208
88-8TM*	8 Octal	.501	.42	.377	.292	.26
88-8X	8 Loctal	.604	.505	.455	.351	.311

*Mica-filled; with silver plated contacts; stainless steel mtg. plate.


G

H

I

MINIATURE 7- AND 9-PIN SOCKETS

Fig. G Type: Retainer ring style fits D-shaped or round hole 5/8" dia. **Fig. H and I Types:** Shielded types mount above chassis; unshielded, below chassis. Min. 7-pin sockets fit 5/8" hole with 7/8" mtg. centers; 9-pin sockets fit 3/4" hole, 1 1/8" centers.

Amph. No.	Fig.	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1000-2499*
78-S3S	G	3	$0.186	$0.156	$0.14	$0.109	$0.96
78-S4S	G	4	.281	.234	.21	.164	.144
78-S5S	G	5	.295	.246	.221	.171	.153
78-S6S	G	6	.299	.252	.224	.174	.155
78-7P	G	7	.483	.404	.361	.28	.249
147-500	I	7	.524	.436	.389	.304	.271
147-504	I	7	.464	.388	.348	.27	.241
147-505	I	7	.538	.45	.404	.312	.278
59-409	I	9	.559	.466	.419	.323	.29
59-410	I	9	.572	.48	.432	.337	.30
147-905	H	7	.634	.53	.474	.369	.328
147-913	H	7	.631	.528	.473	.367	.327
147-916	H	7	.735	.614	.551	.428	.381

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

AMPHENOL RF CONNECTOR PRICING

MIL No.	Amphenol Number	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-2499
CW-123	31-006	$1.18	$0.92	$0.76	$0.65	.....
CW-155	31-007	.54	.42	.35	.30	.....
CW-155A	31-027	.54	.41	.33	.29	.....
CW-159	31-017	1.62	1.23	1.00	.87	.....
CW-282	31-210	.92	.70	.57	.50	.....
MX-913	82-106	1.04	.79	.64	.56	.....
MX-1142	82-512	1.52	1.19	.97	.84	.....
MX-1143	82-513	1.52	1.19	.97	.84	.....
PL-258	83-1J	1.31	1.07	.90	.78	$0.68
PL-259	83-1SP	.78	.64	.54	.47	.41
PL-259A	83-1SPN	1.45	1.19	1.00	.86	.76
SO-239	83-1R	.68	.56	.47	.41	.36
SO-239	83-1RTY	1.18	.96	.81	.70	.62
SO-239A	83-798	1.76	1.44	1.21	1.04	.92
.....	27-1	1.00	.78	.64	.55	.50
.....	27-2	1.16	.91	.74	.64	.58
.....	27-3	1.36	1.06	.87	.75	.68
.....	27-4	1.58	1.23	1.01	.87	.79
.....	27-6	2.84	2.22	1.82	1.56	1.42
.....	27-8	1.22	.95	.78	.67	.61
.....	27-9	.96	.75	.61	.53	.48
.....	27-10	1.52	1.19	.97	.84	.76
.....	27-12	3.46	2.70	2.21	1.91	.....
.....	27-13	1.72	1.34	1.10	.95	.86
.....	27-14	.....	.....	1.09	.94	.....
.....	27-15	1.62	1.26	1.04	.89	.81
.....	27-16	.....	.....	1.22	1.05	.....
.....	27-18	1.74	1.36	1.11	.96	.....
.....	27-19	1.48	1.15	.95	.81	.74
.....	27-20	4.20	3.28	2.69	2.31	.....
.....	27-21	1.62	1.26	1.04	.89	.81
.....	27-22	2.46	1.92	1.57	1.35	1.23
.....	27-24	.....	.....	2.84	2.44	.....
.....	27-25	3.68	2.87	2.36	2.02	1.84
.....	27-26	2.44	1.90	1.56	1.34	1.22
.....	27-27	.....	.....	3.36	2.89	.....
.....	27-30	2.80	2.18	1.79	1.54	.....
.....	27-31	3.70	2.89	2.37	2.04	.....
.....	27-32	.....	.....	2.32	2.00	.....
.....	27-33	4.18	3.26	2.68	2.30	.....
.....	27-34	2.96	2.31	1.89	1.63	1.48
.....	27-35	3.04	2.37	1.95	1.67	.....
.....	27-45	.....	.....	4.12	3.54	.....
UG1619/U	27-101	1.90	1.48	1.22	1.05	.95
UG1463/U	27-102	.....	.....	2.57	2.21	.....
UG1468/U	27-103	3.73	2.91	2.39	2.05	.....
UG1460/U	27-104	3.90	3.04	2.44	2.15	.....
UG1467/U	27-105	3.40	2.65	2.18	1.89	.....
.....	27-106	3.50	2.73	2.24	1.92	1.75
UG1464/U	27-108	2.50	1.95	1.60	1.38	.....
UG-18B/U	82-86	3.32	2.59	2.12	1.83	.....
UG-18C/U	82-203	2.50	1.95	1.60	1.38	.....
UG-19B/U	82-87	.....	.....	2.45	2.10	.....
UG-20B/U	82-88	3.08	2.40	1.97	1.69	.....
UG-21B/U	82-61	2.28	1.78	1.46	1.25	1.14
UG-21C/U	82-96	2.50	1.95	1.60	1.38	.....
UG-21D/U	82-202	2.09	1.65	1.35	1.16	1.06
UG-22B/U	82-62	3.10	2.42	1.98	1.71	.....
UG-23B/U	82-63	2.66	2.07	1.70	1.46	.....
UG-23D/U	82-209	2.13	1.66	1.36	1.17	.....
UG-27A/U	82-64	5.30	4.13	3.39	2.92	.....
UG-27B/U	82-98	5.48	4.27	3.51	3.01	.....
UG-27C/U	82-213	3.92	3.06	2.51	2.16	.....
UG-28A/U	82-99	5.84	4.56	3.74	3.21	.....
UG-29A/U	82-65	3.22	2.51	2.06	1.77	.....
UG-29B/U	82-101	3.12	2.37	1.93	1.68	.....
UG-30/U	82-66	5.98	4.66	3.83	3.29	.....
UG-57B/U	82-100	3.12	2.37	1.93	1.68	.....
UG-58/U	82-24	1.60	1.25	1.02	.88	$0.80
UG-58A/U	82-97	1.72	1.34	1.10	.95	.86
UG-59A/U	82-38	6.80	5.17	4.22	3.67	.....
UG-59B/U	82-804	5.90	4.60	3.78	3.25	.....
UG-60A/U	82-39	6.80	5.17	4.22	3.67	.....
UG-60B/U	82-814	6.30	4.91	4.03	3.47	.....
UG-61A/U	82-40	7.30	4.69	4.67	4.02	.....
UG-83/U	14000	6.80	5.30	4.35	3.74	.....
UG-85/U	82-21	5.50	4.29	3.52	3.03	.....
UG-87/U	82-42	.....	.....	3.52	3.03	.....
UG-88/U	31-002	1.02	.80	.65	.56	.51
UG-88B/U	31-018	1.22	.95	.78	.67	.61
UG-88C/U	31-202	1.14	.87	.70	.60	.57
UG-89/U	31-005	1.78	1.35	1.10	.96	.89
UG-89A/U	31-019	1.60	1.24	1.02	.88	.....
UG-89B/U	31-205	1.28	1.00	.82	.70	.....
UG-94A/U	82-84	3.54	2.71	2.23	1.91	.....
UG-95A/U	82-89	3.40	2.58	2.13	1.84	.....
UG-96A/U	82-90	3.96	3.09	2.53	2.18	.....
UG-106/U	83-1H	.65	.54	.45	.39	.34
UG-107A/U	82-36	7.74	6.04	4.95	4.26	.....
UG-107B/U	82-102	7.06	5.37	4.38	3.81	.....

MIL No.	Amphenol Number	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-2499
UG-111/U	83-750	$ 1.34	$ 1.10	$ .92	$ .79	$ .70
UG-146/U	4400	5.24	4.09	3.35	2.88	.....
UG-160A/U	82-67	4.58	3.57	2.93	2.52	.....
UG-160B/U	82-93	3.72	2.90	2.38	2.05	.....
UG-167A/U	82-104	9.50	7.41	6.08	5.23	.....
UG-175/U	83-185	.24	.20	.17	.14	.13
UG-176/U	83-168	.25	.20	.17	.15	.13
UG-177/U	83-765	.58	.48	.40	.35	.30
UG-185/U	4500	1.86	1.45	1.19	1.02	.93
UG-201/U	31-830	4.07	3.17	2.60	2.24	.....
UG-201A/U	31-216	2.28	1.78	1.46	1.25	1.14
UG-212A/U	82-91	8.32	6.48	5.32	4.58	.....
UG-254A/U	31-016	7.28	5.53	4.51	3.93	.....
UG-255/U	2900	3.10	2.42	1.98	1.72	1.62
UG-260/U	31-012	1.30	1.01	.78	.66	.65
UG-260A/U	31-021	1.30	1.01	.83	.72	.65
UG-260B/U	31-212	1.20	.94	.74	.65	.60
UG-261/U	31-015	1.55	1.47	1.20	1.03	.....
UG-261A/U	31-022	1.66	1.36	1.21	1.04	.....
UG-261B/U	31-215	1.40	1.09	.90	.77	.....
UG-262/U	31-011	2.32	1.81	1.48	1.28	.....
UG-262A/U	31-023	.....	.....	2.05	1.76	.....
UG-262B/U	31-211	2.32	1.76	1.44	1.25	.....
UG-273/U	31-028	1.86	1.45	1.18	1.02	.96
UG-274/U	31-008	3.40	2.65	2.18	1.87	1.70
UG-274A/U	31-208	3.40	2.65	2.04	1.73	1.70
UG-290/U	31-003	1.30	1.01	.83	.72	.65
UG-290A/U	31-203	1.14	.87	.70	.60	.57
UG-291/U	31-001	3.18	2.42	1.97	1.72	1.52
UG-291A/U	31-020	3.18	2.42	1.97	1.72	1.52
UG-291B/U	31-201	2.02	1.54	1.25	1.09	.....
UG-306/U	31-009	3.20	2.50	2.05	1.76	1.60
UG-306A/U	31-209	3.44	2.61	2.13	1.86	.....
UG-309/U	8900	6.12	4.65	3.79	3.30	.....
UG-318/U	26700	6.90	5.38	4.42	3.80	.....
UG-333A/U	82-107	19.48	14.80	12.08	10.52	.....
UG-335/U	3025	6.46	5.04	4.13	3.55	.....
UG-349/U	2975	6.18	4.82	3.95	3.40	.....
UG-349A/U	31-217	3.22	2.51	2.06	1.77	.....
UG-363/U	83-1F	3.35	2.75	2.31	1.99	1.76
UG-372/U	83-1HP	.73	.60	.50	.43	.38
UG-414/U	47000	2.98	2.32	1.90	1.64	.....
UG-447/U	31-817	1.76	1.34	1.09	.95	.88
UG-491A/U	31-218	2.96	2.89	2.31	1.63	1.48
UG-492A/U	31-220	3.24	2.53	1.94	1.75	1.66
UG-495A/U	82-111	14.72	11.48	9.42	8.10	.....
UG-496/U	82-92	3.90	2.96	2.42	2.11	.....
UG-536/U	34000	3.50	2.73	2.24	1.93	.....
UG-560/U	82-805	5.80	4.52	3.71	3.19	.....
UG-564/U	82-508	4.12	3.21	2.64	2.27	.....
UG-565A/U	82-540	5.98	4.54	3.71	3.23	.....
UG-567A/U	82-535	6.26	4.76	3.88	3.38	.....
UG-568/U	82-504	3.20	2.43	1.98	1.73	.....
UG-572/U	82-503	3.58	2.79	2.29	1.97	.....
UG-573A/U	82-530	3.38	2.64	2.16	1.86	.....
UG-593/U	35500	.....	.....	4.13	3.55	.....
UG-624/U	2075	2.83	2.21	1.81	1.56	.....
UG-625B/U	31-236	0.92	0.72	0.58	0.50	0.46
UG-628A/U	82-532	4.88	3.81	3.12	2.68	.....
UG-634/U	82-515	5.40	4.21	3.46	2.97	.....
UG-635/U	83175	4.36	3.31	2.70	2.35	.....
UG-636A/U	83200	4.38	3.33	2.72	2.37	.....
UG-646/U	83-1AP	2.29	1.88	1.58	1.36	1.20
UG-657/U	31-102	1.60	1.26	.98	.84	.80
UG-680/U	82-811	3.68	2.87	2.36	2.02	1.84
UG-709A/U	82-534	3.50	2.73	2.24	1.93	.....
UG-710A/U	82-531	6.80	5.17	4.22	3.67	.....
UG-909/U	31-206	1.96	1.53	1.25	1.08	.98
UG-910/U	31-207	2.00	1.52	1.24	1.08	.....
UG-913/U	31-204	4.12	3.21	2.64	2.27	2.08
UG-914/U	31-219	1.54	1.20	.99	.87	.82
UG-940A/U	82-212	.....	.....	2.60	2.23	.....
UG-941A/U	82-204	3.58	2.73	2.22	1.93	.....
UG-1034/U	5225	7.66	5.98	4.90	4.21	.....
UG-1094/U	31-221	.84	.66	.52	.45	.42
UG-1098/U	31-222	4.06	3.09	2.52	2.19	2.03
.....	31-026	.72	.56	.46	.40	.....
.....	13-105	2.00	1.56	1.27	1.10	.....
.....	31-842	2.04	1.59	1.31	1.12	.....
.....	31-850	5.39	4.20	3.45	2.96	.....
.....	82-112	3.14	2.45	2.01	1.73	.....
.....	82-130	2.56	2.00	1.64	1.41	.....
.....	82-332	2.38	1.86	1.52	1.31	1.19
.....	82-333	2.50	1.95	1.60	1.38	.....
.....	82-334	2.73	2.13	1.75	1.50	.....
.....	82-335	3.98	3.11	2.55	2.19	.....
.....	82-336	7.64	5.96	4.89	4.20	.....
.....	82-337	2.34	1.83	1.50	1.29	.....

Continued on the following page

COMPLETE LINE OF RF CONNECTORS FOR PROMPT DELIVERY.

ASK FOR UNLISTED OR NON-STOCK ITEMS, AVAILABLE ON SPECIAL ORDER.

AMPHENOL RF CONNECTOR PRICING (CONTINUED)

MIL No.	Amphenol Number	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-2499
	82-340	$ 2.38	$ 1.85	$ 1.52	$1.31	
	82-352			2.18	1.86	
	82-352-1			3.39	2.92	
	82-356			1.99	1.71	
	82-356-1			1.90	1.63	
	82-357	8.80	6.86	5.63	4.84	
	82-360			2.75	2.36	
	82-360-1			2.75	2.36	
	82-816	6.41	5.00	4.10	3.52	
	82-833	10.73	8.67	6.87	5.90	
	82-835	6.15	4.79	3.93	3.38	
	82-856	11.62	9.06	7.44	6.39	
	82-5370	2.84	2.22	1.82	1.56	
	82-5371	3.08	2.40	1.97	1.69	
	82-5373	5.55	4.33	3.55	3.05	
	82-5374	6.41	5.00	4.10	3.52	
	82-5375	2.50	1.95	1.86	1.38	
	82-5379	6.05	4.72	3.87	3.33	
	82-5381	3.17	2.47	2.03	1.74	
	83-1T	3.73	3.06	2.57	2.22	1.95
	83-59	6.13	5.03	4.22	3.64	3.21
	83-716	6.33	5.19	4.36		
	83-850	4.62	3.79	3.18		
	83-851	3.11	2.55	2.14	1.85	1.63
	83-877	2.15	1.76	1.48	1.28	1.12
	83-878	1.09	.89	.75	.65	.57
	131-1025	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1026	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1027	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1028	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1035	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1036	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1037	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1038	67.25*	54.00†	46.25‡	42.25§	38.50#
	131-1201	94.50*	75.75†	65.00‡	59.50§	54.00#
	131-1202	94.50*	75.75†	65.00‡	59.50§	54.00#
	227-900	58.00				
	227-901	58.00				
	227-902	15.00				
	227-913	4.25				
	227-914	4.25				
	227-944	87.00				
	227-1221-09	37.00				
	227-1221-11	37.00				
	227-1221-13	37.00				
	227-1221-15	37.00				
	227-1221-23	37.00				
	227-1221-25	37.00				
	227-1221-29	37.00				
	227-1221-57	37.00				
	227-1221-59	37.00				
	901-101	3.05	2.38	1.96	1.68	
	901-102	2.56	2.00	1.64	1.41	
	901-103	4.00	3.12	2.56	2.20	
	901-104	3.30	2.57	2.11	1.81	
	901-105	3.56	2.78	2.28	1.96	
	901-106	3.56	2.78	2.28	1.96	
	901-107	4.84	3.78	3.09	2.66	
	901-108	4.51	3.52	2.88	2.48	
	901-109	3.02	2.36	1.93	1.66	
	901-110	2.42	1.89	1.55	1.33	
	901-111	3.69	3.03	2.54	2.19	
	901-112	2.82	2.20	1.80	1.55	
	901-113	1.83	1.43	1.17	1.01	
	901-116	3.60	2.81	2.30	1.98	

MIL No.	Amphenol Number	Net Each, Lots of 1-24	25-99	100-499	500-999	1000-2499
	901-117	4.63	3.61	2.96	2.54	
	901-118	4.33	3.38	2.77	2.38	
	901-119	2.76	2.15	1.77	1.52	
	901-120	3.86	3.01	2.47	2.12	
	901-121	6.14	4.79	3.93	3.38	
	901-122	5.41	4.23	3.46	2.97	
	2800	11.56	9.02	7.40	6.36	
	4900	6.83	5.33	4.37	3.76	
	5850	13.18	10.28	8.43	7.25	
	10400	8.44	6.58	5.40	4.64	
	10425	15.98	12.46	10.23	8.79	
	12025	4.26	3.32	2.73	2.34	
	12650	5.78	4.51	3.69	3.18	
	21850	8.32	6.49	5.32	4.58	
UG931/U	27000	2.48	1.93	1.59	1.36	1.24
	27025	4.82	3.76	3.08	2.65	
UG1016A/U	27075	4.50	3.42	2.79	2.43	
UG932A/U	27975	2.44	1.85	1.51	1.32	
UG932/U	28000	3.20	2.50	2.05	1.76	1.60
	28100	8.54	6.66	5.46	4.70	
	28125	8.02	6.26	5.13	4.41	
UG961/U	28225	6.00	4.68	3.83	3.30	
	28275	8.70	6.79	5.57	4.79	
	28325	4.70	3.67	3.00	2.59	
	28375	6.36	4.96	4.07	3.50	
	28400	7.60	5.93	5.09	4.38	
	29100	4.52	3.53	2.89	2.49	
	32750	6.43	5.28	4.43		
	34275			4.04	3.48	
	34375	16.46	12.84	10.54	9.05	
	34400			9.54	8.20	
	34450	12.36	9.64	7.91	6.80	
	34475	28.72	22.40	18.38	15.80	
	34625	1.74	1.36	1.11	.96	
	34825			.99		
	36650	2.08	1.62	1.33	1.14	
	36675	4.18	3.26	2.68	2.30	
	36775	1.48	1.15	.95	.81	.74
	36800	2.16	1.68	1.38	1.19	
	36825	2.72	2.12	1.74	1.50	
	36875	1.54	1.20	.99	.85	.77
	36900	2.26	1.76	1.44	1.24	
	36925	2.12	1.74	1.46	1.26	1.11
	47200	4.98	3.88	3.19	2.74	
	47250	5.32	4.15	3.40	2.93	
	47275	5.30	4.13	3.39	2.92	
	52975	28.62	22.32	18.32	15.74	
	53100	14.32	11.17	9.16	7.88	
	53150	13.77	10.75	8.82	7.58	
	53175	21.92	17.10	14.03	12.06	
	53200	49.12	38.31	31.44	27.02	
	53225	22.56	17.60	14.44	12.41	
	53250	21.52	16.79	13.77	11.84	
	68150	2.44	1.90	1.56	1.34	
	68175	1.48	1.15	.95	.81	.74
	69350	2.72	2.12	1.74	1.50	
	79025	7.74	6.04	4.95	4.26	
	79675	5.50	4.29	3.52	3.03	
	95575	6.10	4.76	3.90	3.36	
	95600	6.04	4.72	3.87	3.32	
	95625	6.27	4.88	4.01	3.44	
	95650			3.53		
	95675	5.40	4.43	3.72		
	95700	3.26	2.54	2.08	1.79	
	95725	3.14	2.45	2.01	1.73	
	95750	3.26	2.54	2.08	1.79	
	95800	3.38	2.64	2.16	1.86	
	97775	3.72	2.90	2.38	2.05	
	97875	7.13	5.55	4.56	3.92	
	97900	7.00	5.46	4.48	3.85	
	97925	7.13	5.55	4.56	3.92	

*Lots of: 1–9; †10–24; ‡25–49; §50–99; #100–249.

COMPLETE LINE OF RF CONNECTORS FOR PROMPT DELIVERY.

ASK FOR UNLISTED OR NON-STOCK ITEMS, AVAILABLE ON SPECIAL ORDER.

AUGAT Plugs and Sockets

LOW PROFILE, PRINTED CIRCUIT DIP SOCKETS

Low profile, .063″ above board, sockets with closed, tapered entry insulator design. Anti-shorting wafer on bottom of each socket. Available with gold or tin plated contacts. **Contacts:** Wire-wrap—2 level and 3 level. PC—Style A, .005″ x .024″ straight; Style B, .005″ x .024″ crimped for retention on board during wave soldering.

Augat No.	Contacts No.	Contacts Plating	Style	Net Each, Lots of 1-99	100-499	500-999	1000-4999
308-AG37D	8	Tin	PC-B	$0.186	$0.162	$0.145	$0.132
308-AG38D	8	Gold	PC-B	.267	.234	.209	.19
308-AG39D	8	Tin	PC-A	.186	.162	.145	.132
308-AG40D	8	Gold	PC-A	.267	.234	.209	.19
314-AG35F	14	Gold	WW-3	.48	.42	.375	.342
314-AG36F	14	Gold	WW-2	.48	.42	.375	.342
314-AG37D	14	Tin	PC-B	.224	.196	.175	.16
314-AG38D	14	Gold	PC-B	.371	.325	.29	.264
314-AG39D	14	Tin	PC-A	.224	.196	.175	.16
314-AG40D	14	Gold	PC-A	.371	.325	.29	.264
314-AG43F	14	Tin	WW-3	.40	.35	.312	.285
314-AG44F	14	Tin	WW-2	.40	.35	.312	.285
316-AG35F	16	Gold	WW-3	.528	.462	.412	.376
316-AG36F	16	Gold	WW-2	.528	.462	.412	.376
316-AG37D	16	Tin	PC-B	.243	.213	.19	.173
316-AG38D	16	Gold	PC-B	.41	.358	.32	.292
316-AG39D	16	Tin	PC-A	.243	.213	.19	.173
316-AG40D	16	Gold	PC-A	.41	.358	.32	.292
316-AG43F	16	Tin	WW-3	.432	.378	.337	.307
316-AG44F	16	Tin	WW-2	.432	.378	.337	.307
318-AG37D	18	Tin	PC-B	.264	.231	.206	.188
318-AG38D	18	Gold	PC-B	.448	.392	.35	.319
318-AG39D	18	Tin	PC-A	.264	.231	.206	.188
318-AG40D	18	Gold	PC-A	.448	.392	.35	.319

HIGH DENSITY SOCKETS

Low profile 28-pin sockets designed to mate with the 9P28 Series Plug Assemblies. Available with mounting ears and wire wrap terminations or without mounting ears and printed circuit terminations. Two piece tapered-entry socket terminals. Four-leaf machined closed-entry inner contact and machined outer sleeve, beryllium copper, gold over nickel plated. Terminations are brass, gold over nickel or gold-plated.

Augat No.	Terminals Plating	Terminals Type	Net Each, Lots of 1-99	100-499	500-999	1000-4999
528-AG24F	Gold	Wire Wrap	$2.93	$2.56	$2.29	$1.96
528-AG25F	Tin		2.66	2.32	2.08	1.78
528-AG26F	Gold		2.93	2.56	2.29	1.96
528-AG27F	Tin		2.66	2.32	2.08	1.78
528-AG28D	Gold	PC	2.00	1.75	1.56	1.34
528-AG29D	Tin		1.82	1.60	1.43	1.22

LSI ADAPTERS

Accept 28 or 40 pin LSI DIP's soldered into adapter which then plugs into DIP pattern on packaging panel.

Augat No.	LSI Pins Up To	Net Each, Lots of 1-99	100-449	500-999	1000-4999
628-HG16	28	$4.91	$4.40	$4.09	$3.65
640-HG16	40	6.82	6.12	5.70	5.08

PROGRAMMING JUMPER PLUG ASSEMBLIES

Program plugs to perform expanded DIP switch functions. Assemblies span .3″ centers to connect opposing contacts in IC patterns. Available with 1, 2, 3, 4, 7, 8 or 9 jumpers per assembly and in special configurations combining .1″ and .3″ center shorting jumpers on special order. **Insulator:** Thermoplastic polyester. **Pins:** Phosphor bronze, gold over nickel plated.

Augat No.	No. of Positions	Net Each, Lots of 1-99	100-499	500-999	1000-4999
8136-475G1	1	$0.29	$0.24	$0.22	$0.19
8136-475G2	2	.30	.26	.23	.20
8136-475G3	3	.33	.30	.26	.22
8136-475G4	4	.39	.34	.305	.25
8136-475G7	7	.55	.47	.43	.36
8136-475G8	8	.59	.53	.465	.40
8136-475G9	9	.65	.57	.51	.43

25-PIN CONTACT STRIP

Accepts flat dual inline IC leads or round leads to .025″ dia. Strips may be mounted side by side or end to end for any required pattern; ends may be cut off for continuous spacing on .100″ centers for more than 25 contacts on one row. Available with wire wrap (AG1F) or PC (AG1D) termination; alignment spacer provided with wire wrap termination sockets. Body is diallyl phthalate; wire wrap contacts are gold over nickel plated; PC contacts are spring temper beryllium copper over nickel plated. Size, .200″ w. x 2.560″ d. x .285″ h.

Augat No.	Net Each, Lots of 1-99	100-499	500-999	1M-4999	Augat No.	Net Each, Lots of 1-99	100-499	500-999	1M-4999
325-AG1F	$2.64	$2.33	$2.06	$1.73	325-AG1D	$1.73	$1.54	$1.34	$1.16

SERIES 514 AND 516 DIP SOCKETS

Ultra low profile sockets accept 8, 14, 16, 18, 22, 24, 28, 32, 36 or 40 lead DIP packages. Two piece socket terminals. Thermoplastic polyester insulator. Beryllium copper, gold over nickel-plated machined inner contacts. Brass, gold or tin plated machined outer sleeves. **Terminals:** PC, .020″ dia. x .110″ h. (min.); W/W, .025″ sq. x .500″ h.

Augat No.	Contacts	Sleeve Plating	Net Each, Lots of 1-99	100-499	500-999	1000-4999
508-AG10D	8	Gold	$0.61	$0.54	$0.49	$0.40
508-AG11D	8	Tin	.56	.50	.45	.37
514-AG10D	14	Gold	.89	.80	.71	.60
514-AG11D	14	Tin	.77	.68	.60	.50
516-AG10D	16	Gold	1.02	.89	.81	.68
516-AG11D	16	Tin	.86	.75	.68	.56
518-AG10D	18	Gold	1.30	1.14	1.04	.88
518-AG11D	18	Tin	1.09	.96	.86	.71
522-AG-10D	22	Gold	1.54	1.36	1.22	1.03
522-AG11D	22	Tin	1.34	1.17	1.05	.87
524-AG10D	24	Gold	1.72	1.53	1.38	1.16
524-AG11D	24	Tin	1.43	1.26	1.12	.94
528-AG10D	28	Gold	1.84	1.72	1.55	1.30
528-AG11D	28	Tin	1.64	1.43	1.28	1.07
532-AG10D	32	Gold	2.15	1.91	1.72	1.44
532-AG11D	32	Tin	1.83	1.60	1.43	1.18
526-AG10D	36	Gold	2.40	2.12	1.91	1.61
536-AG11D	36	Tin	2.01	1.76	1.58	1.31
540-AG10D	40	Gold	2.65	2.34	2.11	1.78
540-AG11D	40	Tin	2.22	1.94	1.74	1.44

*Numbers shown for printed-circuit termination; to order wire wrap termination, change **D** to **F**. (Ex. **514-AG11F**(3 level Gold/Tin); **514-AG10F-2**(2 level Gold/Gold).).

LOW PROFILE PACKAGING SOCKETS FOR TRANSISTORS AND IC'S

Nylon insulated sockets for transistors and TO-5 type integrated circuits. Ultra low profie. Various colors available on request.

Augat No.	Contacts No.	Contacts Plating	Circle Dia.	Net Each, Lots of 1-99	100-499	500-999	1000-4999
8059-2G1	3	Gold	.200″	$0.43	$0.39	$0.35	$0.28
8059-2G2	3	Tin	.200″	.40	.34	.31	.25
8059-2G3	4	Gold	.200″	.55	.47	.43	.355
8059-2G4	4	Tin	.200″	.50	.44	.40	.33
8059-2G5	8	Gold	.200″	.95	.88	.80	.62
8059-2G6	8	Tin	.200″	.89	.78	.69	.56
8059-2G7	8	Gold	.230″	.95	.88	.80	.63
8059-2G8	8	Tin	.230″	.89	.78	.69	.56
8059-2G9	10	Gold	.230″	1.18	1.02	.97	.76
8059-2G10	10	Tin	.230″	1.10	.97	.87	.70

CRYSTAL SOCKETS

Teflon insulated sockets for HC-6/U, HC-13/U and HC-25/U crystal sizes. For severe shock and vibration applications. Crystal easily inserted and removed. Printed circuit mounting with beryllium copper crystal holding clip.

Augat No.	Contact Material	Net Each, Lots of 1-99	100-499	500-999	1000-4999
8000-DG1	Beryllium Copper	$1.21	$1.15	$1.06	$0.99
8000-DG3	Phosphor Bronze	1.02	.97	.89	.81

LED NUMERIC DISPLAY SOCKETS

Precision matched contacts for ultra reliability. Printed circuit or chassis mounting. Single units standard with multi-patterns available. Printed circuit, Wire Wrap* or solder pocket terminals Come in 8, 14, and 16 contacts with .300″ between rows (.600″ for 8 contacts). Gold plated contacts and tin plated sleeves standard. Gold plated sleeves available on request. Thermoplastic polyester insulators. Two piece contact assembly (inner contact and outer sleeve). **Overall Size:** 8 pins, .750″ x .400″ x .135″; 14 pins, .750″ x .450″ x .135″; 16 pins, .850″ x .450″ x .135″. Dimensions without terminals. **Terminals:** PC, .020″ dia. x .110″ h. min.; W/W, .025″ sq. x .500″ h.

*Reg. Gardner-Denver TM.

Augat No.	Contacts	Description	Net Each, Lots of 1-99	100-499	500-999	1000-4999
508-AG8D	8	Right angle mtg., P.C.	$1.34	$1.18	$1.05	$0.88
508-AG4A	8	Horizontal mtg., S.P.	.86	.75	.68	.57
508-AG4F	8	Horizontal mtg., W.W.	.80	.69	.63	.52
514-AG7D	14	Right angle mtg., P.C.	1.84	1.62	1.44	1.21
516-AG7D	16	Right angle mtg., P.C.	2.12	1.87	1.66	1.39

TO-3 POWER TRANSISTOR SOCKETS

Phenolic or diallyl phthalate sockets for transistors with TO-3 case. Integral mounting saddle and threaded extrusions for maximum torque. Integral solder lug(s). Contacts accept .040″ dia. leads.

Augat No.	Insulation	Contact Plating	No. of Solder Lugs	Net Each, Lots of 1-99	100-499	500-999	1000-4999
8080-1G1	Phen.	Tin	2	$0.50	$0.43	$0.39	$0.32
8080-1G2	Dial	Silver	2	.515	.465	.44	.40
8080-1G3	Phen.	Tin	1	.50	.43	.39	.32
8080-1G4	Dial.	Silver	1	.515	.465	.44	.40
8080-1G7	Phen.	Gold	2	.445	.405	.37	.34

AUGAT Plugs and Sockets

DUAL INLINE IC SOCKETS

For testing and packaging of 14-, 16-, 24-, 36 and 40-pin integrated circuits. Accept packages with round or flat leads, 300-mil (500-mil for Series 324 type AG1; 600-mil for Series 324 type AG2 and Series 336 and 40 spacing between rows and 100-mil spacing between leads. Series 314 and 316 types AG1 and AG3 are standard profile types; Series 314 and 316 types AG5 and AG6 are low-profile types. Contoured entry holes guide IC leads into socket; suffix **R** indicates inner guide rails. Body is molded diallyl phthalate except (‡) polyester; contacts are gold over nickel plate except (§) tin plate. Series 314 and 316 are sold in multiples of 5 only.

Augat No.	Terminals	Max. Width	Net Each, Lots of 1-99	100-499	500-999	1000-4999
14-Pin Types						
314-AG5A-R	Solder	.800″	$0.86	$0.76	$0.68	$0.57
314-AG5D-R	PC	.800″	.84	.75	.67	.56
314-AG5A-2R	Solder	.800″	.50	.44	.39	.33
314-AG5D-2R	PC	.800″	.47	.42	.37	.31
314-AG5A-3R	Solder	.800″	.71	.64	.58	.48
314-AG5D-3R	PC	.800″	.70	.62	.55	.47
314-AG6A-R	Solder*	1.15″	1.00	.88	.79	.66
314-AG6A-2R	Solder*	1.15″	.63	.56	.50	.41
314-AG6A-3R	Solder*	1.15″	.85	.76	.68	.56
16-Pin Types						
316-AG5A-R	Solder	.900″	$1.09	$0.96	$0.85	$0.72
316-AG5D-R	PC	.900″	1.09	.96	.85	.72
316-AG5A-2R	Solder	.900″	.60	.53	.47	.38
316-AG5D-2R	PC	.900″	.57	.49	.43	.36
316-AG5A-3R	Solder	.900″	.82	.72	.65	.54
316-AG5D-3R	PC	.900″	.81	.71	.64	.53
316-AG6A-R	Solder*	1.25″	1.23	1.09	.96	.81
316-AG6D-R	PC*	1.25″	1.23	1.09	.96	.81
316-AG6A-2R	Solder*	1.25″	.74	.64	.56	.46
316-AG6D-2R	PC*	1.25″	.70	.61	.54	.44
316-AG6A-3R	Solder	1.25″	.96	.84	.76	.63
316-AG6D-3R	PC	1.25″	.96	.84	.76	.63
24-Pin Types						
324-AG1A	Solder	1.300″	$2.79	$2.45	$2.21	$1.83
324-AG2A	Pocket	1.250″	2.22	1.96	1.73	1.44
324-AG1D	PC	1.300″	2.79	2.45	2.21	1.83
324-AG2D	PC	1.250″	2.22	1.96	1.73	1.44
324-AG1F	Wire-Wrap#	1.300″	3.82	3.36	2.93	2.46
324-AG2F		1.250″	2.88	2.54	2.22	1.87
36-Pin Types						
336-AG2A	Solder Pocket	1.897″	$2.67	$2.35	$2.08	$1.74
336-AG2D	PC	1.897″	2.67	2.35	2.08	1.74
336-AG2F	Wire-Wrap	1.897″	3.66	3.22	2.83	2.36
336-AG3D	PC	1.897″	3.16	2.78	2.44	2.06
40-Pin Types						
340-AG5A	Solder Pocket	2.00″	$2.51	$2.21	$2.00	$1.66
340-AG5D	PC	2.00″	2.51	2.21	2.00	1.66
340-AG5F	Wire-Wrap	2.00″	4.10	3.62	3.17	2.66

*With mounting saddle: .900″ centers, 14-pin types; 1.00″ centers, 16-pin. #Reg. Gardner-Denver Co. TM.

LEAD SOCKET CARRIERS

Aluminum carrier provides patterns of lead sockets for easy group insertion into board. Eliminates time consuming assembly of individual lead sockets. Carrier is disposable after wave soldering. Contacts are two piece—four-leaf machined closed-entry contact and machined outer sleeve.

Augat No.	Contacts No.	Contacts Spacing	Plating	Net Each, Lots of 1-99	100-499	500-999	1000-4999
706-AG1D	0	.3″ x .1″	Gold	$0.40	$0.35	$0.31	$0.27
706-AG2D	0	.3″ x .1″	Tin	.35	.31	.28	.24
708-AG1D	8	.3″ x .1″	Gold	.56	.49	.43	.36
708-AG2D	8	.3″ x .1″	Tin	.49	.43	.38	.32
714-AG1D	14	.3″ x .1″	Gold	.89	.77	.71	.60
714-AG2D	14	.3″ x .1″	Tin	.76	.67	.60	.50
716-AG1D	16	.3″ x .1″	Gold	1.02	.89	.81	.68
716-AG2D	16	.3″ x .1″	Tin	.85	.75	.67	.55
718-AG1D	18	.3″ x .1″	Gold	1.12	1.01	.90	.76
718-AG2D	18	.3″ x .1″	Tin	.96	.84	.75	.63
722-AG1D	22	.4″ x .1″	Gold	1.38	1.20	.92	.86
722-AG2D	22	.4″ x .1″	Tin	.98	.88	.75	.70
724-AG3D	24	.6″ x .1″	Gold	1.52	1.35	1.22	1.03
724-AG4D	24	.6″ x .1″	Tin	1.28	1.11	.84	.76
728-AG3D	28	.6″ x .1″	Gold	1.76	1.55	1.40	1.17
728-AG4D	28	.6″ x .1″	Tin	1.46	1.29	1.17	.97
732-AG3D	32	.6″ x .1″	Gold	2.01	1.79	1.61	1.36
732-A64D	32	.6″ x .1″	Tin	1.67	1.46	1.30	1.09
736-AG3D	36	.6″ x .1″	Gold	2.27	2.01	1.81	1.53
736-AG4D	36	.6″ x .1″	Tin	1.89	1.65	1.47	1.23
740-AG3D	40	.6″ x .1″	Gold	2.51	2.22	2.00	1.68
740-AG4D	40	.6″ x .1″	Tin	2.10	1.84	1.64	1.37

PACKAGING SOCKETS FOR TO-5 IC's

Teflon*-insulated sockets for use with TO-5 type integrated circuits. Closed-entry contacts are beryllium copper, gold over nickel-plated. Chamfered lead holes for easy insertion. All push-fit mount in .366″–.369″ dia. hole. Terminal sleeves, gold over nickel-plated brass.

*Reg. DuPont trademark.

Augat No.	No. Contacts	Type Terminals	Pin Circle Dia.	Net Each, Lots of 1-99	100-499	500-999	1000-4999
8058-1G19	8	Solder	.200″	$1.58	$1 40	$1.24	$1.01
8058-1G22	10	Solder	.230″	1.97	1.73	1.55	1.26
8058-1G28	12	Solder	.280″	2.31	2.01	1.82	1.47
8058-1G31	10	PC	.230″	1.96	1.72	1.54	1.25
8058-1G32	8	PC	.200″	1.58	1.40	1.29	1.07
8058-1G37	8	Turret	.200″	1.58	1.40	1.24	1.01
8058-1G38	10	Turret	.230″	1.96	1.72	1.54	1.25
8058-1G41	12	Turret	.280″	2.31	2.01	1.82	1.47
8058-1G42	6	PC	.200″	1.20	1.05	.95	.77
8058-1G43	6	Solder	.200″	1.23	1.09	.97	.79
8058-1G44	6	Turret	.200″	1.23	1.09	.97	.79
8058-1G45	8	PC	.230″	1.53	1.34	1.20	.99
8058-1G46	8	Solder	.230″	1.58	1.40	1.24	1.01
8058-1G47	8	Turret	.230″	1.58	1.40	1.24	1.01
8058-1G48	6	PC	.200″	1.23	1.09	.97	.79
8058-1G49	8	PC	.200″	1.58	1.40	1.24	1.01
8058-1G50	8	PC	.230″	1.58	1.40	1.24	1.01
8058-1G51	12	PC	.280″	2.31	2.01	1.82	1.47
8058-1G55	12	PC	.250″	2.46	2.16	1.93	1.56
8058-1G91	10	PC	.230″	1.95	1.71	1.54	1.24
8058-24G1	10	PC	.230″	1.98	1.74	1.54	1.27
8058-39G3	8	PC	.200″	1.62	1.42	1.27	1.04
8058-39G4	8	PC	.230″	1.62	1.42	1.27	1.04

ADAPTER PLUGS

Used for interposing discrete components and for modular construction with PC boards and substrates. Terminals are on same dimension as IC pattern. Base is glass-filled nylon; pins are phosphor bronze, gold over nickel plated. Contact pins available in three styles: round, solder pocket and slotted (standard). Terminal pins are .190″ long x .016″ sq.

Augat No.	No. Contacts	Pin Spacing Inches	Net Each, Lots of 1-99	100-499	500-999	1000-4999
614-CG1	14	.300 x .100	$1.39	$1.22	$1.10	$0.90
614-CG3	14	.600 x .100	1.54	1.36	1.22	1.02
614-DG5	14	.300 x .100	.51	.45	.40	.34
616-CG1	16	.300 x .100	1.56	1.38	1.23	1.02
616-CG3	16	.600 x .100	1.71	1.50	1.34	1.10
616-DG5	16	.300 x .100	.58	.45	.40	.34
624-CG1	24	.600 x .100	2.41	2.12	1.90	1.56
628-CG2	28	.600 x .100	2.72	2.40	2.16	1.77
636-CG1	36	.600 x .100	3.39	2.98	2.68	2.22
640-CG1	40	.600 x .100	3.86	3.30	2.97	2.52

26-PIN PLUG AND HEADER ASSEMBLY

Self-stripping "U" contact connection on round multiconductor cable. Plug (Augat No. 4P26-1) is glass-filled nylon with phosphor bronze, gold over nickel plated contacts. Cable (Augat No. 14010-2P8) comes in 100-ft. rolls; 28-gauge stranded 26-conductor copper wire with P.V.C. insulation. Header assembly (Augat No. 5P26-1) is glass filled nylon with phosphor bronze, gold over nickel plated terminals. Size: plug, .245″ w. x 1.500″ d. x .490″ h.; header assembly, .240″ w. x 1.900″ d. x .125″ h. Mounting centers, 1.600″.

Augat No.	No. Contacts	Wire Type	Lgth. In.	Ends	Net Each, Lots of 1-99	100-499	500-999	1000-4999
4P26-1	26	Plug Only	.....	.....	$2.61	$2.28	$1.99	$1.74
4P26-1R12-1	26	Flat	12	1	4.10	3.59	3.13	2.74
4P26-1R12-2	26	Flat	12	2	7.68	6.72	5.86	5.14
4P26-1R24-1	26	Flat	24	1	4.56	4.00	3.48	3.05
4P26-1R24-2	26	Flat	24	2	8.15	7.13	6.22	5.45
4P26-1R36-1	26	Flat	36	1	5.13	4.40	3.84	3.36
4P26-1R36-2	26	Flat	36	2	8.60	7.53	6.56	5.75
6P8-1T12-1	8	Sep.	12	1	2.20	1.93	1.73	1.42
6P26-1T12-1	26	Sep.	12	1	6.79	5.96	5.34	4.39
T4P26		Assembly Tool			55.00	.....	.....	.....

HIGH DENSITY PLUG ASSEMBLIES

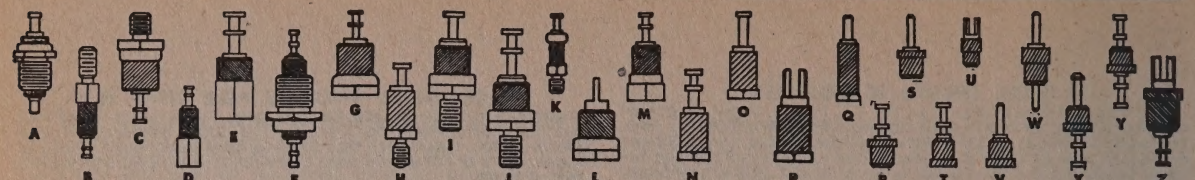
Low profile 28-pin single and double ended plug and cable assemblies. Designed for use with Series 8136 High Density Packaging Panels or can be used separately for bulkhead mounting. **Plug:** Thermoplastic polyester. **Pins:** Phosphor bronze, gold over nickel plated. **Size:** .805″ w. x .410″ h. x .495″ d. **Color Code:** Write for detailed color code wiring diagram. Plugs mate with Series 528 Sockets.

Augat No.	Description	Net Each, Lots of 1-99	100-499	500-999	1000-4999
9P28-2S12-1	12″ assy. single	$10.10	$ 8.83	$ 7.89	$ 6.75
9P28-2S12-2	12″ assy. double	17.17	15.02	13.41	11.48
9P28-2S24-1	24″ assy. single	11.18	9.79	8.74	7.48
9P28-2S24-2	24″ assy. double	18.27	15.99	14.28	12.22
9P28-2S36-1	36″ assy. single	12.26	10.72	9.58	8.20
9P28-2S36-1	36″ assy. double	19.36	16.94	15.13	12.95
9P28-2G1	Base with pins	2.53	2.21	1.98	1.69
8136-742P1	Hood	.55	.50	.44	.39

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

INSULATED TERMINALS, HANDLES AND BOARDS



STUD-TAPPED AND RIVET-MOUNTING INSULATED TERMINALS

Insulating Material: Teflon for Nos. 1502 thru 1511, 1945 and 1947; phenolic for 1581 and 1795; diallyl for 4810 thru 4895; all others ceramic.

Cambion Number*	MIL-T-55155 Number	Fig.	Net Each, Lots of§ 10-99	100-499	500-999	1000-2499	2500-4999*
1502-01-0519	FT20XA01	A	$0.88	$0.68	$0.62	$0.55	$0.52
1503-01-0519†	SE09(0/9)E01	B	.56	.43	.40	.35	.33
1504-01-0519†	SE09(0/9)E02	B	.56	.43	.40	.35	.33
1510-01-0519†	SE10(0/9)D01	D	.56	.43	.40	.35	.33
1511-01-0519†	SE10(0/9)D02	E	.56	.43	.40	.35	.33
1581-01-01	.....	C	.56	.43	.40	.35	.33
1581-03-01	.....	C	.56	.43	.40	.35	.33
1581-05-01	.....	C	.56	.43	.40	.35	.33
1795-01-01	.....	F	.97	.75	.69	.61	.57
1942-01/02-05‡	SE21X03/05	C	.61	.47	.43	.38	.36
1942-01/02-01‡	.....	C	.61	.47	.43	.38	.36
1945-01-0519	.....	C	.81	.62	.58	.51	.48
1945-02-0519	.....	C	.81	.62	.58	.51	.48
1947-01-0519	.....	G	.88	.68	.62	.55	.52
1947-02-0519	.....	G	.88	.68	.62	.55	.52
1980-01-01	.....	I	.58	.45	.41	.37	.34
1980-05-01	.....	I	.58	.45	.41	.37	.34
1983-05-01	.....	I	.58	.45	.41	.37	.34
1990-01-01	.....	F	1.17	.90	.83	.74	.69
1990-01-05	FT01XA01	F	1.17	.90	.83	.74	.69
1992-05-01	.....	I	.58	.45	.41	.37	.34
1994-01-01	.....	J	.58	.45	.41	.37	.34
1994-02-01	.....	J	.58	.45	.41	.37	.34
1995-01-01	.....	J	.58	.45	.41	.37	.34
2012-01-05	FT01XA02	F	2.07	1.59	1.47	1.30	1.22
2012-01-01	.....	F	2.07	1.59	1.47	1.30	1.22
2045-01/02-05‡	SE21XE01/2	C	.61	.47	.43	.38	.36
2045-01/02-01‡	.....	C	.61	.47	.43	.38	.36
2255-01/03-05‡	SE22XE01/3	K	.61	.47	.43	.38	.36
2255-01/03-03‡	.....	K	.74	.57	.53	.47	.44
2384-02-01	.....	L	.88	.68	.62	.55	.52
2432-01/02-01‡	.....	L	.75	.58	.53	.47	.44
3648-01/02-01‡	.....	M	.61	.47	.43	.38	.36
3650-01/02-01‡	.....	M	.61	.47	.43	.38	.36
4810-01-0516	.....	B	.44	.34	.31	.28	.26
4814-01-0516†	SE20(0/9)D01	N	.50	.39	.36	.32	.30
4815-01-0516	.....	N	.50	.39	.36	.32	.30
4820-01-0516†	SE20(0/9)D02	N	.57	.44	.40	.36	.34
4826-01-0516	.....	N	.50	.39	.36	.32	.30
4827-01-0516	.....	N	$0.50	$0.39	$0.36	$0.32	$0.30
4838-01-0516†	SE19(0/9)E01	O	.50	.39	.36	.32	.30
4862-01-0516	.....	P	.56	.43	.40	.35	.33
4863-01-0516	.....	P	.56	.43	.40	.35	.33
4870-01-0516	.....	H	.41	.32	.29	.26	.24
4872-01-0516	.....	O	.44	.34	.31	.28	.26
4878-01-0516	.....	O	.44	.34	.31	.28	.26
4884-01-0516	.....	Q	.44	.34	.31	.28	.26
4894-01-0516†	SE18(0/9)E01	H	.41	.32	.29	.26	.24
4895-01-0516†	SE18(0/9)E02	H	.44	.34	.31	.28	.26

*Suffix **-05** (e.g., 1502-01-**05**19) indicates electro-solder plating; **-01**, silver plating; **-03**, gold plating. †Suffix indicates standard color: **16**, blue for diallyl units; **19**, white for Teflon units. MIL-T-55155 dash numbers (**0/9**) indicate range of colors available. Colors other than standard may be made to order in min. of 500 unit quantities: for diallyl, add **$0.01** ea.; for Teflon, add **$0.02** ea. To order nonstandard colors, replace **19** or **16** final endings of Cambion No. with: **-11**, brown; **-12**, red; **-13**, orange; **-14**, yellow; **-15**, green; **-17**, violet; **-18**, gray. ‡Dash nos. (e.g., 1942-**01**-05) indicate varying stud lengths available; specify with order. §Min. std. pkg. is 50 pcs. •Reg. DuPont T.M.

TEFLON• PRESS-MOUNT INSULATED TERMINALS

Easy mounting: Press into hole for permanent, rigid installation.

Cambion Number*	MIL-T-55155 Number	Fig.	Net Each, Lots of§ 10-99	100-499	500-999	1000-2499
4015-01-0519	.....	R	$0.33	$0.23	$0.21	$0.19
4025-01/03-0519‡	.....	R	.30	.21	.19	.17
4026-01/03-0519‡	.....	R	.33	.23	.21	.19
4027-01/03-0519‡	.....	R	.33	.23	.21	.19
4029-01-0519†	SE08(0/9)B01	S	.28	.19	.18	.16
4033-01/02-0519†	.....	T	.33	.23	.21	.19
4034-01/03-0519‡	.....	T	.33	.23	.21	.19
4051-01-0519†	SE07(0/9)B01	R	.33	.23	.21	.19
4078-01-0519	.....	R	.36	.25	.23	.21
4115-01-0519	.....	R	.43	.30	.27	.25
4122-01-0519	.....	U	.65	.46	.41	.38
4132-01-0519	.....	U	.65	.46	.41	.38
4140-01-0519†	SE07(0/9)B02	R	.28	.19	.18	.16
4152-01-0519†	FT05(0/9)B01	S	.36	.25	.23	.21
4167-01-0519†	FT06(0/9)B01	V	.33	.23	.21	.19
4168-01-0519†	FT05(0/9)B02	S	.33	.23	.21	.19
4176-01-0519†	FT03(0/9)B02	W	.33	.23	.21	.19
4182-01/03-0519‡	.....	X	.33	.23	.21	.19
4185-01-0519†	FT04(0/9)B01	X	.33	.23	.21	.19
4188-01-0519†	FT03(0/9)B01	W	.28	.19	.18	.16
4193-01-0519†	FT05(0/9)B03	S	.28	.19	.18	.16
4194-01-0519†	FT06(0/9)B02	V	.33	.23	.21	.19
4197-01-0519†	FT04(0/9)B02	X	.33	.23	.21	.19
4263-01-0519	.....	Y	.53	.37	.34	.31
4267-01-0519	.....	Z	.65	.46	.41	.38
4281-01-0519†	FT03(0/9)B03	W	.33	.23	.21	.19
4410-01-0319	.....	W	.39	.27	.25	.23

HANDLES

Cambion Number	Fig.	Metal	Mtg. Ctrs., In.	Ht., In.	Net Each, Lots 10-99	100-499
1075-01-02	A	Brass*	4.562	1	$2.52	$2.21
1220-01-02	A	Brass*	1.25	1	2.41	2.11
1220-02-02	A	Brass*	2.0	1	2.52	2.21
1220-03-02	A	Brass*	3.0	1	2.63	2.30
1250-01-02	A	Brass*	2.0	1.312	2.11	1.85
1250-02-02	A	Brass*	3.0	1.312	2.27	1.98
1258-01-02	B	Brass*	.875	.520	1.07	.94
1264-01-02	A	Brass*	3.0	1.312	2.27	1.98
1270-01-14	A	Alum.†	4.0	1.875	2.63	2.30
1278-01-14	C	Alum.†	2.0	1.500	1.88	1.64
1278-02-14	C	Alum.†	4.0	1.500	2.16	1.89
1280-03-02	A	Brass*	4.0	1.50	2.63	2.30
1290-02-14	A	Alum.†	3.0	1.50	1.68	1.47
1290-03-14	A	Brass†	4.0	1.50	1.97	1.73
1900-01-02	D	Brass*	4.0	1.85	5.85	5.10
1965-01-02	A	Brass*	6.437	1.75	2.63	2.30
2062-01-02	D	Brass*	4.0	1.85	5.95	5.20
2111-01-02	B	Brass*	3.0	1.281	3.55	3.10
2111-02-02	B	Brass*	4.562	1.50	4.00	3.50
2111-03-02	B	Brass*	6.438	1.75	4.45	3.90
2111-04-02	B	Brass*	9.0	1.75	4.90	4.30
2385-01-14	B	Alum.†	3.0	1.281	2.66	2.33
2385-02-14	B	Alum.†	4.562	1.50	2.88	2.52
2385-03-14	B	Alum.†	6.438	1.75	3.15	2.77
2720-01-22	D	‡	4.0	1.459	8.55	7.50

*Nickel finish; for black oxide, order **-12** (prices on request). †Black anodize; for semi-frost anodize at same price, order **-18**. ‡Stainless steel.

WRITE FOR FREE CAMBION CATALOG FOR COMPLETE LISTING OF ALL CAMBION PRODUCTS

ALL-SET TERMINAL BOARDS (FIG. E)

With terminals firmly mounted. Boards scribed into five sections. Each section has 10 terminals and 4 mounting holes in two rows except Nos. **1401-** which have only 5 terminals and two mounting holes in a single row. **Materials** are: **FBE,** cotton-fabric phenolic MIL-P-15035B; **GEE,** epoxy glass-cloth, MIL-P-18177B; **NPG,** nylon-fabric phenolic MIL-P-15047B. Min. order two.

Cambion Number	Mat.	Size, Inches Th. x Width	Net Each, Lots of 1-9	10-99	100-499
1330-25-01-02	GEE	1/16 x 1 1/8	$ 7.65	$5.50	$4.80
1401-35-01-01	FBE	3/32 x 1/2	3.20	2.30	2.02
1401-35-01-02	GEE	3/32 x 1/2	5.00	3.60	3.15
1402-35-01-01	FBE	3/32 x 2	7.05	5.10	4.45
1402-35-01-02	GEE	3/32 x 2	11.60	8.35	7.30
1402-35-01-03	NPG	3/32 x 2	8.40	6.05	5.30
1402-45-01-01	FBE	1/8 x 2	7.05	5.10	4.45
1402-45-01-02	GEE	1/8 x 2	14.60	10.50	9.20
1402-45-01-03	NPG	1/8 x 2	8.40	6.05	5.30
1403-35-01-01	FBE	3/32 x 2 1/2	7.45	5.35	4.70
1403-45-01-01	FBE	1/8 x 2 1/2	7.45	5.35	4.70
1404-35-01-01	FBE	3/32 x 3	7.70	5.55	4.85
1404-45-01-01	FBE	1/8 x 3	7.70	5.55	4.85
1405-35-01-01	FBE	3/32 x 1 1/16	6.50	4.70	4.10
1405-25-01-01	FBE	1/16 x 1 1/16	6.50	4.70	4.10
1405-25-01-02	GEE	1/16 x 1 1/16	10.10	7.25	6.35
1406-35-01-01	FBE	3/32 x 1 1/2	6.75	4.85	4.25
1406-45-01-01	FBE	1/8 x 1 1/2	6.75	4.85	4.25

FERRULES

Cambion Number	Metal	For Handle	Net Each, Lots of 10-99	100-499	500-999
1211-01*	Brass	1280 Series	$0.23	$0.21	$0.20
1212-01†	Alum.	1290 Series	.47	.42	.40
1952-01*	Brass	1220 Series	.25	.22	.21
1953-01†	Alum.	1230 Series	.47	.42	.40
1954-01*	Brass	1075, 1965, 1250, 1252, 1254	.25	.22	.21
1988-01*	Brass		.34	.30	.28
1989-01†	Alum.	1270, 71 Series	.47	.42	.40

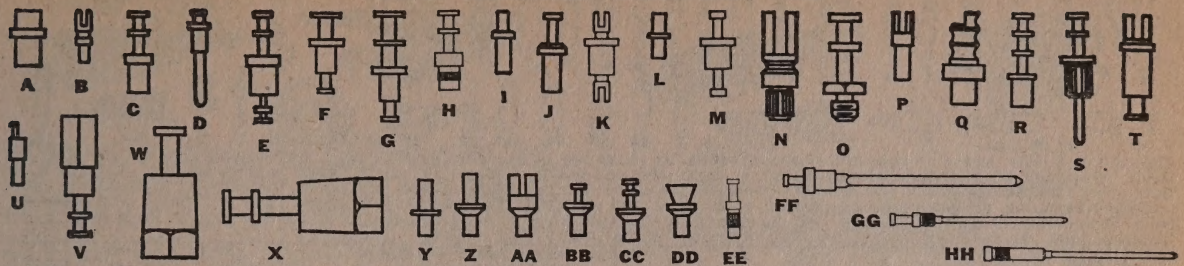
*Add suffix **-02** for nickel finish; **-12** for black oxide. †Add suffix **-14** for black anodize; **-18** for semi-frost anodize.

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

Solder Terminals, Wire-Wrap† Pins and Swaging Tools

SOLDER TERMINALS, WIRE-WRAP† PINS

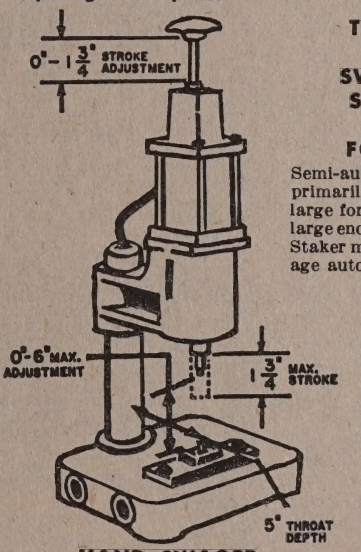


CAMBION offers a full line of all styles and sizes of standard solder terminals: Single and double turret, slotted, castellated, forked and others. The most popular types are listed. Prices shown are for the following standard platings: Plating code suffix **-01**, silver; **-04**, electro-tin; **-05**, electro-solder; **-01-05**, both silver and electro-solder (prices of other platings available on request). Order by CAMBION Type No. with correct dash number for board thickness desired, followed by plating code suffix.

Dash No. Suffix	Board Thickness	Dash No. Suffix	Board Thickness	Dash No. Suffix	Board Thickness
-11	1/64"	-3	3/32"	-6	1/4"
-1	1/32"	-4	1/8"		
-2	1/16"	-5	5/16"		

Cambion Type Number	Plating Code Suffix	Fig.	Mtg. Dia., In.	Description	Net per 1000, Lots 1000-4999	5000-9999	10M-24999
1015-2/4	-04	A	.053	Taper recep.	$63.80	$59.70	$52.20
1018-1/2	-01	B	.047	Thru hole	36.30	33.90	29.70
1019-1/3	-01	B	.047	Thru hole	40.30	37.70	32.90
1025-2	-01	B	.112	Slotted	126.10	117.90	103.20
1026-1/4	-01	C	.090	Turret	29.00	27.10	23.80
1031-2	-01	D	.072	Turret	57.70	53.90	47.20
1032-1/2	-01	D	.062	Turret	36.30	33.90	29.70
1035-2/3	-01	E	.125	Feed thru	49.20	46.00	40.30
1041-2/3	-01	F	.090	Turret	41.90	39.20	34.30
1042-2/3	-01	G	.090	Turret	53.00	49.50	43.30
1043-2/4	-01	E	.090	Turret	53.00	49.50	43.30
1092-1	-05	H	.099	Knurled tur., self-piercing	29.50	27.60	24.10
1131-2	-04	I	.060	Pin	39.00	36.50	31.90
1132-2/3	-04	I	.060	Pin	39.00	36.50	31.90
1136-2	-04	I	.060	Pin	52.40	49.00	42.90
1245-2/3	-01	J	.112	Turret	40.00	37.40	32.70
1384-1/4	-05	K	.116	Dbl. slot ends thru-hole	94.00	87.90	76.90
1457-1/4	-01	J	.078	Turret	25.70	24.00	21.00
1459-2	-05	L	.039	PC eyelet	34.30	32.00	28.00
1460-2	-05	L	.046	thru hole	34.30	32.00	28.00
1461-2	-05	L	.050		34.30	32.00	28.00
1462-2	-05	L	.059		34.30	32.00	28.00
1463-1/2	-01	M	.116	Domed Turret	35.50	33.20	29.00
1464-2/4	-05	M	.116	Tur. MIL-T-55155, SE13-XC04, 5, 6	34.90	32.60	28.50
1548-1/5	-01	C	.112	Turret	36.10	33.80	29.50
1558-1/5	-01	C	.090	Turret	26.30	24.60	21.50
1578-2/4	-01	N	.150	Knurled	69.10	64.60	56.50
1579-2/4	-01	G	.202	Feed thru	76.80	71.90	62.90
1582-2	-01	O	4-40	Round base	75.50	70.60	61.70
1597-1/5	-01	C	.090	Turret	29.00	27.10	23.80
1604-2	-01	J	.062	Turret	30.90	28.90	25.30
1724-1/4	-01	C	.112	Turret	40.80	38.20	33.40
1783-4	-01	N	.135	Knurled	109.40	102.30	89.50
1784-2/4	-01	N	.112	Knurled	62.50	58.50	51.20
1785-1/4	-01	P	.062	Forked	34.50	32.30	28.20
1797-1/4	-01	J	.110	Turret	39.20	36.60	32.10
1798-2	-01	C	.135	Turret	58.10	54.30	47.50
1941-2	-01	P	.071	Thru hole	35.20	32.90	28.80
1969-1/5	-01	P	.112	Thru hole	50.50	47.20	41.30
1979-2/4	-01	Q	.112	Half slot	58.70	54.90	48.00
2000-1/4	-01	G	.090	Feed thru	38.80	36.30	31.80
2004-1/4	-01	E	.090	Feed thru	38.10	35.60	31.20
2027-1/4	-01	J	.071	Thru hole	34.50	32.30	28.20
2034-1/4	-01	C	.090	Turret	40.70	38.00	33.30
2040-1/4	-01	E	.072	Turret	41.50	38.80	34.00
2041-1/3	-01	J	.072	Turret	26.30	24.60	21.50
2042-1/2	-01	F	.072	Turret	28.40	26.60	23.20
2043-1/4	-01	C	.072	Turret	27.20	25.40	22.20
2044-1/4	-01	G	.072	Turret	30.00	28.00	24.50
2051-1/2	-01	O	4-40	Hex base	84.30	78.80	69.00
2080-1/4	-01	R	.090	Turret	36.00	33.70	29.50
2081-1/4	-01	S	.120	Knurled	53.20	49.80	43.50
2084-2/4	-01	R	.112	Turret	68.20	63.80	55.80
2085-1/4	-01	J	.047	Turret	22.60	21.10	18.50
2086-2/3	-01	T	.122	Thru hole	66.50	62.10	54.40
2089-1/4	-01	B	.047	Thru hole	43.80	41.00	35.80
2100-1/3	-01	J	.062	Thru hole	34.50	32.30	28.20
2113-4	-04	C	.053	.061 top	68.30	63.90	55.90
2114-3	-04	C	.053	taper re-	87.40	81.70	71.50
2115-2/3	-04	F	.053	ceptacle	113.70	106.30	93.10
2141-2/4	-01	F	.116	Thru hole	70.40	65.80	57.60
2154-1	-01	U	.047	Half turret	71.70	67.00	58.70
2186-2/4	-04	J	.053	Taper recep.	84.70	79.20	69.30
2187-1/2	-05	B	.032	Slotted	40.70	38.00	33.30
2345-3	-01	V	.125	Term.-spacer	111.70	104.40	91.40
2380-1	-05	W	4-40	Tapped mt.	147.10	137.50	120.30
2381-1	-05	X	4-40	Tapped mt.	145.10	135.60	118.70
2750-2/4	-05	Y	.060	PC pin	$34.90	$32.60	$28.50
2751-2/4	-05	Z	.060	PC pin	34.90	32.60	28.50
2752-2/4	-05	AA	.060	PC thru hole	51.70	48.30	42.30
2753-2/3	-05	BB	.060	PC turret	34.90	32.60	28.50
2754-1/4	-05	CC	.060	PC turret	34.90	32.60	28.50
2755-2/3	-05	DD	.060	PC thru hole	34.90	32.60	28.50
2926-2	-05	AA	.060	PC flared	87.10	81.40	71.30
3653-1/3	-01	C	.062	Turret	28.60	26.70	23.40
3748-2	-04	FF	.090	.045 sq. swage mt.†	104.60	97.80	85.60
3848-1	-03*	GG	.056	.025 sq.	159.80	149.40	130.70
3848-1	-04	GG	.056	feed-thru†	113.10	105.80	92.50
3854-1	-03*	HH	.058	.025 sq.	164.70	154.00	134.80
3854-1	-04	HH	.058	press mt.†	117.40	109.80	96.10
3866-1	-03*	GG	.058		133.50	124.80	109.20
7336-1/4	-05	BB	.060	PC flared; red	34.70	32.40	28.40
7337-1/4	-05	CC	.060	lead brass/	35.60	33.30	29.10
7338-1/4	-05	AA	.060	ASTMB-140	56.90	53.20	46.60

*Gold plating. †Wire-Wrap (Reg. Gardner-Denver TM). ‡Knurled mt. Additional quantities available on request. **Minimum standard package is 100 pieces.**



HAND SWAGER

Designed for quick, uniform swaging of solder terminals on terminal boards. Adjustable to a wide range of terminal board thicknesses. Swaging in place as far as 1 1/8" from board edge. Less tooling.

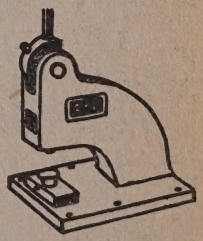
Cambion Type 3802-1—2 1/2" throat.
Net Each.....**$65.50**

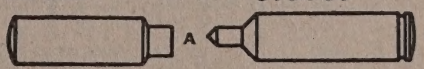
Cambion Type 3803-1—5" throat.
Net Each.....**$104.50**

TYPE 3804-7 SOLENOID SWAGER WITH SWEEPGUARD AND FOOT SWITCH

Semi-automatic staker designed primarily for requirements too large for hand swaging, yet not large enough to require a Hopper Staker machine. A variable voltage autotransformer of at least 5 ampere size, 50–60 Hz, 115 volts AC, required but not furnished or included in price. Size, 25" H. (approximate) x 10" square base.

Cambion Type 3804-7 Solenoid Swager with Sweepguard and Foot Switch—
Net Each..**$764.50**





SWAGING TOOLS

ANVILS (FIG. A)			PUNCHES (FIG. B)		
Cambion Number	Cambion Number	Net Each	Cambion Number	Cambion Number	Net Each
6401	6419	$10.00	6601	6618	$10.00
6402	6420	10.00	6604	6619	10.00
6404	6430	10.00	6606	6629	10.00
6412	6447	10.00	6611	6654	10.00
6418	.....	10.00	6617	6657	10.00

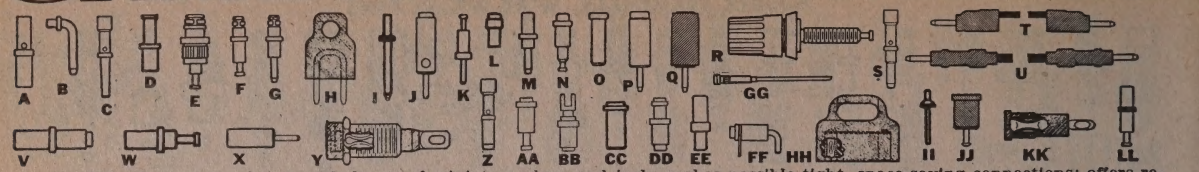
Cambion No. 6098 Adapter—For converting to hand set use.
Net Each.....**$10.00**

SEND FOR COMPLETE CAMBION CATALOG FOR FULL DATA ON ALL CAMBION PRODUCTS

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

MINIATURE PLUG AND JACK CONNECTORS



CAMBION'S wide variety of sizes and shapes of miniature plugs and jacks makes possible tight, space-saving connections; offers reliable "pluggability" for individual components or assemblies and provides unique PC board design possibilities with patching to or from boards. Positive grip, with low contact resistance after many repeated insertions and extractions. Insulated or noninsulated types—units for swaging, dip-soldering, press mount or threaded stud mounting. **To Order:** Use Cambion Type No. (1521); add Dash No. from "Recommended Board Thickness" column to indicate board thickness or patch cord length, as the case may be. Final suffix shown indicates finish: **03**, Gold; **04**, Electro-Tin; **05**, Electro-solder; **08**, Bright Alloy plating.

Cambion Type Number	Fig.	Pin Dia.	Description	Recommended Board Thickness per Dash Number					Net Each, Lots of			
				1/32	1/16	3/32	1/8	3/16	1-9	10-99	100-499	500-999*
0016-1-03	A	.062	Jack for patch cord use; MS-3190 crimp barrel, size 16							$ 77.90♦	$ 72.90‡	$ 63.80‡
1521-1/3-03	B	.040	Pin-plug	-1	-2	-3				129.70♦	121.20‡	106.10‡
1781-1-03	C	.061	Taper pin							136.00♦	127.20‡	111.30‡
2186-1/6-04	D	.061	Taper pin	-1	-2	-3	-4	-5•		84.70♦	79.20‡	69.30‡
2265-1/4-03	E	.080	Jack-term.		-1	-2	-3	-4		.68	.52	.48
2378-1/5-03	F	.045	Jack-term.	-1	-2	-3	-4	-5		.68	.52	.48
2378-1/5-08	F	.045	Jack	-1	-2	-3	-4	-5		.47	.36	.33
2650-1/5-03	G	.045	Plug-jack	-1	-2	-3	-4	-5		.79	.61	.56
2871-1-03†	H	.040	Shorting plug; pins on .200″ centers							.47	.36	.33
2871-2-03†	H	.040	Shorting plug; pins on .250″ centers							.47	.36	.33
2970-1/3-03	I	.040	Pin	-1	-2	-3				69.50♦	64.90‡	56.80‡
2971-1/3-03	I	.040	Pin	-1	-2	-3				58.60♦	54.80‡	47.90‡
3078-1-03	J	.025	Plug-jack	-1	-2	-3	-4			.47	.36	.33
3202-1/3-03	K	.025	Pin	-1	-2	-3				57.60♦	53.90‡	47.10‡
3220-1/4-05	I	.045	Pin	-1	-2	-3	-4			35.20♦	32.90‡	28.80‡
3230-1-03	L	.025	Jack for .031″ to .062″ boards							.23	.18	.16
3231-1/3-03	I	.025	Pin	-1	-2	-3				84.00♦	78.60‡	68.70‡
3232-1/3-03	I	.040	Pin	-1	-2	-3				80.50♦	75.20‡	65.80‡
3233-1/3-03	I	.040	Pin	-1	-2	-3				67.80♦	63.40‡	55.40‡
3263-1/4-03	M	.025	Plug-jack	-1	-2	-3	-4			.66	.51	.47
3266-1/4-03	N	.016/.020	Jack-term.	-1	-2	-3	-4			.66	.51	.47
3268-1-03	O	.016/.020	Jack for .031″ to .156″ boards							.23	.18	.16
3278-1-03	P	.040/.080	Plug-jack adapter							.37	.28	.26
3279-1-03	Q	.040/.080	Insulated 3278							.64	.49	.45
3284-1-03*	R	.040	Insulated binding post with insulated jack							.81	.62	.58
3285-1-03*	R	.080	Insulated binding post with insulated jack							.98	.75	.70
3286-1-03	CC	.040	Jack same as 3388, but with thru-hole							.23	.18	.16
3293-1-03	L	.025	Jack same as 3230, but with thru-hole							.23	.18	.16
3299-1/3-03	S	.080	Crimp-barrel plug; pin lgth.: -1 (.200″) -2 (⅜″) -3 (½″)							169.60♦	158.50‡	138.80‡
3300-1/3-03†	T	.040	Patch cord	-1 (2″)	-2 (4″)	-3 (6″)				1.49	1.27	1.12
3300-4/5-03†	T	.040	Patch cord				-4 (8″)	-5 (12″)		1.58	1.35	1.18
3301-1-03†	T	.040	Patch cord—"Piggy-back assembly"							.64	.49	.45
3306-2/3-03†	U	.040	Patch cord		-2 (4″)	-3 (6″)				.94	.81	.71
3306-4/5-03†	U	.040	Patch cord				-4 (8″)	-5 (12″)		1.07	.91	.80
3308-1-03	O	.040	Pin—I. D. for wire							146.10♦	136.70‡	119.60‡
3309-1/4-03	V	.025/.040	Jack-jack		-1	-2	-3	-4		.68	.52	.48
3310-1/5-03	M	.040	Plug-jack	-1	-2	-3	-4	-5		.66	.51	.47
3320-1/5-03	W	.040	Jack-term.	-1	-2	-3	-4	-5		.66	.51	.47
3324-1/5-03	W	.062	Jack-term.	-1	-2	-3	-4	-5		.66	.51	.47
3327-1-03	X	.025	Plug-jack adapter—.025 pin/.040 jack dia.							.37	.28	.26
3358-1-03*	Y	.080	Nylon-insulated jack (MS16108-1C thru -11C)							.59	.45	.42
3359-1-0319	Y	.080	Teflon#-insulated jack (MS16108-12C)							.59	.45	.42
3367-1-03	Z	.040	Jack for patch cord usage							.56	.43	.40
3368-1-03	S	.062	Pin-crimp barrel plug for patch cord use							158.10♦	147.80‡	129.30‡
3375-2/5-03	AA	.025	Rivet-type jack-ter			-2	-3	▪		.66	.51	.47
3378-1-03	Z	.040	Jack for patch cord usage with 3367 jack							.66	.51	.47
3379-2/5-03	BB	.040	Jack-term.		-2	-3	-4	-5		.71	.55	.50
3381-1-03*	Y	.080	Nylon-insulated jack (MS16108-1A thru 11A)							.59	.45	.42
3382-1-0319	Y	.080	Teflon-insulated jack (MS16108-12A)							.64	.49	.45
3388-1-03	CC	.040	Jack for .031″ to .156″ boards							.23	.18	.16
3389-2/3-03†	T	.025	Patch cord		-2 (4″)	-3 (6″)				1.49	1.27	1.12
3389-4-03†	T	.025	Patch cord				-4 (8″)			1.58	1.35	1.18
3390-1-03	S	.025	Plug-jack patch cord assembly with 3078 plug-jack							.53	.41	.38
3391-2/3-03†	T	.080	Patch cord		-2 (4″)	-3 (6″)			$3.60	3.00	2.59	2.27
3391-4/5-03†	T	.080	Patch cord				-4 (8″)	-5 (12″)	3.60	3.00	2.59	2.27
3392-1/4-03	DD	.040	Jack-jack		-1	-2	-3	-4		.71	.55	.50
3393-1/4-03	I	.025	Pin	-1	-2	-3	-4			51.40♦	48.00‡	42.00‡
3394-1/4-03	EE	.025	Jack	-1	-2	-3	-4			.56	.43	.40
3398-1-03	CC	.080	Jack for .031″ to .250″ boards							.37	.28	.26
3422-1-03	FF	.040	Side mount jack for boards to .078″ max.							.68	.52	.48
3703-1-03	CC	.025	Jack for .031″ to .094″ boards							.28	.22	.20
3704-1-03	CC	.040	Jack for .031″ to .156″ boards							.28	.22	.20
3705-1/3-03†	T	.040	Molded patch cord	-1 (2″)	-2 (4″)	-3 (6″)				1.65	1.41	1.23
3705-4/5-03†	T	.040	Molded patch cord				-4 (8″)	-5 (12″)		1.77	1.52	1.33
3745-1-03	GG	.022 rd.	Jack/Wire Wrap^ term. for .062″ to .188″ boards							.51	.39	.36
3750-1-03	O	.022 flat	Jack for .031″ to .188″ boards							.28	.22	.20
3771-1-03†	H	.040	Shorting plug; pins on .400″ centers							.53	.41	.38
3771-2-03†	H	.040	Shorting plug; pins on .500″ centers							.53	.41	.38
3772-1/2-03	O	.016/.020	Jack for .031″ to .188″ boards; -2 has thru-hole							.28	.22	.20
3775-1-03†	HH	.040	Shorting jack; jack pins on .200″ centers							1.05	.81	.75
3776-1-03†	HH	.040	Shorting jack; jack pins on .400″ centers							1.16	.89	.82
3844-1-03	GG	.018 flat	Jack/Wire Wrap term. for .062″ to .188″ boards							.51	.39	.36
3888-1-03	FF	.080	Side mount jack for .125″ max. board thickness							1.20	.92	.85
3889-1-03	II	.025	Pin for 1/32″ board thickness							65.10♦	60.90‡	53.30‡
4351-1-03§	JJ	.045	Teflon-insulated jack for .031″ to .094″ boards							1.02	.79	.72
4352-1-03§	JJ	.040	Teflon-insulated jack for .031″ to .094″ boards							.56	.43	.40
4353-1-03§	JJ	.040	Teflon-insulated jack for .031″ to .094″ boards							.56	.43	.40
4354-1-03§	KK	.080	Teflon-insulated jack for .031″ to .125″ boards							.71	.55	.50
4355-1-03§	KK	.080	Teflon insulated jack for .031″ to .125″ boards							.40	.31	.28
7004-1-03	O	.030	Jack for .031″ to .188″ boards							.23	.18	.16
7005-1/5-03	LL	.030	Jack	-1	-2	-3	-4	-5		.66	.51	.47

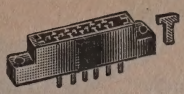
*Available with black (suffix **10**) or red (suffix **12**) insulation. †Available with black (suffix **10**), red (suffix **12**) or blue (suffix **16**) wire insulation. §Available with black (suffix **10**), red (suffix **12**) or white (suffix **19**) insulation. #Reg. DuPont TM. •Use **-6** for ¼″ bd. thickness. "Order **-4** for 5/32″ bd. thickness, **-5** for 7/32″ bd. thickness. ^Reg. Gardner-Denver TM. ♦Per 1000, lots of 1000-4999. ‡Per 1000, lots of 5000-9999. ‡Per 1000, lots of 10,000-24,999.

***Larger Quantity Prices on Request. SEND FOR CAMBION CATALOG FOR DATA ON ALL PRODUCTS.**

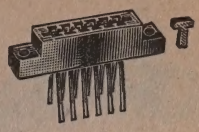
CINCH PC Edge Connectors

50-6A-20
50-6A-20M

50-12A-30
50-12A-30M



50-12B-10
50-12B-10M



50-12B-20

Printed circuit connectors designed for minimum printed circuit card wear, low insertion force and positive contact with the printed circuit board. Units with solder tab or dip solder terminations utilize bifurcated contacts permitting two flexing surfaces instead of one for positive contact. Bifurcated contacts are especially recommended for added contact reliability where vibration or printed circuit board irregularities would otherwise cause trouble. Types meeting MIL spec MIL-C-21097B are also available as indicated. **Termination:** Bifurcated contacts with conventional 0.115" x 0.050" slot solder tabs. **Mounting:** Available with 0.128" dia. holes for standard mounting, molded-in bushings or floating bushings. Diameter of 0.142" also available on request. **Insulator Material:** Green glass-filled diallyl phthalate type SDG-F per MIL-M-14. **Contacts:** Phosphor bronze with 30 micro-inches gold finish; beryllium copper with 50 micro-inches gold to meet MIL-C-21097B as specified. **Polarizing Keys:** Ordered separately as follows: No. 50-PK-1 for in-contact polarization made of diallyl phthalate; No. 50-PK-2 for between-contact polarization made of glass epoxy. **Voltage Rating:** 830 VAC rms at sea level. **Current:** Rated 5.0 amps. **Contact Resistance:** 0.005 ohm at rated current. **Insulation Resistance:** 5,000 megohms. **Temperature Cycling:** 5 continuous cycles per Method 107B, Test Condition B. Beryllium copper, −65° C to +125° C; phosphor bronze, −65° C to +105° C.

COMMERCIAL TYPES

SINGLE READOUT WITHOUT BUSHINGS

Conventional solder tails.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-6A-20	6	$1.47	$1.17	$1.00	$0.78	$0.74	$0.70
50-10A-20	10	1.96	1.58	1.30	1.06	1.02	.95
50-12A-20	12	2.23	1.86	1.48	1.18	1.12	1.07
50-15A-20	15	2.60	2.07	1.74	1.40	1.30	1.23
50-18A-20	18	2.97	1.97	1.97	1.58	1.51	1.44
50-22A-20	22	3.48	2.78	2.31	1.84	1.76	1.67
50-25A-20	25	4.16	3.31	2.76	2.22	2.11	1.97
Dip solder tails.							
50-6B-10	6	$1.47	$1.17	$1.01	$0.78	$0.74	$0.70
50-10B-10	10	1.96	1.58	1.30	1.06	1.02	.95
50-15B-10	15	2.60	2.07	1.74	1.40	1.30	1.23
50-18B-10	18	2.97	2.37	1.97	1.58	1.51	1.44
50-22B-10	22	3.48	2.78	2.31	1.84	1.76	1.67
50-25B-10	25	4.16	3.31	2.76	2.22	2.11	1.97

DOUBLE READOUT WITHOUT BUSHINGS

Conventional solder tails.

50-12A-30	6	$1.47	$1.17	$1.00	$0 78	$0.74	$0.70
50-20A-30	10	1.96	1.58	1.30	1.06	1.02	.95
50-24A-30	12	2.23	1.86	1.48	1.18	1.12	1.07
50-30A-30	15	2.60	2.07	1.74	1.40	1.30	1.23
50-36A-30	18	2.97	2.37	1.97	1.58	1.52	1.44
50-44A-30	22	3.48	2.78	2.31	1.84	1.76	1.67
50-50A-30	25	4.14	3.31	2.76	2.22	2.11	1.97
Dip solder tails.							
50-12B-10	6	$1.47	$1.17	$1.00	$0.78	$0.74	$0.70
50-20B-10	10	1.96	1.58	1.30	1.06	1.02	.95
50-24B-10	12	2.23	1.86	1.48	1.18	1.12	1.07
50-30B-10	15	2.60	2.07	1.74	1.40	1.30	1.23
50-36B-10	18	2.97	2.37	1.97	1.58	1.52	1.44
50-44B-10	22	3.48	2.78	2.31	1.84	1.76	1.67
50-50B-10	25	4.14	3.31	2.76	2.22	2.11	1.97
Wrap post tails.							
50-12B-20	6	$3.56	$2.87	$2.38	$1.90	$1.82	—
50-20B-20	10	4.47	3.57	2.98	2.38	2.27	—
50-24B-20	12	4.94	3.94	3.29	2.63	2.50	—
50-30B-20	15	5.60	4.47	3.74	2.98	2.85	—
50-36B-20	18	6.27	5.01	4.19	3.35	3.17	—
50-44B-20	22	7.16	5.73	4.78	3.82	3.63	—

MIL-C-21097B PC CONNECTORS

SINGLE READOUT

With conventional wiring tails, no bushings.

Cinch Number 50-	MIL No. M21097/	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
6A-20M	1-001	6	$1.88	$1.51	$1.24	$1.01	$0.97	$0.91
10A-20M	1-037	10	2.64	2.11	1.76	1.42	1.33	1.25
15A-20M	1-073	15	3.56	2.86	2.38	1.90	1.82	1.72
18A-20M	1-109	18	4.16	3.34	2.76	2.21	2.11	1.97
22A-20M	1-145	22	4.90	3.92	3.26	2.60	2.49	2.35
With conventional wiring tails, floating bushings.								
6A-20MB	1-004	6	$4.20	$3.35	$2.79	$2.24	$2.12	$1.84
10A-20MB	1-040	10	4.87	3.90	3.26	2.60	2.47	2.18
15A-20MB	1-076	15	5.74	4.00	3.84	3.08	2.91	2.59
18A-20MB	1-112	18	6.23	5.00	4.18	3.33	3.16	2.81
22A-20MB	1-148	22	6.91	5.52	4.61	3.69	3.50	3.16
With conventional wiring tails, molded-in bushings.								
6A-20MFB	1-007	6	$2.49	$2.00	$1.66	$1.31	$1.24	$1.19
10A-20MFB	1-043	10	3.23	2.59	2.16	1.72	1.64	1.55
15A-20MFB	1-079	15	4.18	3.34	2.78	2.23	2.12	2.01
18A-20MFB	1-115	18	4.75	3.80	3.16	2.53	2.39	2.27
22A-20MFB	1-151	22	5.48	4.39	3.66	2.93	2.79	2.64

DOUBLE READOUT

With conventional wiring tails, no bushings.

Cinch Number 50-	MIL No. M21097/	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
12A-30M	1-019	6	$1.88	$1.51	$1.24	$1.01	$0.97	$0.91
20A-30M	1-055	10	2.64	2.11	1.76	1.42	1.33	1.25
30A-30M	1-091	15	3.56	2.86	2.38	1.90	1.82	1.72
36A-30M	1-127	18	4.16	3.31	2.76	2.22	2.11	1.97
44A-30M	1-163	22	4.90	3.92	3.26	2.61	2.49	2.35
With conventional wiring tails, molded-in bushings.								
12A-30MB	1-022	6	$4.20	$3.35	$2.79	$2.24	$2.12	$1.84
20A-30MB	1-058	10	4.87	3.90	3.26	2.60	2.47	2.18
30A-30MB	1-094	15	5.74	4.60	3.84	3.08	2.91	2.59
36A-30MB	1-130	18	6.23	5.00	4.18	3.33	3.16	2.81
44A-30MB	1-166	22	6.91	5.52	4.61	3.69	3.50	3.16
With conventional wiring tails, floating bushings.								
12A-30MFB	1-025	6	$2.49	$2.00	$1.66	$1.31	$1.24	$1.19
20A-30MFB	1-061	10	3.23	2.59	2.16	1.72	1.64	1.55
30A-30MFB	1-097	15	4.18	3.34	2.78	2.23	2.12	2.01
36A-30MFB	1-133	18	4.75	3.80	3.16	2.53	2.39	2.27
44A-30MFB	1-169	22	6.91	5.52	4.61	3.69	3.50	3.16
With dip solder tails, no bushings.								
12B-10M	1-028	6	$1.88	$1.51	$1.24	$1.01	$0.97	$0.91
20B-10M	1-064	10	2.64	2.11	1.76	1.42	1.33	1.25
30B-10M	1-100	15	3.56	2.86	2.38	1.50	1.82	1.72
36B-10M	1-136	18	4.16	3.31	2.76	2.22	2.11	1.97
44B-10M	1-172	22	4.90	3.92	3.26	2.61	2.49	2.35

POLARIZING KEYS

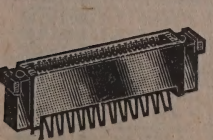
Cinch No. 50-	Polarization	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
PK-1	In-contact	$0.091	$0.074	$0.062	$0.049	$0.047	$0.043
PK-2	Between contact	.076	.061	.061	.044	.040	.037

CARD GUIDE

For use with edge connectors with 0.156" spacing or with 0.100" centers, 1/16" boards.

PK-3	$0.091	$0.074	$0.062	$0.043	$0.041	$0.038

TYKON MINIATURE EDGE CONNECTORS



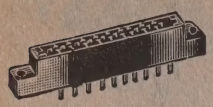
High density edge connectors with .050" centers for use with double-sided .062" printed circuit boards. Conventional wiring tails. Insulator is diallyl phthalate, type SDG-F per MIL-M-14F. Contacts are beryllium copper with .00003" gold plate per MIL-G-45204 Type II. Carbon steel mounting clip for use in semi-flush printed circuit mounting, and cellulose acetate polarizing key available as separate items.

Cinch Number 50-	Cont. Pos.	No. of Cont.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
12A-40	6	12	$4.12	$3.28	$2.74	$2.19	$2.08	$1.97
20A-40	10	20	5.07	4.05	3.38	2.71	2.56	2.44
30A-40	15	30	6.27	5.03	4.19	3.34	3.18	3.02
40A-40	20	40	7.25	5.97	4.98	3.98	3.79	3.59
50A-40	25	50	8.66	6.93	5.76	4.63	4.38	4.16
MC	Mounting Clip		.279	.203	.177	.166	.152	.131
PK	Polarizing Key		.226	.179	.167	.154	.143	.131

★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

CINCH PC BOARD EDGE CONNECTORS

PC BOARD EDGE CONNECTORS



Extended Tail Dip Solder

Card Extender

Wire Wrap Terminal

Three series of 0.156″ centers PC edge connectors have special purpose terminals which make them particularly well-suited in special applications.

Extended Tail Dip Solder Terminal Series: These connectors have 15/64″ terminations that are long enough to pass through two or three 1/16″ PC boards. The connector can be used to connect two PC boards at right angles to third or to provide the equivalent of a double-sided or multilayer board by making a sandwich of two or three boards. Can also be used where a component is to be soldered to the underside of the board at the connector. Connectors designed for minimum card wear, low insertion force and incorporate bifurcated phosphor bronze contacts with 30 micro-inches gold plating for positive electric contact even under high vibration conditions or printed circuit board irregularities. Insulator is glass-filled diallyl phthalate type SDG-F per MIL-M-14. Connectors are available in both single and double read-out.

Card Extender Series: Permit end-to-end connection of PC boards. The solder tabs terminals are formed so that there is 0.050″ spacing between rows. Insertion of a standard 1/16″ board between the rows allows soldering of terminals to the printed circuit conductor paths to form a permanent, vibration-proof attachment. Designed for minimum card wear, low insertion force and incorporate beryllium copper contacts with 30 micro-inches gold plating for positive electric contact. Insulator is glass-filled diallyl phthalate type SDG-F per MIL-M-14.

Wire Wrap* Terminal Series: Economical, high quality printed circuit board terminals have cantilever contact construction which provides a simple dependable design capable of handling 1/16″ thick single or double sided boards. Contacts are preloaded against an insulator stop to provide gap uniformity and assure rapid build-up of force to the PC board. Construction combines minimum insertion force with maximum contact pressure. Comb contact formation permits simultaneous insertion of contacts for consistency of assembly and increased speed. Wire Wrap tails are available in lengths of .550″, .750″ and 1.051″ to accommodate Wire Wrap equipment and popular clip-on connections. Contact is automatically inserted, locked in position and is preloaded in one operation. Bifurcated phosphor bronze contacts with 30 micro-inches gold plating are designed so that contact pressure is independent of depth of PC board insertion. Selective gold plating permits concentration of gold in area of contact at substantially reduced cost. Wire Wrap termination of 0.031″ x 0.062″, between contact polarizing. Insulator is of general purpose impact phenolic and black color. **Models 50-30W-10 and 50-44W-10** have .045″ square tail Wire Wrap terminals on .156″ spacing, double read-out for 1/16″ printed circuit boards, and have .128″ diameter mounting holes. **Model 50-80W-20** has .025″ square tail Wire Wrap terminals on .125″ centers; .156″ diameter mounting holes. **Polarizing Key 50-PK-2** is used for these connectors and must be ordered separately.

*Registered Gardner-Denver trademark.

EXTENDED TAIL DIP SOLDER TERMINAL SERIES

Single read-out connectors.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-6S-10	6	$1.47	$1.17	$1.01	$0.78	$0.74	$0.70
50-10S-10	10	1.96	1.58	1.30	1.06	1.02	.95
50-12S-10	12	2.23	1.86	1.48	1.18	1.12	1.07
50-15S-10	15	2.60	2.07	1.74	1.40	1.30	1.23
50-18S-10	18	2.97	2.37	1.97	1.58	1.51	1.44
50-22S-10	22	3.48	2.78	2.31	1.84	1.76	1.67
50-25S-10	25	4.16	3.31	2.76	2.22	2.11	1.97
Double read-out connectors.							
50-12S-20	6	$1.47	$1.17	$1.00	$0.78	$0.74	$0.70
50-20S-20	10	1.96	1.58	1.30	1.06	1.02	.95
50-24S-20	12	2.23	1.86	1.48	1.18	1.12	1.07
50-30S-20	15	2.60	2.07	1.74	1.40	1.30	1.23
50-36S-20	18	2.97	2.37	1.97	1.58	1.51	1.44
50-44S-20	22	3.48	2.78	2.31	1.84	1.76	1.67
50-50S-20	25	4.87	3.90	3.26	2.60	2.47	2.18

CARD EXTENDER SERIES

Double read-out connectors.

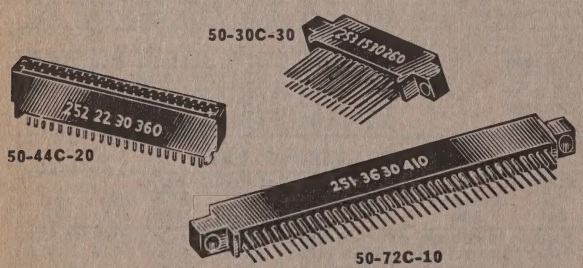
Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-12S-30	6	$1.86	$1.50	$1.22	$1.01	$0.93	$0.88
50-20S-30	10	2.21	1.82	1.54	1.42	1.23	1.18
50-24S-30	12	2.59	2.07	1.73	1.40	1.30	1.23
50-30S-30	15	3.23	2.59	2.16	1.72	1.63	1.55
50-36S-30	18	3.57	2.89	2.42	1.95	1.86	1.79
50-44S-30	22	4.23	3.39	2.85	2.28	2.18	2.06
50-50S-30	25	4.98	4.00	3.36	2.71	2.58	2.28

WIRE WRAP TERMINAL SERIES

Double read-out connectors.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-30W-10	15/30	$5.89	$4.71	$3.93	$3.14	$2.98	$2.81
50-44W-10	22/44	8.00	6.41	5.22	4.27	4.05	3.84
50-44E-10	22/44	4.49	3.61	2.99	2.39	2.27	2.16
50-44F-10	22/44	4.49	3.61	2.99	2.39	2.27	2.16
50-44G-10	22/44	4.49	3.61	2.99	2.39	2.27	2.16
50-80W-20	40/80	8.69	6.95	5.80	4.63	4.41	4.18

PRECISION DOUBLE READ-OUT EDGE CONNECTORS WITH 0.100 INCH CENTERS, 1/16″ BOARDS



Unique bifurcated cantilever contact construction provides simple, dependable design capable of handling 1/16″ thick printed circuit boards. Contacts pre-loaded against an insulator stop to provide gap uniformity and assure rapid build-up of force to the PC board. Contacts are grade A phosphor bronze, gold plated with 30 micro-inches of gold over 50 micro-inches of nickel in contact area and 10 micro-inches minimum gold on remainder of contact, per MIL-G-45204, Type II. Insulation, glass-filled diallyl phthalate, Type SDG-F per MIL-M-14. **Polarizing Key: No. 50-PK-3,** ordered separately. **Card Guide: No. 50-GP-1,** must also be ordered separately.

Conventional solder tails.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-30C-10	15	$3.72	$2.97	$2.49	$1.97	$1.87	$1.79
50-44C-10	22	4.39	3.50	2.92	2.33	2.21	2.11
50-72C-10	36	5.71	4.57	3.81	3.05	2.88	2.74
50-80C-10	40	6.03	4.82	4.01	3.20	3.03	2.89
50-86C-10	43	6.41	5.11	4.26	3.40	3.21	3.08
50-100C-10	50	7.04	5.62	4.67	3.75	3.55	3.36
Dip solder tails.							
50-30C-20	15	$3.72	$2.97	$2.49	$1.97	$1.87	$1.79
50-44C-20	22	4.39	3.50	2.92	2.33	2.21	2.11
50-72C-20	36	5.71	4.57	3.81	3.05	2.88	2.74
50-80C-20	40	6.03	4.82	4.01	3.20	3.03	2.89
50-86C-20	43	6.41	5.11	4.26	3.40	3.21	3.08
50-100C-20	50	7.04	5.62	4.67	3.75	3.55	3.36
Wire Wrap tails.							
50-30C-30	15	$3.77	$3.03	$2.54	$2.04	$1.93	$1.84
50-44C-30	22	4.44	3.55	2.97	2.39	2.26	2.16
50-72C-30	36	5.76	4.62	3.86	3.11	2.93	2.79
50-80C-30	40	6.08	4.88	4.06	3.27	3.10	2.94
50-86C-30	43	6.46	5.17	4.32	3.47	3.28	3.13
50-100C-30	50	7.16	5.72	4.78	3.82	3.61	3.43

POLARIZING KEYS

Cinch Number	Std. Pkg.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-PK-3	500	$0.091	$0.074	$0.062	$0.043	$0.041	$0.038
50-PK-2	500	.076	.061	.061	.044	.040	.037

CARD GUIDE

Cinch Number	Std. Pkg.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-GP-1	10	$0.372	$0.300	$0.254	$0.207	$0.196	$0.188

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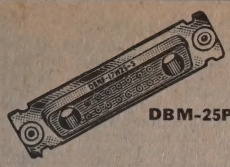
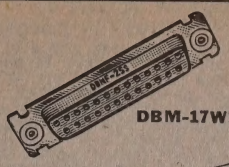
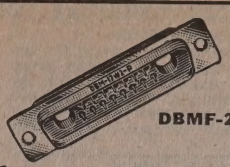
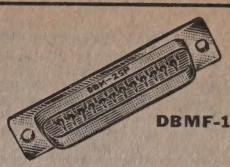
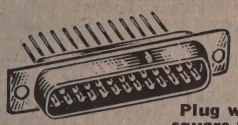
CINCH D-SUBMINIATURE CONNECTORS*

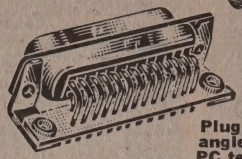

DBM-25P

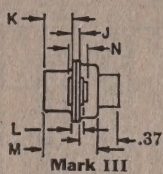

DBM-17W2P


DBMF-25S

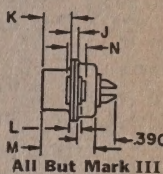

DBMF-17W2S


Plug with 0.25" square wire-wrap terminations

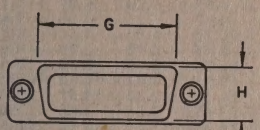

Plug with right angle dip solder PC terminations

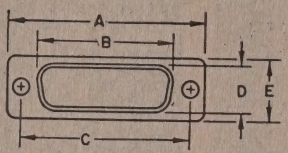


Mark III



All But Mark III





Five basic shell sizes cover a full array of contact configurations for most rack and panel applications. Solder pot contacts rated 5 amps (1.5 amps, MIL) are standard; crimp-on contacts available. Cadmium-plated steel shell has yellow chromate coating. Insulators glass filled diallyl phthalate per MIL-M-14F, Type SDG in monobloc construction; or, two-piece nylon insulator. Pins and sockets are #20 AWG; coaxial contacts and high voltage contacts available. **Voltage:** 1700 VAC rms, 60 Hz at sea level, average flashover; 1250 volts, test. D-H series, 1000 VAC rms, 60 Hz at sea level, flashover; 750 volts, test. **Insulation:** 5,000 megohms, MIL-STD-202A, Method 302. **Contact Voltage Drop:** 2.67 mV max. per amp, MIL-C-8384B, Para. 4.6.4. **Contact Separation Force:** 1–8 oz. **Environment:** MIL-STD-202A, Meth. 106, moisture; Meth. 204, vibration; Meth. 202A, shock; Meth. 101A, Cond. B, 50-hr. salt spray; Meth. 301, high potential; Meth. 102A, Cond. D, temp. cycling. All referenced in MIL-C-8384B.

Cinch No. by Shell Size	Dimension Key, Inches											
	A	B‡	C†	D‡	E	G	H	J	K	L	M	N
DE*-9P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120
DE*-9S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120
DA*-15P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DA*-15S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DB*-25P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DB*-25S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DC*-37P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DC*-37S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DD*-50P	2.635	2.127	2.406	.484	.605	2.178	.534	.039	.231	.060	.426	.129
DD*-50S	2.635	2.062	2.406	.420	.605	2.178	.534	.030	.243	.045	.429	.120

*Refer to ordering code for insulator type designation. †.120" dia. holes, standard units; .086" dia., float mount units. ‡Measured as outside dimensions at bottom of the draw.

HOW TO ORDER

D	E	SM	F	-9	P
(A)	(B)	(C)	(D)	(E)	(F)

(A) **Prefix:** Indicates Cinch Series **D.**

(B) **Shell Size:** Five basic sizes determined by insert arrangement. See table of dimensions for sizes: **E, A, B, C** and **D.**

(C) **Insulator Type:** If **none,** insulator is two-piece nylon; **M,** monobloc diallyl phthalate with solder pot contacts; **MA,** same as M, but with snap-in, removable, crimp, rear release assembly; **SM,** same as M, but crimp, snap-in contacts.

(D) **Float Mount:** Float-mounting shell type available for all standard connectors. Has stainless steel washers and rivets.

(E) **Insert Arrangement:** Choice of **9, 15, 20, 37** or **50** contacts, standard. Combination layouts available with coaxial cavities in Mark I Golden "D" series (see listing). High voltage cavities also available; details on request.

(F) **Contact Type: P,** Pin; **S,** Socket.

MARK III ROYAL "D" CONNECTOR

Snap-in, removable crimp contacts with rear release assembly. Contacts not interchangeable but units will mate and are interchangeable with all other D Series. Insulator diallyl phthalate, glass fiber filled, per MIL-P-19833, Type GDK-30F, royal purple color, monobloc construction. **Contacts:** Pin, leaded copper, gold plate over silver plate; socket, copper alloy, gold plate over silver plate with stainless steel sleeves.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DEMA-9P	9	Pin	$ 6.92	$ 6.23	$ 5.20	$ 4.14	$ 3.81
DEMAF-9P	9	Pin	7.71	6.94	5.79	4.62	4.24
DEMA-9S	9	Socket	7.13	6.42	5.33	4.28	3.92
DEMAF-9S	9	Socket	7.92	7.13	5.95	4.75	4.35
DAMA-15P	15	Pin	8.81	7.93	6.59	5.29	4.84
DAMAF-15P	15	Pin	9.61	8.64	7.20	5.76	5.28
DAMA-15S	15	Socket	9.92	8.93	7.43	5.96	5.46
DAMAF-15S	15	Socket	10.71	9.65	8.03	6.43	5.88
DBMA-25P	25	Pin	11.83	10.66	8.88	7.10	6.51
DBMAF-25P	25	Pin	12.71	11.46	9.53	7.63	6.98
DBMA-25S	25	Socket	14.43	12.98	10.82	8.65	7.93
DBMAF-25S	25	Socket	15.30	13.77	11.49	9.18	8.42
DCMA-37P	37	Pin	15.46	13.91	11.58	9.28	8.51
DCMAF-37P	37	Pin	16.34	14.68	12.25	9.81	8.98
DCMA-37S	37	Socket	19.78	17.81	14.85	11.87	10.87
DCMAF-37S	37	Socket	20.66	18.61	15.50	12.38	11.37
DDMA-50P	50	Pin	19.33	17.39	14.49	11.58	10.63
DDMAF-50P	50	Pin	20.20	18.18	15.16	12.13	11.11
DDMA-50S	50	Socket	25.55	22.98	19.16	15.33	14.05
DDMAF-50S	50	Socket	26.42	23.78	19.81	15.86	14.52

MARK III MIL-C-24308 VERSIONS

Cinch Number	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
M24308/2-1	DEMA-9S	$ 7.57	$ 6.63	$ 5.55	$ 4.49	$ 4.13
M24308/2-2	DAMA-15S	10.44	9.29	7.79	6.32	5.82
M24308/2-3	DBMA-25S	15.08	13.58	11.42	9.25	8.53
M24308/2-4	DCMA-37S	21.00	18.70	15.73	12.75	11.78
M24308/2-5	DDMA-50S	26.91	24.18	20.36	16.54	15.25
M24308/4-1	DEMA-9P	7.25	6.47	5.44	4.38	4.05
M24308/4-2	DAMA-15P	9.21	8.24	6.92	5.61	5.15
M24308/4-3	DBMA-25P	12.34	11.09	9.31	7.53	6.94
M24308/4-4	DCMA-37P	16.39	14.63	12.30	9.99	9.22
M24308/4-5	DDMA-50P	20.42	18.27	15.36	12.47	11.50

*Manufactured by agreement with ITT Cannon Electric Co.

ORIGINAL "D" CONNECTORS

Two-piece construction utilizes Zytel® casting material; keystone shape assures proper polarization. Friction coupling is standard; locking accessories and floating mount shells also available. **Temp. Range:** −65° F to +250° F. **Contacts:** Pin, gold plate over silver-plated brass; socket, gold plate over silver-plated phosphor bronze.

® DuPont trademark.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DE-9P	9	Pin	$1.43	$1.28	$1.09	$0.85	$0.79
DE-9S	9	Socket	2.06	1.84	1.53	1.22	1.12
DEF-9P	9	Pin	2.26	2.06	1.71	1.38	1.24
DEF-9S	9	Socket	2.90	2.59	2.17	1.74	1.58
DA-15P	15	Pin	2.02	1.82	1.52	1.21	1.11
DA-15S	15	Socket	2.98	2.69	2.24	1.79	1.64
DAF-15P	15	Pin	2.88	2.58	2.15	1.71	1.56
DAF-15S	15	Socket	3.83	3.44	2.89	2.31	2.12
DB-25P	25	Pin	2.93	2.73	2.24	1.75	1.60
DB-25S	25	Socket	4.58	4.12	3.43	2.75	2.52
DBF-25P	25	Pin	3.85	3.47	2.91	2.32	2.13
DBF-25S	25	Socket	5.50	4.97	4.13	3.32	3.02
DC-37P	37	Pin	3.98	3.58	2.97	2.39	2.19
DC-37S	37	Socket	6.49	5.84	4.87	3.89	3.58
DCF-37P	37	Pin	4.91	4.42	3.69	2.94	2.71
DCF-37S	37	Socket	7.42	6.69	5.57	4.46	4.10
DD-50P	50	Pin	5.19	4.66	3.87	3.12	2.86
DD-50S	50	Socket	8.56	7.70	6.43	5.11	4.70
DDF-50P	50	Pin	6.10	5.49	4.59	3.68	3.36
DDF-50S	50	Socket	9.48	8.54	7.13	5.69	5.22

ORIGINAL "D" CONNECTORS .025" X .025" WIRE WRAP TAILS, ⅜" LONG

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DE-9P-F179	9	Pin	$ 2.32	$1.88	$1.64	$1.44	$1.38
DE-9S-F179	9	Socket	4.22	3.36	2.80	2.24	2.06
DA-15P-F179	15	Pin	3.01	2.39	2.11	1.88	1.77
DA-15S-F179	15	Socket	5.78	4.60	3.83	3.06	2.81
DB-25P-F179	25	Pin	4.74	3.77	3.27	2.73	2.59
DB-25S-F179	25	Socket	6.72	5.40	4.73	4.22	3.96
DC-37P-F179	37	Pin	6.46	5.11	4.53	3.91	3.69
DC-37S-F179	37	Socket	8.95	7.17	6.83	6.48	6.14
DD-50P-F179	50	Pin	7.67	6.11	5.38	4.84	4.58
DD-50S-F179	50	Socket	11.79	9.42	8.96	8.44	7.88

DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

D-SUBMINIATURE CONNECTORS* (CONT'D)

MARK I GOLDEN "D" CONNECTORS

Monobloc insulator design of glass-filled diallyl phthalate (FS-5) per MIL-M-14F, Type SGD. Keystone cornered shell provides proper polarization. Friction coupling is standard; locking accessories are available. Floating mount shells also available. **Temperature Range:** −65° F to +300° F. **Contacts:** Pin contacts, gold plate over silver-plated brass; female contacts, gold plate over silver-plated phosphor bronze.

Cinch Number	Contacts No.	Contacts Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
DEM-9P	9	Pin	$ 2.84	$ 2.55	$ 2.13	$ 1.70	$1.54
DEM-9S	9	Socket	3.91	3.51	2.94	2.36	2.16
DEMF-9P	9	Pin	3.68	3.31	2.74	2.21	2.01
DEMF-9S	9	Socket	4.75	4.28	3.57	2.86	2.63
DAM-15P	15	Pin	4.08	3.68	3.05	2.45	2.24
DAM-15S	15	Socket	5.80	5.22	4.35	3.47	3.19
DAMF-15P	15	Pin	4.92	4.43	3.70	2.95	2.72
DAMF-15S	15	Socket	6.64	5.97	4.98	3.98	3.65
DBM-25P	25	Pin	6.02	5.41	4.53	3.61	3.32
DBM-25S	25	Socket	8.93	8.02	6.71	5.34	4.90
DBMF-25P	25	Pin	6.94	6.25	5.21	4.17	3.82
DBMF-25S	25	Socket	9.86	8.87	7.38	5.90	5.41
DCM-37P	37	Pin	8.40	7.55	6.29	6.29	5.04
DCM-37S	37	Socket	12.75	11.46	9.53	7.62	6.99
DCMF-37P	37	Pin	9.33	8.40	6.99	5.61	5.12
DCMF-37S	37	Socket	13.65	12.27	10.23	8.18	7.51
DDM-50P	50	Pin	10.87	9.80	8.16	6.54	5.99
DDM-50S	50	Socket	16.67	15.00	12.52	10.01	9.17
DDMF-50P	50	Pin	11.82	10.65	8.86	7.09	6.51
DDMF-50S	50	Socket	17.61	15.84	13.23	10.56	9.67

MARK I GOLDEN "D" CONNECTORS—RIGHT ANGLE PC CONTACTS

Pins are 0.040" nominal diameter and extend 0.093" below the 90° bracket. A terminal alignment strip, held on by means of the brackets, is supplied with each connector.

DEM-9PA	9	Pin	$ 8.34	$ 8.20	$ 7.47	$ 6.72	$ 5.97
DAM-15PA	15	Pin	11.84	10.76	8.97	8.16	7.48
DBM-25PA	25	Pin	17.73	16.12	14.65	13.18	11.81
DCM-37PA	37	Pin	19.51	17.72	16.56	15.36	14.95

MARK I GOLDEN "D" COAXIAL CONNECTORS SHELL ASSEMBLIES

Insulator is diallyl phthalate (FS-5) per MIL-M-14F, Type SGD. Includes 5-amp contacts assembled, but not coaxial contacts (ordered separately, see below). **Suffix: S,** socket; **P,** pin plug.

Cinch Number	Number of Cavities	Number of Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
DEM-5W1P	1	4	$2.44	$2.18	$1.83	$1.46	$1.35
DEM-5W1S	1	4	2.80	2.51	2.10	1.68	1.53
DAM-3W3P	3	None	1.88	1.69	1.41	1.13	1.03
DAM-3W3S	3	None	1.88	1.69	1.41	1.13	1.03
DAMF-3W3S	3	None	2.72	2.46	2.06	1.64	1.50
DAM-11W1P	1	10	3.51	3.17	2.63	2.12	1.93
DAM-11W1S	1	10	4.41	3.98	3.32	2.64	2.44
DAMF-11W1P	1	10	4.36	3.92	3.29	2.61	2.40
DAMF-11W1S	1	10	5.26	4.73	3.94	3.15	2.90
DAM-7W2P	2	5	2.67	2.43	2.02	1.61	1.48
DAM-7W2S	2	5	3.13	2.84	2.36	1.88	1.73
DAMF-7W2S	2	5	3.98	3.58	2.97	2.39	2.18
DBM-13W3P	3	10	3.74	3.36	2.81	2.23	2.07
DBM-13W3S	3	10	4.62	4.17	3.47	2.79	2.55
DBM-9W4P	4	5	2.91	2.60	2.17	1.74	1.60
DBM-9W4S	4	5	3.35	3.01	2.52	2.01	1.84
DBMF-9W4P	4	5	3.83	3.44	2.89	2.30	2.12
DBMF-9W4S	4	5	4.28	3.85	3.21	2.57	2.36
DBM-17W2P	2	15	4.57	4.11	3.41	2.73	2.51
DBM-17W2S	2	15	5.90	5.31	4.43	3.55	3.27
DBMF-17W2P	2	15	5.49	4.96	4.13	3.31	3.02
DBMF-17W2S	2	15	6.84	6.16	5.11	4.11	3.76
DBM-21W1P	1	20	5.40	4.85	4.06	3.23	2.96
DBM-21W1S	1	20	7.18	6.47	5.40	4.31	3.95
DCM-13W6P	6	7	3.50	3.15	2.63	2.10	1.93
DCM-13W6S	6	7	4.13	3.72	3.09	2.48	2.26

COAXIAL CONTACTS

Use with above coaxial shell assemblies. **Prefix: 53740**—Straight solder terminal plug; **53741**—Right-angle solder terminal plug; **53742**—Straight solder terminal receptacle; **53743**—Right-angle solder terminal receptacle; **53744**—High voltage plug; **53745**—High voltage receptacle.

Cinch Number	For Cable RG-	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
DM-53740-5000†	196/U	$2.03	$1.87	$1.69	$1.52	$1.37
DM-53740-5001	187, 188/U	2.01	1.85	1.74	1.50	1.35
DM-53740-5002	195/U	2.08	1.90	1.74	1.56	1.38
DM-53740-5008	196/U	2.03	1.87	1.69	1.52	1.37
DM-53741-5000	196/U	2.26	2.07	1.88	1.69	1.50
DM-53741-5001	187, 188/U	2.44	2.24	2.03	1.83	1.61
DM-53742-5000	196/U	2.14	1.94	1.77	1.59	1.43
DM-53742-5001	187, 188/U	2.03	1.87	1.69	1.52	1.37
DM-53742-5002	195/U	2.18	2.01	1.83	1.64	1.46
DM-53742-5004	58/U	2.99	2.69	2.47	2.24	2.02
DM-53743-5000	196/U	2.71	2.49	2.26	2.03	1.82
DM-53743-5001	187, 188/U	2.66	2.45	2.23	2.00	1.80
DM-53744-0000‡	#20 wire	1.44	1.31	1.19	1.08	.98
DM-53744-5000*	#20 wire	1.80	1.63	1.49	1.34	1.19
DM-53745-0000‡	#20 wire	1.27	1.18	1.07	.98	.84
DM-53745-5000*	#20 wire	2.01	1.85	1.74	1.56	1.40

*Right-angle. †Short type plug. ‡Straight.
*Manufactured by agreement with ITT Cannon Electric Co.

MARK II GOLDEN "D" CONNECTORS

Snap-in, crimp type contacts eliminate soldering; cut assembly and maintenance time. Monobloc insulator is diallyl phthalate, asbestos filled, (FS-6) per MIL-M-14F, Type MDG. Keystone shaped shells provide proper polarization. Friction coupling is standard; locking accessories are available. Floating mount shells also available. Not interchangeable with other "D" series. **Temperature Range:** −65° F to +300° F. **Contacts:** Gold plate over silver-plated, leaded copper. Contacts supplied, but unassembled.

Cinch Number	Contacts No.	Contacts Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
DESM-9P	9	Pin	$ 4.02	$ 3.77	$ 3.35	$ 2.99	$ 2.67
DESM-9S	9	Socket	4.74	4.35	3.96	3.57	3.17
DESMF-9P	9	Pin	4.83	4.53	3.98	3.50	3.13
DESMF-9S	9	Socket	5.55	5.08	4.57	4.06	3.61
DASM-15P	15	Pin	6.11	5.61	5.09	4.59	4.07
DASM-15S	15	Socket	7.42	6.79	6.20	5.57	4.96
DASMF-15P	15	Pin	6.94	6.34	5.72	5.08	4.53
DASMF-15S	15	Socket	8.24	7.55	6.80	6.07	5.40
DBSM-25P	25	Pin	9.29	8.12	7.38	6.25	5.61
DBSM-25S	25	Socket	11.20	10.28	9.35	7.60	6.75
DBSMF-25P	25	Pin	10.10	8.85	8.00	6.75	6.05
DBSMF-25S	25	Socket	12.01	11.03	9.96	8.12	7.19
DCSM-37P	37	Pin	10.79	9.89	9.04	8.12	7.19
DCSM-37S	37	Socket	15.40	14.13	12.85	10.01	10.08
DCSMF-37P	37	Pin	11.60	10.65	9.65	8.61	7.64
DCSMF-37S	37	Socket	16.22	14.88	13.46	11.50	10.53
DDSM-50P	50	Pin	16.70	15.27	13.69	10.75	9.86
DDSM-50S	50	Socket	20.78	19.05	17.33	14.35	13.03
DDSMF-50S	50	Socket	21.60	19.79	17.93	14.84	13.47

MARK II CONTACTS (D-SM)

Contact terminations in standard crimp contacts.

Cinch Number	Type	Std. Pkg.	Net Each, Lots of 100-4999	5000-24,999
031-0932-004	Pin	100	$0.252	$0.210
031-0931-006	Socket	100	.344	.284

MARK III CONTACTS (D-MA)

Contact terminations have standard crimp contacts, commercial and military types.

Cinch Number Commercial	Cinch Number Military	Type	Std. Pkg.	Net Each, Lots 100-4999	5000-24,999
330-5291-000	.....	Pin	100	$0.166	$0.142
031-1007-000	.....	Socket	100	.251	.212
.....	M-24308/11-1	Pin	100	.179	.153
.....	M-24308/10-1	Socket	100	.264	.223

"DATAPHONE" CONNECTORS AND HOODS

Insulators are diallyl phthalate (FS-4) per MIL-M-19833, Type GDI-30. Hoods gray melamine, fit plug or socket connector.

Cinch Number	Description	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
DA-19603-404	15-cont. sckt.	$ 7.29	$ 6.69	$6.13	$5.47	$4.87
DB-19604-433	25-cont. sckt.	11.42	10.45	9.50	8.56	7.60
DA-19603-403	15-pin plug	3.23	3.02	2.73	2.44	2.33
DB-19604-432	25-pin plug	4.46	4.17	3.74	3.30	3.15
DA-51225-1	15-size hood	1.63	1.46	1.17	1.07	.99
DB-51226-1	25-size hood	1.80	1.51	1.20	1.10	1.01

D-SUBMINIATURE CONNECTOR ACCESSORIES JUNCTION SHELLS

Cinch Number	Type & Size	Net Each, Lots of 1-9	10-49	50-99	100-249	250-49
DA-19678-1	Straight, A	$1.24	$1.13	$0.95	$0.76	$0.69
DB-19678-2	Straight, B	1.48	1.33	1.12	.88	.81
DC-19678-3	Straight, C	1.76	1.59	1.33	1.06	.98
DD-19678-4	Straight D	1.93	1.74	1.44	1.16	1.06
DA-19977-1	Rt.-angle, A	1.63	1.46	1.21	.98	.88
DB-19977-2	Rt.-angle, B	1.79	1.61	1.35	1.07	.99
DC-19977-3	Rt.-angle, C	1.89	1.70	1.42	1.13	1.03
DD-19977-4	Rt.-angle, D	2.06	1.84	1.53	1.22	1.12
DE-19977-5	Rt.-angle, E	2.08	1.87	1.56	1.23	1.13
DE-24657	Straight, E*	2.32	2.14	1.79	1.43	1.29
DA-24658	Straight, A*	2.29	2.12	1.75	1.40	1.32
DB-24659	Straight, B*	1.84	1.68	1.40	1.13	1.06
DC-24660	Straight, C*	1.92	1.75	1.45	1.17	1.09
DD-24661	Straight, D*	2.16	2.03	1.70	1.37	1.23

*Deep, straight clamp junction shell.

SCREW LOCK ASSEMBLIES

D-20418-2	Female, A–E	$0.48	$0.44	$0.39	$0.30	$0.28
D-20419-0	Male, A–C, E	.30	.27	.24	.20	.19
D-20420-0	Male, D	.45	.42	.34	.28	.26

CLEAR POLYPROPYLENE DUST COVERS

DA-, DB-, DC-, DD-, or DE-59-20-SKT	For sockets	$.203	$.177	$.152	$.125	$.114
DA-, DB-, DC-, DD-, or DE-60-20-PLG	For plugs	.203	.177	.152	.125	.114

SLIDING LOCK ASSEMBLIES

DE-51224-1	1.392" long	$1.00	$0.89	$0.76	$0.61	$0.53
DA-51220-1	1.720" long	.51	.48	.42	.34	.32
DB-51221-1	2.260" long	.51	.47	.41	.33	.30
DC-51222-1	2.908" long	.68	.64	.51	.43	.40
DD-51223-1	2.814" long	.84	.77	.65	.49	.47

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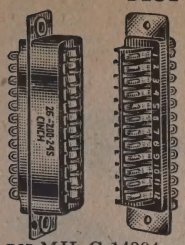
CINCH RACK, PANEL & HINGE CONNECTORS

BLUE RIBBON* CONNECTORS



Ideal and used universally in a wide variety of applications. Proven reliability combines with smooth, easy insertion action. Self-wiping and self-cleaning contacts available in linear arrays up to 32 per unit. Barrier-type polarization and interlocking mating of dielectric bodies gives easy alignment without visual aid. Ribbon contacts can't bend. Rectangular body for easy layout. Corrosion resistant, passivated stainless steel mounting plates are molded in. **Current:** 5 amps. **Voltage:** 800 VDC at sea level; 300 VDC at 70,000 ft. **Insulator:** Diallyl phthalate per MIL-M-14F, Type MDG. **Plug Contacts:** Gold per MIL-G-14204 over silver per QQ-S-365 on copper per ASTM-B-152, Type ETP. **Receptacle Contacts:** Gold per MIL-G-14204 over silver per QQ-S-365 on phosphor bronze per ASTM-B-103-51, MIL-B-892, Grade A. **Size:** (Other than shown in table below): Body ¾″ w. x ⅜″ d. below mtg. plate, socket; $^{25}/_{64}$″ d., plug. Mtg. plate ⅞″ wide. Plug mtg. holes .125″ dia., with ctrs. $^{11}/_{64}$″ from plate ends; socket, in bushing, .116″ dia. **Code:** Suffix indicates number of contacts (**-8, -16,** etc.); **S,** socket; **P,** plug.

Cinch Number 26-	Dimensions, In. Plate Lgth.	Body Lgth.	*Net Each, Lots of 1-9	10-49	50-99	100-249	250-999	1000-2499
4100-8P	$1\frac{23}{32}$	$1\frac{1}{32}$	$1.25	$1.06	$0.86	$0.77	$0.64	$0.58
4200-8S	$1\frac{23}{32}$	$1\frac{1}{32}$	2.07	1.74	1.43	1.26	1.04	.93
4100-16P	$2\frac{15}{32}$	$1\frac{25}{32}$	2.35	1.98	1.61	1.46	1.18	1.08
4200-16S	$2\frac{15}{32}$	$1\frac{25}{32}$	3.01	2.54	2.06	1.85	1.51	1.39
4100-24P	$3\frac{7}{32}$	$2\frac{1}{32}$	2.85	2.39	1.94	1.74	1.44	1.29
4200-24S	$3\frac{7}{32}$	$2\frac{1}{32}$	3.56	3.00	2.43	2.18	1.80	1.62
4100-32P	$3\frac{31}{32}$	$3\frac{9}{32}$	3.31	2.78	2.25	2.04	1.67	1.50
4200-32S	$3\frac{31}{32}$	$3\frac{9}{32}$	4.25	3.57	2.90	2.60	2.15	1.93

●DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

MICRO-RIBBON* CONNECTORS

Extremely small, ribbon-contact connectors suited for airborne and computer applications with high reliability. Shell type polarization; easily inserted or withdrawn without visual aid; self-wiping, self-cleaning contacts in units up to 50 per connector. Float-mounted receptacle prevents misalignment. **Current:** 5 amps. **Voltage:** 700 VDC at sea level; 200 VDC at 70,000 ft. **Insulator:** Diallyl phthalate per MIL-M-14F, Type MDG. **Contacts:** Gold plate per MIL-G-45204 over silver plate per QQ-S-365 on cadmium bronze, ASTM-B-105. **Shells:** Cadmium-plated brass (ASTM-B-36, Alloy 6) with clear chromate finish. 10500, 20500-6, -7 have additional insulator between opposite rows of contacts. Dimensions on request. Cable plugs with hoods, chassis-mounted sockets with spring latches.

Cinch No. 57-	Type	Contacts	*Net Each, Lots of 1-9	10-49	50-99	100-249	250-999	1000-2499
10140	R & P Plug	14	$2.16	$1.81	$1.47	$1.35	$1.09	$0.99
10240	R & P Plug	24	2.89	2.44	2.10	1.77	1.46	1.34
10360	R & P Plug	36	3.31	2.79	2.26	2.03	1.66	1.50
10500	R & P Plug	50	4.37	3.69	2.98	2.66	2.19	1.97
10500-6	R & P Plug	50	4.42	3.74	3.03	2.71	2.25	2.02
10500-7	R & P Plug	50	4.97	4.21	3.40	3.00	2.49	2.24
20140	R & P Sckt.	14	2.22	1.87	1.50	1.38	1.11	1.01
20240	R & P Sckt.	24	2.96	2.49	2.03	1.81	1.48	1.36
20360	R & P Sckt.	36	3.39	2.85	2.31	2.09	1.71	1.55
20500	R & P Sckt.	50	4.41	3.73	3.02	2.71	2.22	2.01
20500-6	R & P Sckt.	50	4.61	3.90	3.18	2.84	2.32	2.10
20500-7	R & P Sckt.	50	5.22	4.43	3.58	3.18	2.62	2.38
30140	Cable Plug	14	4.16	3.49	2.83	2.54	2.10	1.88
30240	Cable Plug	24	4.57	3.83	3.10	2.79	2.28	2.08
30360	Cable Plug	36	5.58	4.71	3.80	3.40	2.81	2.53
30500	Cable Plug	50	6.12	5.15	4.19	3.75	3.08	2.77
40140	Chassis Skt.	14	2.73	2.30	1.87	1.68	1.39	1.24
40240	Chassis Skt.	24	3.25	2.73	2.22	2.00	1.64	1.47
40360	Chassis Skt.	36	3.51	2.96	2.39	2.14	1.76	1.59
40500	Chassis Skt.	50	4.59	3.86	3.12	2.80	2.30	2.09

*Registered Bunker-Ramo trademark.

HINGE CONNECTORS

Plug and socket bodies showing contact arrangement.

No contact damage due to insertion and extraction. Maximum contact in minimum space; engaged with normal pressure. Simple locking device insures positive contact. Spring action contacts separate units after releasing the lock. Wiping contact action for clean contacts at all times. Castings are of black phenolic, type CFG. Contacts are of phosphor bronze, cadmium plated (.0001). Current rating is 4.5 amps. **Alternate Lock:** For more secure locking, order Alternate Lock No. 37AL separately. It has a special device to prevent accidental unlocking. **Caps:** Formed fiber liners, nickel-plated cable clamps. Designed to take the alternate lock when required. Black wrinkle finish.

PLUG WITH LOCK*

Cinch No.	Contacts	Mtg. Ctrs., In.	Overall Size, In.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
37-M20L	20	1.375	1.750	$4.39	$3.50	$2.93	$2.35	$2.22
37-M30L	30	1.812	2.187	5.19	4.12	3.47	2.78	2.66
37-M40L	40	2.250	2.625	5.98	4.78	3.97	3.19	3.05
37-M50L	50	2.687	3.062	6.75	5.40	4.50	3.62	3.43
37-M60L	60	3.125	3.500	7.52	6.01	5.03	4.02	3.83
37-M70L	70	3.562	3.937	8.31	6.64	5.55	4.44	4.23
37-M80L	80	4.000	4.375	9.10	7.25	6.05	4.88	4.63
37-M90L	90	4.438	4.812	9.89	7.91	6.60	5.28	5.03
37-M100L	100	4.875	5.250	10.66	8.54	7.12	5.70	5.42

*To order **Socket With Lock,** change letter **M** in Cinch No. to **F** (e.g., 37-F20L). Dimensions and prices are the same.
***LARGER QUANTITY PRICING AVAILABLE ON REQUEST**

PLUG WITHOUT LOCK*

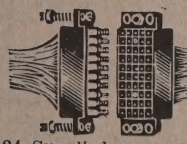
Cinch No.	Contacts	Mtg. Ctrs., In.	Overall Size, In.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
37-M20	20	1.375	1.750	$3.96	$3.15	$2.66	$2.10	$2.00
37-M30	30	1.812	2.187	4.71	3.77	3.15	2.53	2.40
37-M40	40	2.250	2.625	5.52	4.42	3.67	2.95	2.81
37-M50	50	2.687	3.062	6.30	5.04	4.20	3.36	3.19
37-M60	60	3.125	3.500	7.10	5.67	4.71	3.77	3.59
37-M70	70	3.562	3.937	7.88	6.30	5.23	4.20	3.98
37-M80	80	4.000	4.375	8.67	6.93	5.76	4.63	4.40
37-M90	90	4.438	4.812	9.42	7.54	6.30	5.04	4.80
37-M100	100	4.875	5.250	10.20	8.18	6.83	5.45	5.19

*To order **Socket Without Lock** change letter **M** in Cinch No. to **F** (e.g., 37-F20). Dimensions and prices are the same.
Cinch No. 37AL Alternate Lock—For above series.
Net Each, Lots of: 1-24 . . . . . **$0.90**; 25-49 . . . . . **$0.72**
Lots: 50-99 . . . **$0.59**; 100-249 . . . **$0.49**; 250-499* . . **.48**

CAPS FOR PLUGS OR SOCKETS

Cinch No.	For Casting with No. of Contacts	Hole Size, Inches	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
37-C20	20	¾	$6.10	$4.90	$4.09	$3.27	$3.12
37-C30	30	$13/16$ x 1	6.15	4.93	4.11	3.30	3.14
37-C40	40	$13/16$ x 1	6.24	4.97	4.14	3.33	3.18
37-C50	50	$13/16$ x 1	6.30	5.04	4.20	3.36	3.19
37-C60	60	$13/16$ x 1½	6.36	5.09	4.25	3.39	3.23
37-C70	70	$13/16$ x 1½	6.44	5.15	4.28	3.45	3.27
37-C80	80	$13/16$ x 1½	6.48	5.20	4.31	3.48	3.30
37-C90	90	$13/16$ x 1½	6.57	5.23	4.39	3.50	3.33
37-C100	100	$13/16$ x 1½	6.63	5.29	4.43	3.53	3.36

"MINI-JONES" CRIMP-ON, SNAP-IN CONNECTORS



Space saving connector provides contact density of 25 contacts per sq. inch. No tools required for inserting contacts. Pin and contact terminations accommodate either one AWG 18, 20, 22, or 24; or two AWG 22 or 24. Supplied unassembled. Tinned phosphor bronze contacts. Black phenolic insulators. Polarizing pins and lock nuts of cadmium plated brass. **Voltage:** 830 V rms, 1230 VDC. **Current:** 4.0 amperes. **Contact Resistance:** .0065 ohms, max. **Low Level Resistance:** Current flow at 0.1 μvolts; no variation at 6.5 mA and 16.25 mA. **Insulation Resistance:** 1000 megs. Standard or lock type.

STANDARD PLUG

Cinch No.	Contacts	Mtg. Ctrs., In.	Overall Size, In.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
MJP-19	19	1.288	1.600	$3.43	$2.73	$2.28	$1.82	$1.73
MJP-29	29	1.688	2.000	4.03	3.22	2.70	2.15	2.04
MJP-39	39	2.088	2.400	4.65	3.71	3.10	2.47	2.35
MJP-48	49	2.488	2.800	5.12	4.20	3.43	2.73	2.61
MJP-58	58	2.888	3.200	5.71	4.57	3.82	3.05	2.91
MJP-68	68	3.288	3.600	6.33	5.05	4.22	3.38	3.22

STANDARD SOCKET

Cinch No.	Contacts	Mtg. Ctrs., In.	Overall Size, In.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
MJS-19	19	1.288	1.600	$3.05	$2.45	$2.04	$1.64	$1.57
MJS-29	29	1.688	2.000	3.47	2.77	2.34	1.86	1.76
MJS-39	39	2.088	2.400	3.91	3.13	2.61	2.09	1.98
MJS-48	48	2.488	2.800	4.21	3.37	2.83	2.25	2.14
MJS-58	58	2.888	3.200	4.65	3.71	3.10	2.47	2.35
MJS-68	68	3.288	3.600	5.04	4.04	3.38	2.71	2.59

PLUG CONNECTOR WITH PROVISION FOR LOCK

MJP-2-19	19	1.288	1.600	$3.43	$2.73	$2.28	$1.82	$1.73
MJP-2-29	29	1.688	2.000	4.03	3.22	2.70	2.15	2.04
MJP-2-39	39	2.088	2.400	4.65	3.71	3.10	2.47	2.35
MJP-2-48	48	2.488	2.800	5.12	4.20	3.43	2.73	2.61
MJP-2-58	58	2.888	3.200	5.71	4.57	3.82	3.05	2.91
MJP-2-68	68	3.288	3.600	6.33	5.05	4.22	3.38	3.22

SOCKET CONNECTOR WITH PROVISION FOR LOCK

MJS-2-19	19	1.288	1.600	$4.51	$3.60	$3.01	$2.41	$2.29
MJS-2-29	29	1.688	2.000	4.93	3.94	3.29	2.63	2.49
MJS-2-39	39	2.088	2.400	5.35	4.28	3.57	2.88	2.72
MJS-2-48	48	2.488	2.800	5.66	4.53	3.78	3.02	2.89
MJS-2-58	58	2.888	3.200	6.10	4.88	4.05	3.25	3.10
MJS-2-68	68	3.288	3.600	6.49	5.23	4.36	3.47	3.29

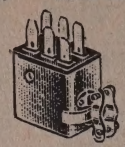
CINCH Plugs and Sockets

300 SERIES PLUGS AND SOCKETS from famous "Jones" line, the standard for the electrical and electronic industry for many years. Small size, with good separation between contacts, for medium-duty applications. Molded phenolic insulator; 2 to 33 cadmium-plated phosphor bronze contacts; for cap or panel mounting. Polarized so only common sizes will mate. "Knife-switch" type socket contacts engage both sides of flat plug contacts. Rated 730 V rms, 10 A max. Contact resistance, .016 ohms max. UL Standard #498 rated (all contacts simultaneously) 7.5 amps, 1875 watts for 2–12 contacts; 4.5 amps, 1125 watts, 15–33 contacts.

AB

CCT

CCT-L


CCE

DB

SB

PLUGS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
P-302-AB	2	$0.42	$0.32	$0.29	$0.25	$0.23
P-303-AB	3	.47	.35	.31	.27	.26
P-304-AB	4	.51	.42	.34	.29	.28
P-306-AB	6	.62	.51	.44	.33	.32
P-308-AB	8	.73	.57	.49	.41	.38
P-310-AB	10	.81	.63	.55	.45	.43
P-312-AB	12	.92	.74	.59	.49	.47
P-315-AB	15	1.22	.97	.81	.63	.60
P-318-AB	18	1.45	1.18	.97	.79	.75
P-321-AB	21	1.81	1.45	1.22	.97	.94
P-324-AB	24	2.19	1.75	1.46	1.19	1.12
P-327-AB	27	2.57	2.07	1.72	1.37	1.30
P-330-AB	30	2.95	2.35	1.96	1.59	1.48
P-333-AB	33	3.30	2.63	2.20	1.75	1.69

SOCKETS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
S-302-AB	2	$0.44	$0.34	$0.30	$0.26	$0.25
S-303-AB	3	.49	.41	.32	.28	.27
S-304-AB	4	.53	.44	.35	.30	.29
S-306-AB	6	.69	.53	.47	.35	.34
S-308-AB	8	.81	.64	.55	.45	.43
S-310-AB	10	.95	.76	.63	.51	.48
S-312-AB	12	1.12	.88	.76	.59	.56
S-315-AB	15	1.41	1.14	.95	.76	.73
S-318-AB	18	1.63	1.29	1.06	.87	.82
S-321-AB	21	1.99	1.62	1.32	1.04	1.01
S-324-AB	24	2.36	1.88	1.61	1.26	1.22
S-327-AB	27	2.74	2.19	1.83	1.46	1.39
S-330-AB	30	3.14	2.52	2.10	1.69	1.62
S-333-AB	33	3.51	2.80	2.34	1.86	1.78

PLUGS WITH CABLE CLAMPS/TOP

P-302-CCT	2	$0.82	$0.65	$0.55	$0.45	$0.43
P-303-CCT	3	.92	.74	.59	.49	.47
P-304-CCT	4	.96	.77	.63	.51	.49
P-306-CCT	6	1.06	.87	.74	.57	.55
P-308-CCT	8	1.19	.95	.80	.62	.59
P-310-CCT	10	1.29	1.02	.87	.72	.65
P-312-CCT	12	1.39	1.12	.95	.76	.72
P-315-CCT	15	1.85	1.48	1.26	.99	.96
P-318-CCT	18	2.17	1.73	1.45	1.18	1.08
P-321-CCT	21	2.58	2.08	1.73	1.38	1.31
P-324-CCT	24	3.03	2.42	2.04	1.64	1.53
P-327-CCT	27	3.47	2.76	2.31	1.85	1.75
P-330-CCT	30	3.90	3.11	2.60	2.09	1.98
P-333-CCT	33	4.32	3.45	2.88	2.31	2.19

SOCKETS WITH CABLE CLAMPS/TOP

S-302-CCT	2	$0.84	$0.70	$0.57	$0.47	$0.45
S-303-CCT	3	.94	.75	.60	.50	.48
S-304-CCT	4	.98	.80	.65	.52	.51
S-306-CCT	6	1.14	.92	.76	.59	.57
S-308-CCT	8	1.27	1.00	.84	.70	.63
S-310-CCT	10	1.43	1.16	.96	.77	.74
S-312-CCT	12	1.63	1.29	1.05	.86	.82
S-315-CCT	15	2.07	1.67	1.38	1.08	1.04
S-318-CCT	18	2.34	1.86	1.56	1.26	1.20
S-321-CCT	21	2.76	2.21	1.85	1.47	1.41
S-324-CCT	24	3.20	2.57	2.14	1.71	1.64
S-327-CCT	27	3.62	2.90	2.43	1.94	1.84
S-330-CCT	30	4.09	3.28	2.74	2.19	2.09
S-333-CCT	33	4.51	3.61	3.03	2.42	2.28

PLUGS WITH CABLE CLAMPS/TOP & LOCKS

P-302-CCT-L	2	$1.01	$0.82	$0.70	$0.55	$0.52
P-303-CCT-L	3	1.08	.88	.75	.58	.56
P-304-CCT-L	4	1.18	.94	.79	.60	.58
P-306-CCT-L	6	1.29	1.02	.86	.70	.65
P-308-CCT-L	8	1.37	1.08	.94	.75	.72
P-310-CCT-L	10	1.48	1.21	1.00	.81	.77
P-312-CCT-L	12	1.59	1.28	1.05	.86	.82
P-315-CCT-L	15	2.07	1.67	1.38	1.08	1.04
P-318-CCT-L	18	2.36	1.88	1.61	1.27	1.22
P-321-CCT-L	21	2.77	2.22	1.86	1.48	1.43
P-324-CCT-L	24	3.22	2.58	2.17	1.73	1.65
P-327-CCT-L	27	3.65	2.94	2.44	1.96	1.86
P-330-CCT-L	30	4.09	3.28	2.74	2.19	2.09
P-333-CCT-L	33	4.51	3.61	3.03	2.42	2.28

SOCKETS WITH CABLE CLAMPS/TOP & KEEPERS

S-302-CCT-K	2	$1.03	$0.84	$0.73	$0.56	$0.53
S-303-CCT-K	3	1.14	.92	.76	.59	.57
S-304-CCT-K	4	1.20	.96	.80	.62	.59
S-306-CCT-K	6	1.32	1.04	.88	.73	.69
S-308-CCT-K	8	1.46	1.19	.98	.80	.76
S-310-CCT-K	10	1.64	1.30	1.06	.87	.83
S-312-CCT-K	12	1.81	1.45	1.22	.97	.94
S-315-CCT-K	15	2.25	1.81	1.50	1.22	1.16
S-318-CCT-K	18	2.55	2.04	1.70	1.36	1.29
S-321-CCT-K	21	2.97	2.37	1.99	1.61	1.49
S-324-CCT-K	24	3.40	2.73	2.26	1.81	1.73
S-327-CCT-K	27	3.83	3.06	2.57	2.07	1.94
S-330-CCT-K	30	4.31	3.45	2.87	2.28	2.19
S-333-CCT-K	33	4.72	3.77	3.15	2.53	2.39

PLUGS WITH CABLE CLAMPS/END

P-306-CCE	6	$1.14	$0.93	$0.77	$0.59	$0.57
P-308-CCE	8	1.23	.98	.82	.65	.62
P-310-CCE	10	1.34	1.05	.92	.74	.70
P-312-CCE	12	1.45	1.18	.97	.79	.75
P-315-CCE	15	1.89	1.51	1.28	1.01	.97
P-318-CCE	18	2.21	1.76	1.47	1.20	1.14
P-321-CCE	21	2.95	2.36	1.98	1.56	1.49
P-324-CCE	24	3.08	2.47	2.07	1.67	1.62
P-327-CCE	27	3.51	2.80	2.35	1.87	1.78
P-330-CCE	30	3.95	3.15	2.62	2.11	2.00
P-333-CCE	33	4.36	3.49	2.93	2.34	2.21

SOCKETS WITH CABLE CLAMPS/END

S-306-CCE	6	$1.19	$0.95	$0.81	$0.62	$0.59
S-308-CCE	8	1.31	1.03	.88	.73	.69
S-310-CCE	10	1.47	1.20	1.00	.80	.76
S-312-CCE	12	1.67	1.32	1.12	.88	.84
S-315-CCE	15	2.11	1.70	1.41	1.14	1.05
S-318-CCE	18	2.37	1.89	1.62	1.28	1.22
S-321-CCE	21	2.81	2.25	1.87	1.49	1.44
S-324-CCE	24	3.24	2.60	2.18	1.73	1.67
S-327-CCE	27	3.66	2.95	2.47	1.98	1.86
S-330-CCE	30	4.12	3.30	2.76	2.21	2.10
S-333-CCE	33	4.55	3.64	3.05	2.44	2.33

PLUGS WITH DEEP BRACKETS

P-302-DB	2	$0.98	$0.80	$0.65	$0.52	$0.51
P-303-DB	3	.99	.80	.69	.53	.51
P-304-DB	4	1.04	.84	.72	.56	.53
P-306-DB	6	1.19	.94	.79	.62	.58
P-308-DB	8	1.26	1.01	.84	.69	.63
P-312-DB	12	1.44	1.18	.97	.77	.75
P-315-DB	15	1.75	1.41	1.20	.95	.92
P-318-DB	18	2.10	1.69	1.41	1.15	1.05
P-321-DB	21	2.52	2.03	1.69	1.34	1.28
P-324-DB	24	2.95	2.36	1.98	1.59	1.49
P-327-DB	27	3.38	2.71	2.25	1.79	1.72
P-330-DB	30	3.78	3.04	2.55	2.04	1.93
P-333-DB	33	4.18	3.38	2.81	2.23	2.17

SOCKETS WITH DEEP BRACKETS

S-302-DB	2	$1.00	$0.82	$0.70	$0.55	$0.52
S-303-DB	3	1.00	.81	.70	.55	.52
S-304-DB	4	1.05	.86	.74	.57	.55
S-306-DB	6	1.22	.97	.82	.63	.60
S-308-DB	8	1.34	1.05	.92	.74	.69
S-312-DB	12	1.67	1.31	1.12	.88	.84
S-315-DB	15	1.96	1.59	1.31	1.03	.99
S-318-DB	18	2.26	1.81	1.50	1.23	1.18
S-321-DB	21	2.71	2.17	1.79	1.44	1.37
S-324-DB	24	3.12	2.51	2.10	1.69	1.61
S-327-DB	27	3.55	2.82	2.36	1.88	1.79
S-330-DB	30	3.99	3.20	2.67	2.14	2.04
S-333-DB	33	4.39	3.53	2.95	2.35	2.23

PLUGS WITH SHALLOW BRACKETS

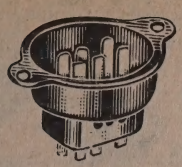
P-315-SB	15	$1.75	$1.41	$1.20	$0.95	$0.92
P-318-SB	18	2.10	1.69	1.41	1.15	1.05
P-321-SB	21	2.52	2.03	1.69	1.34	1.28
P-324-SB	24	2.95	2.36	1.98	1.59	1.49
P-327-SB	27	3.38	2.71	2.25	1.79	1.72
P-330-SB	30	3.78	3.04	2.55	2.04	1.93
P-333-SB	33	4.18	3.38	2.81	2.23	2.17

SOCKETS WITH SHALLOW BRACKETS

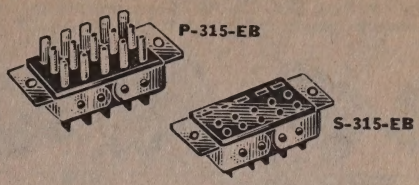
S-315-SB	15	$1.96	$1.59	$1.31	$1.03	$0.94
S-318-SB	18	2.26	1.81	1.50	1.23	1.18
S-321-SB	21	2.71	2.17	1.79	1.44	1.37
S-324-SB	24	3.12	2.51	2.10	1.69	1.61
S-327-SB	27	3.55	2.82	2.36	1.88	1.79
S-330-SB	30	3.99	3.20	2.67	2.14	2.04
S-333-SB	33	4.39	3.53	2.95	2.35	2.23

LARGER QUANTITY PRICING AVAILABLE ON REQUEST

300 SERIES "JONES" PLUGS AND SOCKETS (CONTINUED)



P-306-RP S-306-RP



P-315-EB S-315-EB

PLUGS WITH RECESSED PLATES

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
P-302-RP	2	$0.77	$0.60	$0.52	$0.43	$0.42
P-303-RP	3	.81	.63	.55	.45	.43
P-304-RP	4	.86	.70	.57	.48	.45
P-306-RP	6	.99	.80	.62	.52	.51
P-308-RP	8	1.14	.92	.76	.59	.57
P-310-RP	10	1.30	1.00	.84	.70	.63
P-312-RP	12	1.41	1.14	.95	.76	.73

PLUGS WITH END BRACKETS

P-315-EB	15	$1.26	$0.99	$0.83	$0.69	$0.62
P-318-EB	18	1.48	1.21	.99	.80	.77
P-321-EB	21	1.85	1.47	1.25	.99	.95
P-324-EB	24	2.22	1.78	1.48	1.21	1.16
P-327-EB	27	2.60	2.09	1.74	1.39	1.32
P-330-EB	30	2.98	2.37	1.99	1.62	1.50
P-333-EB	33	3.33	2.67	2.22	1.78	1.70

SOCKETS WITH RECESSED PLATES

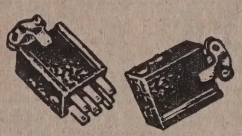
Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
S-302-RP	2	$0.81	$0.63	$0.53	$0.44	$0.43
S-303-RP	3	.83	.69	.56	.45	.44
S-304-RP	4	.88	.73	.59	.49	.47
S-306-RP	6	1.01	.82	.70	.55	.52
S-308-RP	8	1.22	.97	.82	.65	.60
S-310-RP	10	1.41	1.14	.95	.76	.73
S-312-RP	12	1.63	1.29	1.06	.87	.82

SOCKETS WITH END BRACKETS

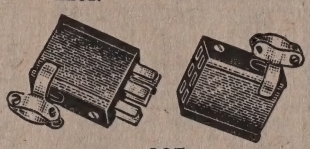
S-315-EB	15	$1.44	$1.18	$0.96	$0.77	$0.75
S-318-EB	18	2.31	1.32	1.12	.88	.84
S-321-EB	21	2.04	1.64	1.36	1.06	1.02
S-324-EB	24	2.39	1.91	1.63	1.29	1.23
S-327-EB	27	2.77	2.22	1.85	1.48	1.41
S-330-EB	30	3.18	2.55	2.12	1.71	1.63
S-333-EB	33	3.55	2.82	2.36	1.88	1.79

400 SERIES PLUGS AND SOCKETS are rated for duty beyond the range of 300 Series: 1200 V rms at 15 amps. Contact resistance, .001 ohm avg. Polarized and suitable for either cap or panel mounting in 2, 4, 6, 8, 10 and 12 contact sizes. "Knife-switch" type socket contacts of cadmium-plated phosphor bronze engage both sides of flat plug contacts. Plug prongs are cadmium-plated brass ¼" wide, 1/16" thick. Caps finished in black wrinkle and fiber lined.

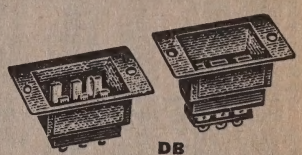
AB



CCT



CCE



DB

PLUGS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
P-402-AB	2	$0.99	$0.80	$0.66	$0.53	$0.51
P-404-AB	4	1.22	.98	.81	.63	.60
P-406-AB	6	1.43	1.14	.97	.77	.74
P-408-AB	8	1.65	1.31	1.08	.87	.83
P-410-AB	10	1.85	1.48	1.26	1.00	.96
P-412-AB	12	2.08	1.67	1.38	1.10	1.04

PLUGS WITH CABLE CLAMPS/TOP

P-402-CCT	2	$1.64	$1.31	$1.08	$0.87	$0.83
P-404-CCT	4	1.86	1.49	1.26	1.00	.96
P-406-CCT	6	2.14	1.71	1.44	1.16	1.08
P-408-CCT	8	2.37	1.88	1.59	1.28	1.22
P-410-CCT	10	2.73	2.18	1.83	1.46	1.38
P-412-CCT	12	2.97	2.38	1.98	1.61	1.50

PLUGS WITH CABLE CLAMPS/END

P-402-CCE	2	$1.69	$1.36	$1.14	$0.92	$0.86
P-404-CCE	4	1.91	1.52	1.29	1.02	.98
P-406-CCE	6	2.19	1.75	1.46	1.19	1.11
P-408-CCE	8	2.43	1.94	1.63	1.30	1.25
P-410-CCE	10	2.77	2.21	1.86	1.49	1.41
P-412-CCE	12	3.03	2.42	2.03	1.63	1.52

PLUGS WITH DEEP BRACKETS

P-402-DB	2	$1.31	$1.04	$0.87	$0.72	$0.66
P-404-DB	4	1.61	1.28	1.05	.84	.82
P-406-DB	6	1.86	1.49	1.26	1.00	.96
P-408-DB	8	2.14	1.71	1.44	1.16	1.08
P-410-DB	10	2.42	1.93	1.63	1.30	1.25
P-412-DB	12	2.71	2.17	1.81	1.44	1.37

PLUGS WITH SHALLOW BRACKETS

P-402-SB	2	$1.27	$1.01	$0.84	$0.66	$0.63
P-404-SB	4	1.52	1.25	1.02	.82	.79
P-406-SB	6	1.81	1.45	1.23	.98	.94
P-408-SB	8	2.10	1.68	1.39	1.11	1.05
P-410-SB	10	2.37	1.88	1.61	1.28	1.22
P-412-SB	12	2.63	2.10	1.76	1.41	1.34

PLUGS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

P-402-LAB	2	$0.56	$0.47	$0.38	$0.30	$0.29
P-404-LAB	4	.79	.60	.52	.44	.41
P-406-LAB	6	1.03	.83	.72	.56	.53
P-408-LAB	8	1.27	1.01	.84	.66	.60
P-410-LAB	10	1.61	1.29	1.06	.86	.82
P-412-LAB	12	1.85	1.48	1.25	.99	.96

*Except in 2-contact size.

SOCKETS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
S-402-AB	2	$1.16	$0.93	$0.77	$0.60	$0.58
S-404-AB	4	1.48	1.19	.99	.80	.76
S-406-AB	6	1.81	1.45	1.23	.98	.94
S-408-AB	8	2.14	1.71	1.43	1.15	1.06
S-410-AB	10	2.45	1.97	1.65	1.31	1.26
S-412-AB	12	2.79	2.22	1.86	1.49	1.43

SOCKETS WITH CABLE CLAMPS/TOP

S-402-CCT	2	$1.85	$1.48	$1.25	$0.99	$0.96
S-404-CCT	4	2.20	1.76	1.48	1.19	1.11
S-406-CCT	6	2.57	2.07	1.71	1.37	1.30
S-408-CCT	8	2.90	2.35	1.96	1.55	1.49
S-410-CCT	10	3.28	2.62	2.20	1.79	1.69
S-412-CCT	12	3.65	2.90	2.43	1.96	1.86

SOCKETS WITH CABLE CLAMPS/END

S-402-CCE	2	$1.89	$1.51	$1.28	$1.02	$0.98
S-404-CCE	4	2.25	1.81	1.51	1.22	1.16
S-406-CCE	6	2.62	2.10	1.75	1.41	1.34
S-408-CCE	8	2.98	2.38	1.99	1.61	1.51
S-410-CCE	10	3.33	2.67	2.22	1.79	1.70
S-412-CCE	12	3.69	2.95	2.47	1.98	1.87

SOCKETS WITH DEEP BRACKETS

S-402-DB	2	$1.48	$1.19	$0.99	$0.80	$0.76
S-404-DB	4	1.86	1.49	1.26	1.00	.96
S-406-DB	6	2.25	1.81	1.51	1.23	1.16
S-408-DB	8	2.63	2.12	1.76	1.41	1.34
S-410-DB	10	3.04	2.42	2.03	1.64	1.53
S-412-DB	12	3.43	2.74	2.28	1.84	1.74

SOCKETS WITH SHALLOW BRACKETS

S-402-SB	2	$1.43	$1.14	$0.97	$0.77	$0.74
S-404-SB	4	1.81	1.45	1.23	.98	.94
S-406-SB	6	2.20	1.78	1.48	1.19	1.11
S-408-SB	8	2.59	2.09	1.74	1.38	1.31
S-410-SB	10	2.37	1.99	1.99	1.62	1.51
S-412-SB	12	3.37	2.71	2.25	1.81	1.71

SOCKETS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

S-402-LAB	2	$0.73	$0.57	$0.49	$0.38	$0.35
S-404-LAB	4	1.04	.83	.72	.57	.55
S-406-LAB	6	1.37	1.08	.93	.75	.72
S-408-LAB	8	1.70	1.36	1.15	.93	.86
S-410-LAB	10	2.03	1.64	1.36	1.06	1.03
S-412-LAB	12	2.36	1.88	1.56	1.27	1.21

*Except in 2-contact size.

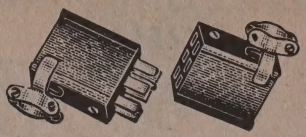
LARGER QUANTITY PRICING AVAILABLE ON REQUEST

CINCH Plugs and Sockets

"JONES" PLUGS AND SOCKETS 2400 SERIES

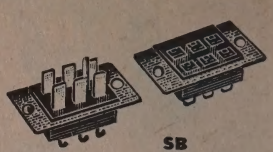
2400 SERIES PLUGS AND SOCKETS are designed for excellent electrical and mechanical performance. Ratings are the same as 400 Series, except for higher (1700 volts) voltage rating. Fully interchangeable with corresponding units of the 400 Series.

CCT



CCE

DB



SB

PLUGS WITH CABLE CLAMPS/TOP

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
P-2402-CCT	2	$1.72	$1.38	$1.16	$0.93	$0.87
P-2404-CCT	4	1.96	1.55	1.31	1.04	1.00
P-2406-CCT	6	2.19	1.75	1.46	1.19	1.11
P-2408-CCT	8	2.42	1.94	1.64	1.30	1.25
P-2410-CCT	10	2.67	2.14	1.78	1.43	1.36
P-2412-CCT	12	2.79	2.23	1.87	1.49	1.41

SOCKETS WITH CABLE CLAMPS/TOP

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
S-2402-CCT	2	$1.87	$1.20	$1.27	$1.00	$0.97
S-2404-CCT	4	2.08	1.67	1.38	1.10	1.04
S-2406-CCT	6	2.33	1.85	1.53	1.26	1.19
S-2408-CCT	8	2.57	2.07	1.71	1.37	1.30
S-2410-CCT	10	2.81	2.23	1.87	1.50	1.43
S-2412-CCT	12	3.05	2.44	2.04	1.64	1.55

PLUGS WITH CABLE CLAMPS/END

P-2402-CCE	2	$1.76	$1.43	$1.20	$0.96	$0.92
P-2404-CCE	4	2.01	1.62	1.34	1.06	1.02
P-2406-CCE	6	2.23	1.79	1.50	1.22	1.16
P-2408-CCE	8	2.47	1.98	1.67	1.32	1.27
P-2410-CCE	10	2.72	2.19	1.83	1.45	1.38
P-2412-CCE	12	2.96	2.37	1.97	1.56	1.50

SOCKETS WITH CABLE CLAMPS/END

S-2402-CCE	2	$1.93	$1.53	$1.29	$1.02	$0.99
S-2404-CCE	4	2.12	1.70	1.43	1.14	1.06
S-2406-CCE	6	2.37	1.88	1.61	1.28	1.22
S-2408-CCE	8	2.61	2.10	1.75	1.39	1.32
S-2410-CCE	10	2.86	2.28	1.91	1.52	1.45
S-2412-CCE	12	3.11	2.49	2.09	1.67	1.56

PLUGS WITH DEEP BRACKETS

P-2402-DB	2	$1.36	$1.06	$0.92	$0.74	$0.70
P-2404-DB	4	1.56	1.22	1.04	.84	.81
P-2406-DB	6	1.81	1.44	1.22	.98	.93
P-2408-DB	8	2.03	1.64	1.36	1.06	1.03
P-2410-DB	10	2.25	1.81	1.50	1.22	1.16
P-2412-DB	12	2.47	1.98	1.67	1.32	1.27

SOCKETS WITH DEEP BRACKETS

S-2402-DB	2	$1.45	$1.18	$0.98	$0.79	$0.75
S-2404-DB	4	1.69	1.36	1.14	.92	.86
S-2406-DB	6	1.93	1.53	1.29	1.02	.99
S-2408-DB	8	2.17	1.72	1.45	1.18	1.08
S-2410-DB	10	2.39	1.91	1.61	1.29	1.23
S-2412-DB	12	2.62	2.11	1.76	1.41	1.34

PLUGS WITH SHALLOW BRACKETS

P-2402-SB	2	$1.26	$1.00	$0.83	$0.66	$0.63
P-2404-SB	4	1.48	1.19	.99	.80	.76
P-2406-SB	6	1.70	1.36	1.14	.93	.86
P-2408-SB	8	1.93	1.55	1.29	1.22	1.10
P-2410-SB	10	2.15	1.72	1.44	1.16	1.08
P-2412-SB	12	2.40	1.89	1.61	1.28	1.22

SOCKETS WITH SHALLOW BRACKETS

S-2402-SB	2	$1.36	$1.06	$0.92	$0.74	$0.70
S-2404-SB	4	1.59	1.28	1.05	.84	.81
S-2406-SB	6	1.83	1.46	1.23	.98	.94
S-2408-SB	8	2.07	1.65	1.38	1.10	1.04
S-2410-SB	10	2.31	1.84	1.52	1.25	1.18
S-2412-SB	12	2.55	2.03	1.70	1.36	1.29

PLUGS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

P-2402-LAB	2	$0.72	$0.56	$0.48	$0.35	$0.34
P-2404-LAB	4	.93	.75	.60	.50	.48
P-2406-LAB	6	1.16	.93	.77	.60	.58
P-2408-LAB	8	1.37	1.08	.93	.75	.72
P-2410-LAB	10	1.62	1.28	1.05	.86	.82
P-2412-LAB	12	1.83	1.46	1.23	.98	.94

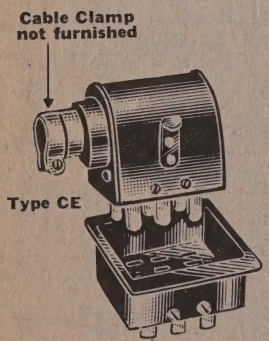
*Except in 2 contact size.

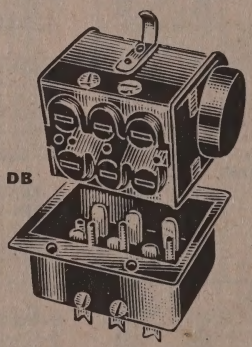
SOCKETS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

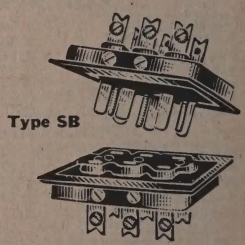
S-2402-LAB	2	$0.80	$0.63	$0.53	$0.44	$0.43
S-2404-LAB	4	1.02	.82	.72	.56	.53
S-2406-LAB	6	1.28	1.01	.84	.70	.63
S-2408-LAB	8	1.50	1.22	1.01	.81	.77
S-2410-LAB	10	1.74	1.39	1.18	.94	.88
S-2412-LAB	12	1.97	1.61	1.32	1.04	1.00

*Except in 2 contact size.

"JONES" PLUGS AND SOCKETS 500 SERIES







500 SERIES PLUGS AND SOCKETS feature three types—**Type DB** with deep bracket for recessed mounting; **Type CE** for cable clamp in end; **Type SB** with shallow bracket for flush mounting. **Rated Voltage:** 3 kV, max. **Rated Current:** 25 amperes per contact. **Power Capacity:** 5 kW, max. **Contacts:** Male, cadmium plated brass; Female, cadmium plated phosphor. **Caps and Brackets:** Parkerized steel.

CABLE CLAMP IN END

Cinch Number Plug	Cinch Number Socket	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249
P-502-CE	S-502-CE	2	$14.36	$11.50	$ 9.38	$ 8.33
P-504-CE	S-504-CE	4	16.59	13.25	11.13	10.09
P-506-CE	S-506-CE	6	18.13	14.50	12.39	11.32
P-508-CE	S-508-CE	8	19.01	15.19	13.09	12.00
P-510-CE	S-510-CE	10	20.77	16.63	14.50	13.45
P-512-CE	S-512-CE	12	22.10	17.69	15.58	14.50

DEEP BRACKET FOR RECESSED MOUNTING

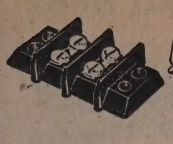
Cinch Number Plug	Cinch Number Socket	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249
P-502-DB	S-502-DB	2	$12.14	$ 9.75	$ 7.62	$ 6.57
P-504-DB	S-504-DB	4	13.93	11.13	9.03	7.98
P-506-DB	S-506-DB	6	15.59	12.47	10.36	9.31
P-508-DB	S-508-DB	8	17.01	13.63	11.51	10.41
P-510-DB	S-510-DB	10	18.45	14.77	12.67	11.60
P-512-DB	S-512-DB	12	19.47	15.65	13.54	12.47

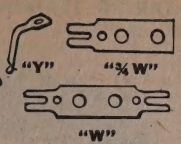
SHALLOW BRACKET FOR FLUSH MOUNTING

P-502-SB	S-502-SB	2	$12.14	$ 9.75	$ 7.62	$ 6.57
P-504-SB	S-504-SB	4	13.93	11.13	9.03	7.98
P-506-SB	S-506-SB	6	15.59	12.47	10.36	9.31
P-508-SB	S-508-SB	8	17.01	13.63	11.51	10.41
P-510-SB	S-510-SB	10	18.45	14.77	12.67	11.60
P-512-SB	S-512-SB	12	19.47	15.65	13.54	12.47

LARGER QUANTITY PRICING AVAILABLE ON REQUEST

CINCH Barrier Terminal Blocks





Barrier design for high voltage rating and protection against frayed wire. Molded phenolic base with eyelets and binder head screws nickel plated brass. **Terminals:** Hot solder-dipped brass. Available with **Y** or **¾W** as indicated. **W** terminals on special order only.

	Type 140	Type 141	Type 142	Type 150*	Type 151*	Type 152*	Type 164
Size, W. x H.	1/8" x 13/32"	1 1/8" x 1/2"	1 5/16" x 5/8"	1 13/16" x 3/4"	2" x 15/16"	2 1/2" x 1 1/8"	1/8" x 11/32"
Barrier Spacing	3/8"	7/16"	9/16"	11/16"	7/8"	1 1/8"	3/8"
Mounting Centers	5/16"	27/64"	1/2"	5/8"	3/4"	7/8"	5/16"
Mtg. Hole Dia.	.160"	.175/.185"	.209"	.160"	.180"	.209"	.171/.175"
Screw Size	5-40 x 3/16"	6-32 x 1/4"	8-32 x 5/16"	10-32 x 5/16"	12-32 x 3/8"	1/4-28 x 1/2"	6-32 x 1/4"

*Have .136" dia. hole centered between mounting holes.

140 SERIES

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-140	1	$0.26	$0.20	$0.18	$0.16	$0.15	$0.14
2-140	2	.30	.26	.21	.18	.17	.16
3-140	3	.34	.29	.25	.20	.19	.18
4-140	4	.45	.34	.30	.26	.25	.21
5-140	5	.54	.44	.35	.31	.30	.28
6-140	6	.62	.51	.44	.34	.31	.33
7-140	7	.73	.57	.50	.40	.37	.35
8-140	8	.82	.67	.55	.45	.44	.41
9-140	9	.93	.74	.59	.50	.48	.45
10-140	10	1.00	.81	.70	.54	.52	.50
11-140	11	1.07	.87	.74	.57	.55	.53
12-140	12	1.21	.96	.80	.62	.59	.57
13-140	13	1.28	1.01	.87	.71	.65	.61
14-140	14	1.38	1.10	.94	.75	.72	.67
15-140	15	1.46	1.20	.98	.79	.76	.73
16-140	16	1.55	1.25	1.03	.83	.80	.76
17-140	17	1.66	1.31	1.10	.91	.83	.80
18-140	18	1.74	1.40	1.19	.94	.91	.83
19-140	19	1.83	1.45	1.23	.98	.94	.91
20-140	20	1.92	1.54	1.29	1.01	.98	.94
21-140†	21	2.03	1.63	1.36	1.05	1.01	.97

141 SERIES

1-141	1	$0.30	$0.25	$0.21	$0.18	$0.16	$0.16
2-141	2	.33	.27	.23	.19	.18	.17
3-141	3	.45	.34	.30	.25	.23	.21
4-141	4	.57	.48	.40	.32	.31	.30
5-141	5	.73	.55	.52	.42	.35	.34
6-141	6	.80	.62	.54	.45	.42	.40
7-141	7	.95	.75	.62	.51	.49	.48
8-141	8	1.03	.83	.72	.56	.54	.51
9-141	9	1.18	.94	.79	.61	.58	.55
10-141	10	1.29	1.02	.87	.82	.67	.61
11-141	11	1.40	1.11	.96	.76	.73	.70
12-141	12	1.50	1.22	1.00	.81	.78	.74
13-141	13	1.65	1.30	1.07	.88	.83	.79
14-141	14	1.75	1.40	1.19	.95	.91	.86
15-141	15	1.85	1.47	1.25	.99	.95	.92
16-141	16	1.98	1.60	1.33	1.04	1.00	.96
17-141	17	2.10	1.68	1.41	1.15	1.04	1.00
18-141	18	2.21	1.77	1.47	1.20	1.15	1.05
19-141	19	2.34	1.86	1.59	1.25	1.21	1.15
20-141	20	2.47	1.97	1.66	1.25	1.21	1.15

142 SERIES

1-142	1	$0.33	$0.27	$0.23	$0.19	$0.18	$0.17
2-142	2	.40	.31	.27	.21	.23	.19
3-142	3	.53	.42	.34	.29	.28	.28
4-142	4	.71	.55	.48	.37	.35	.34
5-142	5	.83	.67	.55	.47	.44	.42
6-142	6	.98	.79	.67	.53	.51	.49
7-142	7	1.15	.92	.76	.59	.57	.54
8-142	8	1.28	1.01	.86	.70	.65	.59
9-142	9	1.41	1.15	.95	.76	.73	.70
10-142	10	1.59	1.26	1.03	.83	.80	.76
11-142	11	1.72	1.37	1.17	.92	.88	.82
12-142	12	1.85	1.47	1.25	.98	.95	.92
13-142	13	2.02	1.62	1.35	1.05	1.01	.97
14-142	14	2.16	1.73	1.44	1.18	1.10	1.02
15-142	15	2.31	1.84	1.54	1.24	1.19	1.11
16-142	16	2.47	1.97	1.66	1.31	1.25	1.20
17-142	17	2.60	2.09	1.74	1.40	1.33	1.26

150 SERIES

Optional terminal **Y** available; prices on request.

1-150	1	$0.74	$0.58	$0.51	$0.42	$0.41	$0.37
2-150	2	1.00	.81	.70	.54	.52	.50
3-150	3	1.41	1.15	.95	.76	.73	.70
4-150	4	1.82	1.45	1.23	.97	.94	.88
5-150	5	2.23	1.77	1.47	1.21	1.15	1.05
6-150	6	2.62	2.12	1.76	1.41	1.35	1.28
7-150	7	3.05	2.43	2.05	1.63	1.55	1.45
8-150	8	3.46	2.77	2.31	1.84	1.75	1.67
9-150	9	3.87	3.09	2.58	2.07	1.97	1.85
10-150	10	4.28	3.42	2.85	2.28	2.17	2.07

151 SERIES

1-151	1	$1.07	$0.87	$0.73	$0.57	$0.56	$0.54
2-151	2	1.81	1.44	1.22	.97	.93	.87
3-151	3	2.60	2.09	1.74	1.40	1.33	1.26
4-151	4	3.41	2.72	2.26	1.82	1.73	1.65
5-151	5	4.22	3.36	2.80	2.24	2.13	2.03
6-151	6	5.00	4.01	3.34	2.68	2.55	2.41
7-151	7	5.79	4.62	3.87	3.09	2.94	2.79
8-151	8	6.59	5.27	4.39	3.52	3.35	3.18

152 SERIES

1-152	1	$2.06	$1.65	$1.37	$1.17	$1.15	$1.04
2-152	2	3.01	2.41	2.02	1.66	1.62	1.50
3-152	3	4.10	3.28	2.73	2.25	2.19	2.08
4-152	4	5.20	4.15	3.48	2.92	2.77	2.62
5-152	5	6.29	5.03	4.22	3.53	3.35	3.18
6-152	6	7.39	5.92	4.93	4.14	3.93	3.73

140-Y AND ¾W SERIES

Cinch Number*	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-140-Y	1	$0.30	$0.25	$0.21	$0.18	$0.16	$0.16
2-140-Y	2	.37	.30	.27	.21	.20	.19
3-140-Y	3	.47	.37	.31	.29	.27	.26
4-140-Y	4	.61	.51	.44	.33	.32	.31
5-140-Y	5	.76	.60	.52	.42	.41	.37
6-140-Y	6	.94	.75	.61	.51	.47	.45
7-140-Y	7	1.01	.82	.71	.54	.52	.50
8-140-Y	8	1.18	.94	.79	.61	.58	.55
9-140-Y	9	1.30	1.02	.88	.72	.67	.61
10-140-Y	10	1.43	1.18	.97	.78	.74	.72
11-140-Y	11	1.55	1.25	1.03	.83	.80	.76
12-140-Y	12	1.71	1.36	1.17	.93	.87	.82
13-140-Y	13	1.83	1.46	1.24	.98	.95	.91
14-140-Y	14	1.98	1.60	1.33	1.04	1.00	.96
15-140-Y	15	2.12	1.70	1.41	1.15	1.05	1.01
16-140-Y	16	2.23	1.79	1.49	1.21	1.17	1.05
17-140-Y	17	2.37	1.89	1.61	1.28	1.22	1.17
18-140-Y	18	2.52	2.02	1.68	1.35	1.28	1.22
19-140-Y	19	2.62	2.12	1.76	1.41	1.35	1.28
20-140-Y	20	2.77	2.21	1.84	1.46	1.41	1.33
21-140-Y†	21	2.92	2.34	1.96	1.55	1.47	1.41

141-Y AND ¾W SERIES

1-141-Y	1	$0.35	$0.29	$0.26	$0.20	$0.19	$0.18
2-141-Y	2	.47	.35	.30	.28	.27	.26
3-141-Y	3	.62	.51	.44	.33	.32	.32
4-141-Y	4	.82	.67	.55	.45	.44	.41
5-141-Y	5	.99	.80	.66	.53	.51	.49
6-141-Y	6	1.15	.93	.78	.59	.57	.55
7-141-Y	7	1.35	1.05	.92	.73	.71	.65
8-141-Y	8	1.49	1.21	1.00	.81	.78	.74
9-141-Y	9	1.67	1.33	1.11	.91	.86	.80
10-141-Y	10	1.84	1.46	1.24	.99	.95	.91
11-141-Y	11	2.03	1.63	1.36	1.05	1.01	.97
12-141-Y	12	2.19	1.75	1.45	1.19	1.11	1.04
13-141-Y	13	2.37	1.89	1.61	1.28	1.22	1.17
14-141-Y	14	2.56	2.06	1.72	1.37	1.30	1.24
15-141-Y	15	2.72	2.18	1.82	1.45	1.38	1.31
16-141-Y	16	2.92	2.34	1.96	1.55	1.47	1.41
17-141-Y	17	3.09	2.48	2.08	1.67	1.59	1.47
18-141-Y	18	3.27	2.61	2.19	1.75	1.67	1.60
19-141-Y	19	3.48	2.78	2.31	1.84	1.76	1.68
20-141-Y	20	3.63	2.92	2.43	1.96	1.84	1.75

142-Y AND ¾W SERIES

1-142-Y	1	$0.41	$0.32	$0.28	$0.23	$0.21	$0.20
2-142-Y	2	.54	.45	.35	.31	.30	.29
3-142-Y	3	.75	.59	.51	.38	.37	.37
4-142-Y	4	.99	.80	.67	.53	.51	.49
5-142-Y	5	1.21	.96	.81	.65	.59	.57
6-142-Y	6	1.43	1.17	.96	.78	.74	.71
7-142-Y	7	1.66	1.31	1.10	.91	.83	.80
8-142-Y	8	1.85	1.47	1.25	.98	.95	.92
9-142-Y	9	2.08	1.67	1.38	1.10	1.03	.99
10-142-Y	10	2.31	1.84	1.54	1.24	1.19	1.11
11-142-Y	11	2.52	2.03	1.70	1.35	1.28	1.22
12-142-Y	12	2.73	2.19	1.83	1.45	1.40	1.31
13-142-Y	13	2.97	2.37	1.98	1.60	1.50	1.43
14-142-Y	14	3.18	2.55	2.13	1.71	1.63	1.52
15-142-Y	15	3.42	2.72	2.26	1.82	1.73	1.65
16-142-Y	16	3.62	2.92	2.43	1.94	1.84	1.75
17-142-Y	17	3.85	3.07	2.57	2.07	1.96	1.84

*For ¾W Series, substitute **¾W** for **Y**, e.g., 1-142-**¾W**; prices on request. Mounting centers and lengths same as 142 Series.
†Also available 22, 23, 24 and 25 contacts; prices on request.

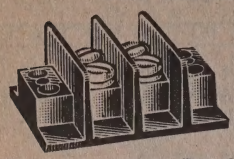
164 SERIES

Mounting centers and overall lengths same as 140 Series. Optional terminals **¾W** and **Y** available; prices on request.

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-164	1	$0.28	$0.23	$0.19	$0.17	$0.16	$0.15
2-164	2	.33	.27	.23	.19	.18	.17
3-164	3	.42	.32	.28	.23	.21	.20
4-164	4	.53	.44	.35	.29	.28	.28
5-164	5	.62	.52	.45	.34	.33	.32
6-164	6	.76	.58	.51	.42	.40	.37
7-164	7	.86	.70	.56	.48	.45	.42
8-164	8	.96	.78	.65	.52	.50	.48
9-164	9	1.01	.84	.71	.55	.53	.51
10-164	10	1.19	.95	.79	.61	.58	.56
11-164	11	1.28	1.01	.86	.70	.65	.59
12-164	12	1.38	1.10	.94	.75	.72	.67
13-164	13	1.47	1.21	.99	.80	.76	.73
14-164	14	1.62	1.29	1.05	.87	.82	.79
15-164	15	1.73	1.37	1.17	.93	.88	.82
16-164	16	1.83	1.45	1.23	.98	.94	.91
17-164	17	1.92	1.54	1.29	1.01	.98	.94
18-164	18	2.05	1.65	1.37	1.07	1.02	.98
19-164	19	2.15	1.72	1.43	1.17	1.07	1.02
20-164	20	2.25	1.81	1.50	1.22	1.18	1.07
21-164	21	2.36	1.89	1.60	1.26	1.22	1.17

CINCH Barrier Terminal Blocks

500 SERIES TERMINAL BLOCKS



Designed for critical electrical and mechanical requirements. Closed bottoms eliminate need for insulating strips. Knock-outs are molded in so "Y" terminals are acceptable if desired. Top-mounted marker strip available. **Series 540:** Terminals on 3/8" centers; 5-40 binder head screws. Rated 2300 V rms, 15 A max. Size, 1 1/8" w. x 39/64" h. **Series 541:** Terminals on 7/16" ctrs.; 6-32 binder head screws. Rated 2800 V rms, 20 A max. Size, 1 3/8" w. x 11/16" h. **Series 542:** Terminals on 1/2" ctrs.; 8-32 binder head screws. Rated 4000 V rms, 30 A max. Size, 1 5/8" w. x 7/8" h.

540 SERIES

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
2-540	2	$0.70	$0.54	$0.48	$0.37	$0.35	$0.33
3-540	3	.94	.75	.61	.51	.49	.42
4-540	4	1.15	.92	.76	.60	.57	.50
5-540	5	1.20	.95	.80	.62	.59	.56
6-540	6	1.61	1.28	1.07	.87	.71	.65
7-540	7	1.46	1.22	1.00	.81	.78	.74
8-540	8	1.68	1.35	1.15	.92	.87	.81
9-540	9	1.83	1.46	1.24	.98	.95	.91
10-540	10	2.02	1.62	1.35	1.05	1.01	.97
11-540	11	2.18	1.74	1.45	1.19	1.11	1.03
12-540	12	2.34	1.86	1.59	1.25	1.21	1.21
13-540	13	2.52	2.02	1.68	1.35	1.28	1.22
14-540	14	2.68	2.15	1.79	1.43	1.37	1.29
15-540	15	2.83	2.26	1.89	1.50	1.44	1.37
16-540	16	3.01	2.41	2.02	1.62	1.52	1.44
17-540	17	3.18	2.55	2.13	1.71	1.63	1.52
18-540	18	3.34	2.68	2.23	1.77	1.71	1.62
19-540	19	3.51	2.80	2.34	1.86	1.77	1.70
20-540	20	3.66	2.94	2.47	1.97	1.86	1.76
21-540	21	3.84	3.07	2.56	2.06	1.96	1.84
22-540	22	4.01	3.20	2.68	2.15	2.05	1.93
23-540	23	4.16	3.34	2.79	2.23	2.13	2.02
24-540	24	4.33	3.48	2.91	2.31	2.20	2.09
25-540	25	4.50	3.60	3.01	2.41	2.28	2.17
26-540	26	4.69	3.73	3.12	2.50	2.37	2.24
27-540	27	4.81	3.87	3.22	2.58	2.47	2.33
28-540	28	5.00	4.01	3.34	2.68	2.55	2.41
29-540	29	5.18	4.12	3.46	2.77	2.62	2.49
30-540	30	5.33	4.28	3.56	2.84	2.71	2.57
31-540	31	5.50	4.39	3.66	2.94	2.79	2.64

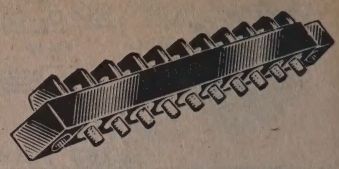
541 SERIES

2-541	2	$0.83	$0.70	$0.56	$0.47	$0.45	$0.42
3-541	3	1.00	.81	.69	.54	.52	.50
4-541	4	1.20	.95	.80	.62	.59	.56
5-541	5	1.35	1.05	.92	.73	.71	.65
6-541	6	1.61	1.28	1.07	.87	.78	.74
7-541	7	1.72	1.37	1.17	.93	.88	.82
8-541	8	1.86	1.49	1.25	.99	.96	.92
9-541	9	2.05	1.65	1.37	1.07	1.02	.98
10-541	10	2.20	1.76	1.46	1.20	1.15	1.04
11-541	11	2.36	1.89	1.60	1.26	1.22	1.17
12-541	12	2.59	2.07	1.72	1.37	1.30	1.24
13-541	13	2.72	2.18	1.82	1.45	1.38	1.31
14-541	14	2.91	2.31	1.94	1.55	1.46	1.40
15-541	15	3.07	2.47	2.06	1.65	1.55	1.46
16-541	16	3.22	2.58	2.16	1.73	1.65	1.55
17-541	17	3.44	2.73	2.28	1.83	1.74	1.66
18-541	18	3.57	2.85	2.40	1.92	1.82	1.73
19-541	19	3.74	3.01	2.52	2.02	1.92	1.81
20-541	20	3.92	3.13	2.61	2.10	1.99	1.87
21-541	21	4.07	3.27	2.72	2.18	2.08	1.97
22-541	22	4.29	3.42	2.85	2.28	2.18	2.07
23-541	23	4.46	3.56	2.98	2.37	2.25	2.15
24-541	24	4.60	3.69	3.08	2.47	2.34	2.21
25-541	25	4.78	3.84	3.19	2.56	2.43	2.30
26-541	26	4.95	3.96	3.30	2.64	2.52	2.37
27-541	27	5.16	4.10	3.44	2.75	2.60	2.48
28-541	28	5.29	4.27	3.55	2.83	2.70	2.56
29-541	29	5.46	4.36	3.65	2.93	2.78	2.62
30-541	30	5.63	4.50	3.75	3.02	2.85	2.71

542 SERIES

2-542	2	$0.92	$0.73	$0.59	$0.50	$0.48	$0.45
3-542	3	1.11	.92	.76	.58	.56	.54
4-542	4	1.35	1.05	.92	.73	.71	.65
5-542	5	1.55	1.25	1.03	.83	.80	.76
6-542	6	1.77	1.42	1.21	.96	.92	.87
7-542	7	2.02	1.62	1.35	1.05	1.01	.97
8-542	8	2.23	1.77	1.47	1.21	1.15	1.05
9-542	9	2.45	1.96	1.65	1.31	1.25	1.20
10-542	10	2.68	2.15	1.77	1.42	1.36	1.29
11-542	11	2.91	2.31	1.94	1.55	1.46	1.40
12-542	12	3.11	2.49	2.08	1.67	1.60	1.49
13-542	13	3.34	2.68	2.23	1.77	1.71	1.62
14-542	14	3.55	2.84	2.37	1.89	1.81	1.72
15-542	15	2.62	3.02	2.54	2.03	1.89	1.82
16-542	16	4.01	3.20	2.68	2.15	2.05	1.93
17-542	17	4.25	3.38	2.82	2.25	2.15	2.05
18-542	18	4.45	3.55	2.97	2.37	2.25	2.15
19-542	19	4.69	3.73	3.11	2.49	2.36	2.24
20-542	20	4.88	3.91	3.27	2.61	2.49	2.35
21-542	21	5.10	4.08	3.42	2.72	2.59	2.47
22-542	22	5.33	4.28	3.56	2.84	2.71	2.57
23-542	23	5.54	4.45	3.71	2.97	2.82	2.68
24-542	24	5.77	4.60	3.86	3.08	2.93	2.78
25-542	25	6.00	4.79	4.01	3.20	3.05	2.87
26-542	26	6.22	4.98	4.14	3.31	3.15	3.00

176 SERIES PC BARRIER TERMINAL BLOCKS



Feature molded-in terminals that cannot break loose when terminal screw is tightened. Designed for flow solder termination to the PC board conductor paths. Blocks listed are for 1/16" PC boards. To order blocks for 1/8" PC boards, change last digit to 3 (e.g., 2-176-3) same price.

Cinch No.	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
2-176-2	2	$0.99	$0.79	$0.66	$0.54	$0.51	$0.49
3-176-2	3	1.13	.91	.75	.60	.57	.55
4-176-2	4	1.26	1.01	.86	.69	.65	.61
5-176-2	5	1.38	1.10	.93	.74	.71	.67
6-176-2	6	1.52	1.22	1.02	.82	.78	.74
7-176-2	7	1.64	1.31	1.09	.88	.83	.79
8-176-2	8	1.77	1.42	1.20	.96	.92	.87
9-176-2	9	1.93	1.54	1.29	1.03	.98	.94
10-176-2	10	2.08	1.67	1.40	1.11	1.05	1.01

171 SERIES BARRIER TERMINAL BLOCKS

Miniature barrier type terminal blocks with single screw terminals. Size, 13/32" w. x 5/16" h., overall. Binder head screws, 2-56 x 3/16". Mounting holes, 1/8" dia. Rated 1000 V rms, 5 amps max.

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
2-171	2	$0.34	$0.29	$0.25	$0.19	$0.18	$0.18
3-171	3	.45	.34	.30	.25	.23	.21
4-171	4	.53	.44	.35	.29	.28	.28
5-171	5	.61	.51	.44	.33	.32	.31
6-171	6	.73	.56	.49	.40	.37	.34
7-171	7	.80	.62	.53	.44	.42	.40
8-171	8	.87	.72	.57	.48	.47	.44

172 SERIES BARRIER TERMINAL BLOCKS

Double screw terminals mounted on 1/4" centers with 2-56 x 3/16" binder head screws. Mounting holes, 1/8" dia. Rated 1000 V rms, 5 amps max.

2-172	2	$0.62	$0.51	$0.44	$0.34	$0.33	$0.31
3-172	3	.80	.62	.54	.45	.42	.40
4-172	4	.97	.79	.65	.52	.51	.49
5-172	5	1.15	.92	.76	.59	.57	.54
6-172	6	1.30	1.02	.88	.72	.67	.61
7-172	7	1.46	1.20	.98	.79	.76	.73
8-172	8	1.65	1.30	1.07	.88	.83	.79
9-172	9	1.79	1.43	1.22	.97	.93	.87
10-172	10	1.97	1.60	1.31	1.03	1.00	.96
11-172	11	2.13	1.71	1.42	1.17	1.07	1.01
12-172	12	2.30	1.83	1.54	1.24	1.19	1.10
13-172	13	2.47	1.97	1.66	1.31	1.25	1.20
14-172	14	2.62	2.10	1.75	1.41	1.35	1.26

172-Y, 3/4W OR W BARRIER TERMINALS

Series 172 barrier type terminal blocks also available with **Y**, **W** or 3/4**W** terminals. For blocks with **W** terminals, change suffix **Y** to **W**; for 3/4**W** terminals, change suffix **Y** to 3/4**W** (2-172-**W**, 2-172-3/4**W**); same price. Rated 1000 V rms, 5 amps max.

2-172-Y	2	$0.73	$0.57	$0.49	$0.40	$0.37	$0.35
3-172-Y	3	.94	.75	.61	.51	.49	.47
4-172-Y	4	1.15	.92	.76	.60	.57	.54
5-172-Y	5	1.35	1.05	.92	.73	.71	.65
6-172-Y	6	1.55	1.24	1.02	.83	.80	.75
7-172-Y	7	1.79	1.41	1.20	.95	.92	.86
8-172-Y	8	1.97	1.60	1.31	1.05	1.00	.96
9-172-Y	9	2.16	1.74	1.44	1.18	1.10	1.03
10-172-Y	10	2.37	1.89	1.61	1.28	1.22	1.17
11-172-Y	11	2.59	2.08	1.73	1.38	1.31	1.25
12-172-Y	12	2.79	2.23	1.86	1.49	1.42	1.35
13-172-Y	13	3.01	2.41	2.02	1.62	1.52	1.44
14-172-Y	14	3.20	2.57	2.15	1.72	1.65	1.54

173 SERIES BARRIER TERMINAL BLOCKS

Double screw terminals mounted on 3/8" centers. Size, 3/8" w. x 1/2" h., overall. Brass binder head screws, 4-40 x 5/16". Mounting holes, 1/4" dia. Rated 1000 V rms, 5 amps max.

2-173	2	$0.35	$0.29	$0.26	$0.20	$0.19	$0.18
3-173	3	.50	.40	.32	.28	.27	.27
4-173	4	.62	.52	.45	.34	.33	.32
5-173	5	.78	.61	.52	.42	.41	.37
6-173	6	.92	.73	.59	.50	.48	.45
7-173	7	1.02	.82	.71	.55	.53	.51
8-173	8	1.18	.93	.78	.61	.57	.55
9-173	9	1.28	1.01	.87	.71	.65	.61
10-173	10	1.41	1.15	.94	.76	.73	.70

174 SERIES BARRIER TERMINAL BLOCKS

Single screw terminals mounted on 3/8" centers. Size, 3/8" w. x 1/2" h., overall. Brass binder head screws, 4-40 x 5/16". Mounting holes, 1/4" dia. Rated 1000 V rms, 5 amps max.

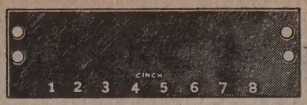
2-174	2	$0.30	$0.25	$0.20	$0.17	$0.16	$0.16
3-174	3	.40	.31	.27	.21	.20	.19
4-174	4	.51	.41	.33	.28	.27	.21
5-174	5	.58	.49	.42	.33	.31	.30
6-174	6	.72	.55	.49	.40	.33	.31
7-174	7	.80	.62	.54	.45	.42	.40
8-174	8	.92	.73	.59	.50	.48	.45
9-174	9	.99	.80	.67	.53	.51	.49
10-174	10	1.07	.87	.74	.57	.55	.53

CINCH MARKER STRIPS AND ACCESSORIES

MARKER STRIPS FOR BARRIER TERMINAL BLOCKS

140 SERIES MARKER STRIPS

For labelling terminal positions on barrier terminal blocks and insulating exposed portions of terminals from metallic mounting surface. Mounting holes correspond with those on appropriate barrier terminal block. Made of 1/32" vulcanized fiber and numbered sequentially from 1 with legible white numerals.



MS-8-140

MSX-4-540 (Installed)

MARKER STRIPS FOR 140, 140W AND 140-¾ W

Cinch No.	Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
MS-2-140	2	$0.158	$0.121	$0.109	$0.097	$0.085
MS-3-140	3	.158	.121	.109	.097	.085
MS-4-140	4	.158	.121	.109	.097	.085
MS-5-140	5	.158	.121	.109	.097	.085
MS-6-140	6	.158	.121	.109	.097	.085
MS-7-140	7	.182	.146	.121	.109	.097
MS-8-140	8	.182	.146	.121	.109	.097
MS-9-140	9	.182	.146	.121	.109	.097*
MS-10-140	10	.206	.158	.134	.121	.109*
MS-11-140	11	.206	.158	.134	.121	.109*
MS-12-140	12	.206	.158	.134	.121	.109*
MS-13-140	13	.230	.182	.158	.134	.121*
MS-14-140	14	.230	.182	.158	.134	.121*
MS-15-140	15	.230	.182	.158	.134	.121
MS-16-140	16	.255	.206	.170	.146	.134*
MS-17-140	17	.255	.206	.170	.146	.134*
MS-18-140	18	.255	.206	.170	.146	.134*
MS-19-140	19	.279	.230	.194	.158	.146*
MS-20-140	20	.279	.230	.194	.158	.146*
MS-21-140	21	.279	.230	.194	.158	.146*
MS-22-140	22	.678	.545	.460	.363	.182†
MS-23-140	23	.678	.545	.460	.363	.194†
MS-24-140	24	.823	.654	.545	.436	.218‡
MS-25-140	25	.823	.654	.545	.436	.230§

MARKER STRIPS FOR 141, 141W AND 141-¾ W

MS-2-141	2	$0.158	$0.121	$0.109	$0.097	$0.085
MS-3-141	3	.158	.121	.109	.097	.085
MS-4-141	4	.158	.121	.109	.097	.085
MS-5-141	5	.182	.146	.121	.109	.097
MS-6-141	6	.182	.146	.121	.109	.097
MS-7-141	7	.182	.146	.121	.109	.097
MS-8-141	8	.206	.158	.134	.121	.109
MS-9-141	9	.206	.158	.134	.121	.109*
MS-10-141	10	.206	.158	.134	.121	.109*
MS-11-141	11	.230	.182	.158	.134	.121*
MS-12-141	12	.230	.182	.158	.134	.121*
MS-13-141	13	.255	.206	.170	.146	.134*
MS-14-141	14	.255	.206	.170	.146	.134*
MS-15-141	15	.279	.230	.194	.158	.146*
MS-16-141	16	.279	.230	.194	.158	.146*
MS-17-141	17	.315	.242	.206	.170	.158*
MS-18-141	18	.315	.242	.206	.170	.158*
MS-19-141	19	.327	.267	.218	.182	.170*
MS-20-141	20	.327	.267	.218	.182	.170*

MARKER STRIPS FOR 142, 142W AND 142-¾ W

MS-2-142	2	$0.158	$0.121	$0.109	$0.097	$0.085
MS-3-142	3	.158	.121	.109	.097	.085
MS-4-142	4	.182	.146	.121	.109	.097
MS-5-142	5	.182	.146	.121	.109	.097
MS-6-142	6	.182	.146	.121	.109	.097
MS-7-142	7	.206	.158	.134	.121	.109
MS-8-142	8	.206	.158	.134	.121	.109
MS-9-142	9	.230	.182	.158	.134	.121*
MS-10-142	10	.255	.206	.170	.146	.134*
MS-11-142	11	.255	.206	.170	.146	.134*
MS-12-142	12	.279	.230	.194	.158	.146*
MS-13-142	13	.279	.230	.194	.158	.146*
MS-14-142	14	.315	.242	.206	.170	.158*
MS-15-142	15	.315	.242	.206	.170	.158*
MS-16-142	16	.351	.279	.242	.194	.182*
MS-17-142	17	.388	.303	.255	.206	.194*

*For Lots of: 500–999 subtract $0.011; †$0.022; ‡$0.033; §$0.044 from 250–499 price.

500 SERIES MARKER STRIPS

For labelling terminal positions on "500" series barrier terminal blocks. Made of 1/16" XP phenolic, ¼" wide. Numbered sequentially from 1 with 1/8" legible white numerals. Mounted on top of terminal block as illustrated. Mounting screws furnished.

MARKER STRIPS FOR 540

Cinch No.	Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
MSX-2-540	2	$0.206	$0.158	$0.134	$0.121	$0.109
MSX-3-540	3	.206	.158	.134	.121	.109
MSX-4-540	4	.206	.158	.134	.121	.109
MSX-5-540	5	.206	.158	.134	.121	.109
MSX-6-540	6	.206	.158	.134	.121	.109
MSX-7-540	7	.206	.158	.134	.121	.109
MSX-8-540	8	.206	.158	.134	.121	.121
MSX-9-540	9	.206	.158	.134	.121	.109
MSX-10-540	10	.206	.158	.134	.121	.109
MSX-11-540	11	.230	.182	.158	.134	.121
MSX-12-540	12	.230	.182	.158	.134	.121
MSX-13-540	13	.230	.182	.158	.134	.121
MSX-14-540	14	.230	.182	.158	.134	.121
MSX-15-540	15	.230	.182	.158	.134	.121
MSX-16-540	16	.230	.182	.158	.134	.121
MSX-17-540	17	.255	.206	.170	.146	.134
MSX-18-540	18	.255	.206	.170	.146	.134
MSX-19-540	19	.255	.206	.170	.146	.134
MSX-20-540	20	.255	.206	.170	.146	.134
MSX-21-540	21	.255	.206	.170	.146	.134
MSX-22-540	22	.279	.230	.194	.158	.146
MSX-23-540	23	.279	.230	.194	.158	.146
MSX-24-540	24	.327	.267	.218	.182	.170
MSX-25-540	25	.327	.267	.218	.182	.170
MSX-26-540	26	.327	.267	.218	.182	.170
MSX-27-540	27	.327	.267	.218	.182	.170
MSX-28-540	28	.327	.267	.218	.182	.170
MSX-29-540	29	.351	.279	.242	.194	.182
MSX-30-540	30	.351	.279	.242	.194	.182
MSX-31-540	31	.351	.279	.242	.194	.182

MARKER STRIPS FOR 541

MSX-2-541	2	$0.206	$0.158	$0.134	$0.121	$0.109
MSX-3-541	3	.206	.158	.134	.121	.109
MSX-4-541	4	.206	.158	.134	.121	.109
MSX-5-541	5	.206	.158	.134	.121	.109
MSX-6-541	6	.206	.158	.134	.121	.109
MSX-7-541	7	.206	.158	.134	.121	.109
MSX-8-541	8	.206	.158	.134	.121	.109
MSX-9-541	9	.206	.158	.134	.121	.109
MSX-10-541	10	.206	.158	.134	.121	.109
MSX-11-541	11	.230	.182	.158	.134	.121
MSX-12-541	12	.230	.182	.158	.134	.121
MSX-13-541	13	.230	.182	.158	.134	.121
MSX-14-541	14	.230	.182	.158	.134	.121
MSX-15-541	15	.230	.182	.158	.134	.121
MSX-16-541	16	.255	.206	.170	.146	.134
MSX-17-541	17	.255	.206	.170	.146	.134
MSX-18-541	18	.255	.206	.170	.146	.134
MSX-19-541	19	.255	.206	.170	.146	.134
MSX-20-541	20	.255	.206	.170	.146	.134
MSX-21-541	21	.315	.242	.206	.170	.158
MSX-22-541	22	.315	.242	.206	.170	.158
MSX-23-541	23	.327	.267	.218	.182	.170
MSX-24-541	24	.327	.267	.218	.182	.170
MSX-25-541	25	.327	.267	.218	.182	.170
MSX-26-541	26	.327	.267	.218	.182	.170
MSX-27-541	27	.327	.267	.218	.182	.170
MSX-28-541	28	.351	.279	.242	.194	.182
MSX-29-541	29	.351	.279	.242	.194	.182
MSX-30-541	30	.351	.279	.242	.194	.182

MARKER STRIPS FOR 542

MSX-2-542	2	$0.206	$0.158	$0.134	$0.121	$0.109
MSX-3-542	3	.206	.158	.134	.121	.109
MSX-4-542	4	.206	.158	.134	.121	.109
MSX-5-542	5	.206	.158	.134	.121	.109
MSX-6-542	6	.206	.158	.134	.121	.109
MSX-7-542	7	.230	.182	.158	.134	.121
MSX-8-542	8	.230	.182	.158	.134	.121
MSX-9-542	9	.230	.182	.158	.134	.121
MSX-10-542	10	.230	.182	.158	.134	.121
MSX-11-542	11	.230	.182	.158	.134	.121
MSX-12-542	12	.255	.206	.170	.146	.134
MSX-13-542	13	.255	.206	.170	.146	.134
MSX-14-542	14	.255	.206	.170	.146	.134
MSX-15-542	15	.255	.206	.170	.146	.134
MSX-16-542	16	.315	.242	.206	.170	.158
MSX-17-542	17	.315	.242	.206	.170	.158
MSX-18-542	18	.315	.242	.206	.170	.158
MSX-19-542	19	.327	.267	.218	.182	.170
MSX-20-542	20	.327	.267	.218	.182	.170
MSX-21-542	21	.327	.267	.218	.182	.170
MSX-22-542	22	.327	.267	.218	.182	.170
MSX-23-542	23	.327	.267	.218	.182	.170
MSX-24-542	24	.351	.279	.242	.194	.182
MSX-25-542	25	.351	.279	.242	.194	.182
MSX-26-542	26	.351	.279	.242	.194	.182

ACCESSORIES FOR BARRIER TERMINALS

JUMPERS

Cinch Number	For Series	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
95B	142	$0.303	$0.231	$0.196	$0.19	$0.17
140J-1	140	.157	.139	.120	.099	.079
141J	141	.157	.139	.120	.099	.079
141J-1	141	.19	.157	.139	.120	.099
142J-1	142	.19	.157	.139	.120	.099
142J-2	142	.158	.139	.120	.099	.079
540J	540	.51	.47	.39	.33	.32
541J	541	.64	.50	.41	.36	.33
542J	542	.68	.53	.47	.37	.36

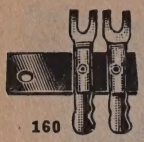
SOLDER TERMINALS

Cinch Number W-Type	Cinch Number ¾ W-Type	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
W-140†	¾ W-140	$0.176	$0.163	$0.148	$0.134	$0.118	$0.090
W-141†	¾ W-141	.176	.163	.148	.134	.118	.090
W-142†	¾ W-142	.206	.176	.163	.148	.134	.105
W-150	.....	.324	.279	.222	.206	.192	.148
W-151	.....	.455	.368	.310	.279	.250	.206
W-152	.....	.83	.66	.54	.42	.41	.38

†Change prefix **W** to **Y** for Y-type terminals; same price as W-142.

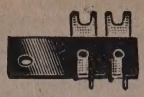
"Y" TYPE MARKER STRIPS ALSO AVAILABLE AT SLIGHT EXTRA COST

CINCH BARRIER BLOCK FANNING STRIPS


160

160A

160B


160BA

161, 162

Convenient means for rapidly connecting or disconnecting wiring from barrier terminal blocks. Facilitate cable or harness wiring and minimize the possibility of subsequent wiring errors. Available in both straight and angle types. Black XP phenolic mount, 3/32" thick x 1/2" wide, is supplied with hole in either right or left side; secures cable with lacing twine. For larger sizes, use of a cable clamp is recommended. Terminals are .032" cadmium-plated brass. **All 160 Series** fit barrier block 140 Series, 3/4" terminal centers. **Series 162** fit barrier block 142 Series, 9/16" terminal centers; 5/8" wide. **Series 161** fit barrier block 141 Series, 7/16" terminal centers.

STRAIGHT TYPE—160 SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-499
2-160-*	2	$0.39	$0.32	$0.28	$0.24	$0.22
3-160-*	3	.48	.39	.33	.28	.25
4-160-*	4	.59	.48	.40	.33	.32
5-160-*	5	.68	.57	.48	.37	.36
6-160-*	6	.79	.63	.53	.40	.39
7-160-*	7	.90	.72	.59	.48	.47
8-160-*	8	.97	.79	.65	.54	.52
9-160-*	9	1.13	.90	.77	.59	.58
10-160-*	10	1.24	1.01	.84	.65	.60
11-160-*	11	1.38	1.07	.92	.73	.68
12-160-*	12	1.52	1.20	1.03	.83	.79
13-160-*	13	1.65	1.34	1.13	.90	.85
14-160-*	14	1.74	1.39	1.17	.93	.88
15-160-*	15	1.81	1.45	1.20	.97	.93
16-160-*	16	1.97	1.57	1.34	1.06	1.01
17-160-*	17	2.03	1.61	1.38	1.07	1.05
18-160-*	18	2.12	1.68	1.42	1.14	1.07
19-160-*	19	2.24	1.78	1.51	1.19	1.16
20-160-*	20	2.33	1.86	1.57	1.24	1.18
21-160-*	21	2.45	1.97	1.64	1.29	1.24

ANGLE TYPE—160A SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-160A-*	2	$0.48	$0.39	$0.33	$0.28	$0.25
3-160A-*	3	.59	.48	.40	.33	.32
4-160A-*	4	.79	.63	.53	.40	.39
5-160A-*	5	.93	.76	.64	.51	—
6-160A-*	6	1.13	.90	.77	.59	.58
7-160A-*	7	1.24	1.01	.84	.65	.64
8-160A-*	8	1.52	1.20	1.03	.83	.79
9-160A-*	9	1.68	1.38	1.14	.90	.85
10-160A-*	10	1.81	1.45	1.20	.97	.93
11-160A-*	11	2.03	1.61	1.38	1.07	1.05
12-160A-*	12	2.12	1.68	1.42	1.14	1.07
13-160A-*	13	2.33	1.86	1.57	1.24	1.18
14-160A-*	14	2.52	2.03	1.72	1.38	1.29
15-160A-*	15	2.71	2.16	1.79	1.43	1.38
16-160A-*	16	2.85	2.27	1.93	1.53	1.45
17-160A-*	17	3.02	2.42	2.03	1.61	1.53
18-160A-*	18	3.25	2.59	2.16	1.74	1.64
19-160A-*	19	3.45	2.77	2.30	1.85	1.74
20-160A-*	20	3.57	2.85	2.39	1.91	1.80
21-160A-*	21	3.72	2.99	2.51	2.00	1.91

STRAIGHT TYPE—160B SERIES

2-160B-*	2	$0.48	$0.39	$0.33	$0.28	$0.25
3-160B-*	3	.59	.48	.40	.33	.32
4-160B-*	4	.79	.63	.53	.40	.39
5-160B-*	5	.93	.76	.64	.51	.48
6-160B-*	6	1.13	.90	.77	.59	.58
7-160B-*	7	1.24	1.01	.84	.65	.64
8-160B-*	8	1.52	1.20	1.03	.83	.79
9-160B-*	9	1.68	1.38	1.14	.90	.85
10-160B-*	10	1.81	1.45	1.20	.97	.93
11-160B-*	11	2.03	1.61	1.38	1.07	1.05
12-160B-*	12	2.12	1.68	1.42	1.14	1.07
13-160B-*	13	2.33	1.86	1.57	1.24	1.18
14-160B-*	14	2.52	2.03	1.72	1.38	1.29
15-160B-*	15	2.71	2.16	1.79	1.43	1.38
16-160B-*	16	2.85	2.27	1.93	1.53	1.45
17-160B-*	17	3.02	2.42	2.03	1.61	1.53
18-160B-*	18	3.25	2.59	2.16	1.74	1.64
19-160B-*	19	3.45	2.77	2.30	1.85	1.74
20-160B-*	20	3.57	2.85	2.39	1.91	1.80
21-160B-*	21	3.72	2.99	2.51	2.00	1.91

ANGLE TYPE—160BA SERIES

2-160BA-*	2	$0.48	$0.39	$0.33	$0.28	$0.25
3-160BA-*	3	.59	.48	.40	.33	.32
4-160BA-*	4	.79	.63	.53	.40	.39
5-160BA-*	5	.93	.76	.64	.51	.48
6-160BA-*	6	1.13	.90	.77	.59	.58
7-160BA-*	7	1.24	1.01	.84	.65	.64
8-160BA-*	8	1.52	1.20	1.03	.83	.79
9-160BA-*	9	1.68	1.38	1.14	.90	.85
10-160BA-*	10	1.81	1.45	1.20	.97	.93
11-160BA-*	11	2.03	1.61	1.38	1.07	1.05
12-160BA-*	12	2.12	1.68	1.42	1.14	1.07
13-160BA-*	13	2.33	1.86	1.57	1.24	1.18
14-160BA-*	14	2.52	2.03	1.72	1.38	1.29
15-160BA-*	15	2.71	2.16	1.79	1.43	1.38
16-160BA-*	16	2.85	2.27	1.93	1.53	1.45
17-160BA-*	17	3.02	2.42	2.03	1.61	1.53
18-160BA-*	18	3.25	2.59	2.16	1.74	1.64
19-160BA-*	19	3.45	2.77	2.30	1.85	1.74
20-160BA-*	20	3.57	2.85	2.39	1.91	1.80
21-160BA-*	21	3.72	2.99	2.51	2.00	1.91

STRAIGHT TYPE—161 SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-161-*	2	$0.41	$0.36	$0.30	$0.25	$0.24
3-161-*	3	.54	.41	.36	.30	.28
4-161-*	4	.59	.48	.40	.33	.32
5-161-*	5	.72	.58	.51	.39	.37
6-161-*	6	.83	.65	.57	.41	.40
7-161-*	7	.93	.77	.64	.51	.48
8-161-*	8	1.03	.83	.68	.58	.57
9-161-*	9	1.13	.90	.77	.59	.58
10-161-*	10	1.26	1.03	.85	.68	.64
11-161-*	11	1.43	1.17	.97	.79	.73
12-161-*	12	1.57	1.25	1.06	.84	.81
13-161-*	13	1.68	1.38	1.14	.90	.87
14-161-*	14	1.78	1.42	1.19	.94	.92
15-161-*	15	1.86	1.46	1.24	1.01	.94
16-161-*	16	1.98	1.60	1.37	1.06	1.02
17-161-*	17	2.05	1.65	1.39	1.09	1.06
18-161-*	18	2.24	1.78	1.46	1.18	1.09
19-161-*	19	2.27	1.81	1.52	1.20	1.17
20-161-*	20	2.40	1.93	1.60	1.26	1.20

ANGLE TYPE—161A SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-161A-*	2	$0.48	$0.39	$0.33	$0.28	$0.25
3-161A-*	3	.59	.48	.40	.33	.32
4-161A-*	4	.79	.63	.53	.40	.39
5-161A-*	5	.93	.76	.64	.51	.48
6-161A-*	6	1.13	.90	.77	.59	.58
7-161A-*	7	1.24	1.01	.84	.65	.64
8-161A-*	8	1.52	1.20	1.03	.83	.79
9-161A-*	9	1.68	1.38	1.14	.90	.85
10-161A-*	10	1.81	1.45	1.20	.97	.93
11-161A-*	11	2.03	1.61	1.38	1.07	1.05
12-161A-*	12	2.12	1.68	1.42	1.14	1.07
13-161A-*	13	2.33	1.86	1.57	1.24	1.18
14-161A-*	14	2.52	2.03	1.72	1.38	1.29
15-161A-*	15	2.71	2.16	1.79	1.43	1.38
16-161A-*	16	2.85	2.27	1.93	1.53	1.45
17-161A-*	17	3.02	2.42	2.03	1.61	1.53
18-161A-*	18	3.25	2.59	2.16	1.74	1.64
19-161A-*	19	3.45	2.77	2.30	1.85	1.74
20-161A-*	20	3.57	2.85	2.66	1.91	1.80

STRAIGHT TYPE—162 SERIES

2-162-*	2	$0.48	$0.39	$0.33	$0.28	$0.25
3-162-*	3	.57	.47	.37	.32	.30
4-162-*	4	.68	.57	.48	.37	.36
5-162-*	5	.79	.63	.53	.40	.39
6-162-*	6	.90	.79	.65	.54	.52
7-162-*	7	.91	.79	.65	.54	.51
8-162-*	8	1.13	.90	.77	.59	.58
9-162-*	9	1.19	.94	.79	.64	.63
10-162-*	10	1.34	1.06	.90	.72	.68
11-162-*	11	1.46	1.18	1.01	.81	.77
12-162-*	12	1.65	1.34	1.13	.90	.85
13-162-*	13	1.74	1.39	1.17	.93	.88
14-162-*	14	1.81	1.45	1.20	.97	.93
15-162-*	15	1.94	1.57	1.29	1.05	1.02
16-162-*	16	2.03	1.61	1.38	1.07	1.05
17-162-*	17	2.12	1.68	1.42	1.14	1.07

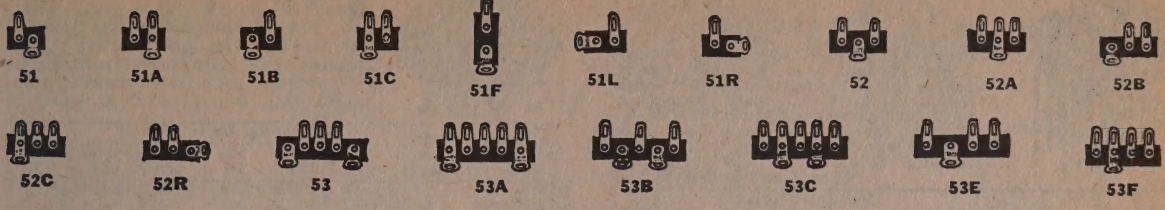
ANGLE TYPE—162A SERIES

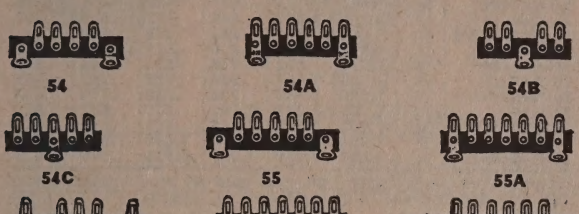
2-162A-*	2	$0.57	$0.47	$0.37	$0.32	$0.30
3-162A-*	3	.68	.57	.54	.37	.36
4-162A-*	4	.90	.72	.59	.48	.47
5-162A-*	5	1.03	.83	.68	.57	.54
6-162A-*	6	1.19	.94	.81	.65	.61
7-162A-*	7	1.34	1.06	.90	.72	.66
8-162A-*	8	1.65	1.41	1.13	.90	.84
9-162A-*	9	1.78	1.42	1.19	.94	.92
10-162A-*	10	1.94	1.57	1.29	1.05	1.01
11-162A-*	11	2.12	1.68	1.42	1.14	1.07
12-162A-*	12	2.33	1.86	1.57	1.24	1.18
13-162A-*	13	2.47	1.98	1.65	1.37	1.25
14-162A-*	14	2.60	2.06	1.74	1.40	1.37
15-162A-*	15	2.77	2.24	1.86	1.46	1.41
16-162A-*	16	2.99	2.39	2.00	1.60	1.52
17-162A-*	17	3.14	2.52	2.12	1.68	1.60

*Add suffix **L** for cable clamp hole on left side (e.g., 17-160-**L**); add suffix **R** for cable clamp hole on right side (e.g., 17-160-**R**).

CINCH TERMINAL STRIPS, CLAMPS, SOCKETS

LUG-TYPE TERMINAL STRIPS

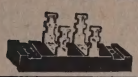




These terminal strips are handy for neatly supporting resistors, capacitors, etc. in circuit wiring. Cadmium-plated steel lugs are spaced on 3/8" centers with 0.140" dia. mounting holes. Chocolate-colored phenolic is used. Strips are 1/16" thick and 3/8" wide.

Cinch No.	Mtg. Ctrs.	Net Ea., Lots of 1-24	Net Ea., Lots of 25-49*	Cinch No.	Mtg. Ctrs.	Net Ea., Lots of 1-24	Net Ea., Lots of 25-49*
51	.....	$0.129	$0.109	53C	3/4"	$0.157	$0.135
51A	.....	.129	.109	53E	.....	.137	.117
51B	.....	.130	.110	53F	.....	.139	.119
51C	.....	.129	.109	54	1 1/8"	.177	.152
51F	.....	.154	.132	54A	1 1/4"	.180	.155
51L	.....	.154	.132	54B	.....	.154	.132
51R	.....	.154	.132	54C	.....	.157	.135
52	.....	.146	.123	55	2 1/4"	.183	.158
52A	.....	.151	.128	55A	2 1/4"	.185	.160
52B	.....	.146	.123	55B	1 1/2"	.183	.158
52C	.....	.151	.128	55C	1 1/2"	.185	.160
52R	.....	.154	.132	56	2 5/8"	.189	.164
53	1 1/2"	.154	.132	56A	2 5/8"	.191	.166
53A	1 1/2"	.157	.135	56B	1 7/8"	.189	.164
53B	3/4"	.154	.132	56C	1 7/8"	.191	.166

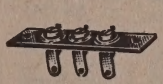
170 SERIES SOLDER TERMINAL STRIPS



Heavy solder terminals are made of .032" brass, hot solder coated; mounted on 3/8" centers. Black molded phenolic. Size, 5/16" w. x 1/4" thick. Mounting holes, 3/8" from center of end terminals.

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-170	1	$0.33	$0.29	$0.23	$0.20	$0.19	$0.19
2-170	2	.39	.33	.30	.26	.24	.23
3-170	3	.54	.42	.35	.31	.30	.29
4-170	4	.62	.51	.39	.33	.32	.31
5-170	5	.69	.57	.48	.36	.35	.34
6-170	6	.78	.61	.53	.41	.38	.35
7-170	7	.88	.69	.59	.48	.44	.43
8-170	8	.90	.73	.61	.52	.49	.44
9-170	9	1.05	.86	.69	.57	.56	.51
10-170	10	1.15	.90	.76	.62	.59	.57

2000 Series



Screw Strips

SERIES 2000 TERMINAL STRIPS

Compact, sturdy terminal strips for wiring, etc. Phenolic insulation; cadmium-plated steel brackets with .140" dia. mounting holes centered 5/32" from bracket end. Terminals are tin-plated .019" brass spaced on 5/16" centers; last 2 digits of no. indicate no. of terminals (e.g., 2008 has 8 terminals).

Cinch No.	Mtg. Ctrs.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2002	1"	$0.17	$0.16	$0.15	$0.12	$0.11
2003	1 5/16"	.19	.17	.16	.15	.12
2004	1 5/8"	.20	.19	.17	.16	.15
2005	1 15/16"	.20	.19	.17	.16	.15
2006	2 1/4"	.22	.20	.18	.17	.16
2007	2 9/16"	.22	.20	.18	.17	.16
2008	2 7/8"	.26	.21	.19	.18	.17
2009	3 3/16"	.29	.22	.20	.19	.18
2010	3 1/2"	.29	.22	.20	.19	.18
2011	3 13/16"	.31	.24	.22	.20	.19
2012	4 1/8"	.31	.24	.22	.20	.19
2013	4 7/16"	.34	.30	.24	.21	.20

SCREW TYPE TERMINAL STRIPS

Ideal design for chassis or breadboard layouts. Strips with 1 to 6 lugs are 1/16" thick phenolic; those with 7 to 10 terminals are 3/32" thick. Ends of screws are captivated to prevent removal; made of cadmium-plated steel. Terminals are cadmium-plated brass, spaced on 7/16" centers. Mounting holes .136" dia.

Cinch No.*	Mtg. Ctrs.	Net Ea., Lots 1-24	25-49*	Cinch No.*	Mtg. Ctrs.	Net Ea., Lots 1-24	25-49*
17-1	7/8"	$0.155	$0.136	17-6	3 1/16"	$0.338	$0.320
17-2	1 5/16"	.172	.155	17-7	3 1/2"	.473	.371
17-3	1 3/4"	.205	.172	17-8	3 15/16"	.52	.43
17-4	2 3/16"	.273	.222	17-9	4 3/8"	.65	.49
17-5	2 5/8"	.320	.248	17-10	4 13/16"	.77	.58

*Suffix indicates no. of terminals; e.g., 17-2 has 2 terminals.

★LARGER QUANTITY PRICES ON REQUEST.

TO-5 OR TO-18 LOW PROFILE TRANSISTOR SOCKETS

Mount directly to PC board with snug fit to prevent bleeding of solder and flux to opposite board surface. Chamfered socket holes minimize lead bending during insertion. Contact ends are watertight, formed so that solder and fluxes cannot enter barrelled contact to obstruct lead entry. TO-18 directly accepts TO-5. TO-5 accepts TO-18 if leads are left full length or formed to match TO-5 lead centers. Insulator molded from 20% glass filled nylon in black, natural, or green. Contacts are of beryllium copper with etched tin, bright finish. Maximum pin dia., 0.019". Max. pin depth, 0.200" ±0.010". Max. insertion force, 5 ounces; withdrawal force, 1/4 ounce at 3 and 100 cycles. Voltage ratings at sea level, 1500 AC rms, 2000 VDC. Current rating, 2.5 amperes. Contact resistance, 0.005 ohms. Insulation resistance, 100,000 megs. Low profile, only .130" above PC board surface.

Cinch No.	Color	•Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
3-LPS-B	Black	$0.249	$0.200	$0.167	$0.134	$0.127	$0.121
3-LPS-N	Natural	.249	.200	.167	.134	.127	.121
3-LPS-G	Green	.249	.200	.167	.134	.127	.121

• DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR SOCKETS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

CABLE CLAMPS FOR FANNING STRIPS

CC-161 Series

Designed for use with Series 160, 161 and 162 fanning strips and supplied in six sizes. Made of nickel-plated brass with 6-32 round-head screw. Supplied unassembled.

C-J Number	I.D.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
CC-161-4	1/4"	$0.45	$0.36	$0.29	$0.27	$0.26
CC-161-6	3/8"	.54	.45	.38	.29	.27
CC-161-8	1/2"	.67	.52	.45	.38	.36
CC-161-10	5/8"	.73	.59	.52	.43	.42
CC-161-12	3/4"	.84	.68	.58	.45	.44
CC-161-14	7/8"	.89	.73	.62	.51	.47

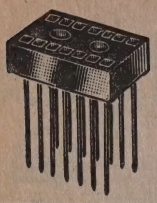
QUICK-CLAMP® TERMINALS

Simplifies engaging of wires to barrier blocks. Set includes two mating clamps and one screw. Part No. QC-1 for use with Barrier Block Series 141, 541; accommodates wire gauge 14 thru 22. Part No. QC-2 for use with Barrier Block Series 142, 542; accommodates wire gauge 8 thru 16. Standard package, quantity 200.

Cinch No.	Screw Size	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
QC-1	6-32 x 5/16"	$0.22	$0.17	$0.16	$0.15	$0.14
QC-2	8-32 x 3/8"	.22	.17	.16	.15	.14

CINCH SOCKETS FOR INTEGRATED CIRCUITS, PRINTED CIRCUITS, TRANSISTORS

LOW PROFILE WIRE WRAP•



DIP SOCKETS

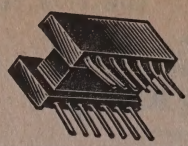
Provides higher board packing density. Accept standard 14 or 16 contacts size IC packages with flat or rolled leads. Contact resistance, 0.006 ohm max. Contacts of solid .025″ phosphor bronze. Wire Wrap, .670″ lg., enough for 3 wraps. Glass nylon insulation withstands temp. from −65° C to +125° C.

•Reg. Gardner-Denver TM.

Cinch No.	No. of Contacts	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
14-W-DIP*	14‡	$0.96	$0.78	$0.65	$0.52	$0.50	$0.48
14-W-DIP-1†	14‡	.96	.78	.65	.52	.50	.48
14-W-DIP-2*	14§	1.25	.99	.83	.66	.63	.61
14-W-DIP-3†	14§	1.25	.99	.83	.66	.63	.61
16-W-DIP*	16‡	1.18	.94	.79	.63	.59	.56
16-W-DIP-1†	16‡	1.18	.94	.79	.63	.59	.56
16-W-DIP-2*	16§	1.45	1.18	.98	.79	.75	.70
16-W-DIP-3†	16§	1.45	1.18	.98	.79	.75	.70

Insulator: *Black glass nylon; †white glass nylon. Contacts: ‡Electro-tin-plated; §gold plated.

DUAL-INLINE SOCKETS

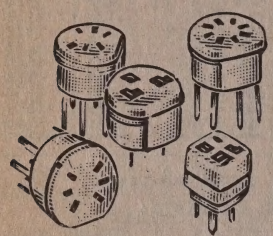


Accepts standard 14, 16 or 24 dual-inline pkg., flat or round leads. Used with PC boards designed for direct insertion of DIP. Insulator of GP black phenolic with electro-tin beryllium copper plated contacts, withstands temp. from −65° C to +150° C.

Cinch No.	No. Contacts	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
14-DIP	14	$0.967	$0.774	$0.645	$0.517	$0.491	$0.465
14-N-DIP†	14	.967	.774	.645	.517	.491	.465
14-DIP-1*	14	1.28	1.007	.841	.671	.640	.607
14-N-DIP-1*†	14	1.28	1.007	.841	.671	.640	.....
16-DIP	16	1.073	.858	.716	.573	.544	.516
16-N-DIP†	16	1.073	.858	.716	.573	.544	.516
16-DIP-1*	16	1.385	1.107	.924	.738	.702	.665
16-N-DIP-1*†	16	1.385	1.107	.924	.738	.702	.665
24-DIP	24	1.605	1.292	1.082	.873	.832	.81
24-N-DIP†	24	1.605	1.292	1.082	.873	.832	.81
24-DIP-1*	24	1.897	1.519	1.278	1.030	.979	.929
24-N-DIP-1*†	24	1.897	1.519	1.278	1.030	.979	.929

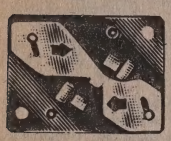
*Insulator of diallyl phthalate with gold plated contacts. †With narrow (square) leads to fit small-hole PC boards.

TO-5 AND TO-18 CASE SOCKETS

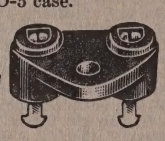


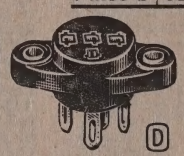
Rated at 1.0 amperes and 750 VAC (1020 VAC for SDG material). Insulation resistance is 1000 megohms minimum (50,000 megohms for SDG). Contact resistance, 0.05 ohms maximum. All units have dip solder terminations for PC board insertion. Contact material is phosphor bronze; (suffix MSS); beryllium copper, copper flash plus gold plate (suffix ICS). TO-18 case, 3-MSS-2, 4-MSS-2; all others TO-5 case.

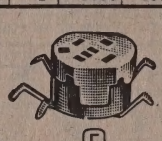
Cinch No.	Ins. Mat.	Contacts	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
3-MSS	MFE	3	$0.238	$0.191	$0.159	$0.128	$0.121	$0.116
4-MSS	MFE	4	.491	.393	.327	.262	.249	.237
6-MSS	MFE	6	.676	.541	.451	.361	.344	.325
6-MSS-1	FEP	6	1.41	1.128	.941	.753	.716	.678
8-MSS	MFE	8	.811	.649	.541	.433	.412	.391
6-ICS	SDG	6	.69	.56	.48	.41	.37	.....
8-ICS	SDG	8	.83	.67	.57	.46	.45	.....
10-ICS	SDG	10	.93	.73	.62	.51	.48	.....
3-MSS-2	MFE	3	.339	.272	.226	.181	.172	.164
4-MSS-2	MFE	4	.466	.373	.311	.249	.237	.224


A

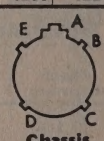
B


C


D


E

Contact Layout



Chassis Layout

POWER TRANSISTOR SOCKETS

LAMINATED TYPE

Cinch No. 2TS-1 (Fig. A)—Top and bottom plates are natural XP phenolic, vacuum wax impregnated. Contacts are of brass, cadmium plated. Formed thread for 6-20 screw. Has .104/.110″ dia. hole in CR steel plate. Provides easy attachment to a heat sink. Net Each, Lots of 1-24.....**$0.153**; 25-49.....**$0.128**
Lots of 50-99. **$0.117**; 100-249. **$0.102**; 250-499.. **.092**

Cinch No. 2TS-2 (Fig. B)—Identical with above except equipped with integral eyelets for easy assembly to chassis.
Net Each, Lots of 1-24.....**$0.153**; 25-49.....**$0.128**
Lots of 50-99. **$0.117**; 100-249. **$0.102**; 250-499.. **.092**

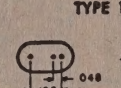
MODEL 2TS-3 MOLDED TYPE (FIG. C)

Molded power transistor socket. Casting is molded of general purpose phenolic. Contacts are phosphor bronze, cadmium plated. Mounting holes are .098″ dia.; mounting centers are .425/.435″.
Net Each, Lots of 1-24.....**$0.153**; 25-49.....**$0.128**
Lots of 50-99. **$0.117**; 100-249. **$0.102**; 250-499.. **.092**

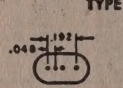
MODEL 2TS-4 GENERAL PURPOSE (FIG. D)

This new transistor socket was originally designed for an all-transistor television set; however, its future applications are many. This socket may be used in industrial communications, test equipment, ham gear, etc. Socket has a triangular base layout with 0.2″ by 0.1″ (JEDEC-30) contact centers, as well as three contacts inline (.048″ by .192″ contact centers). Casting is molded of general purpose phenolic; contacts are phosphor bronze, cadmium plated. May be used with the following EIA base designations: E3-14, E3-15, E3-25, E3-32, E3-38, E3-39, E3-42, E3-43, E3-44, E3-51, E3-53, E4-13, E4-24, E4-31, E4-43, E4-52, ET-103-D.
Cinch No. 2TS-4—Net, Lots of 1-24. **$0.204**; 25-49. **$0.167**
Lots of 50-99. **$0.140**; 100-249. **$0.128**; 250-499. **.117**

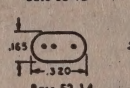
TYPE 1



TYPE 2

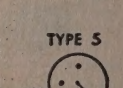


TYPE 4



TYPE 3

TYPE 5

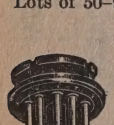


UNIVERSAL TRANSISTOR SOCKETS (FIG. E)

Universal transistor socket that can be used with all transistor bases shown in illustration above. Casting is of mica-filled phenolic (MFE). Contacts are beryllium copper and are gold plated. Contacts may be used with one or two-sided 1/16″ PC boards.

Cinch No.	Base Types	Tabs Used (See Diag.)	Cont. Pos. Used	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
7UTS	All	A-E	1, 3, 4, 7	$1.21	$0.97	$0.81	$0.65	$0.62
7UTS-1	1, 3	C, D, E	1, 3, 4, 7	.69	.56	.48	.41	.37
7UTS-3	3	C, D, E	1, 4, 7	.64	.52	.45	.33	.32
7UTS-4	4	A-E	1, 4, 5, 6, 7	.95	.76	.64	.52	.49
7UTS-5	5	B, D, E	1, 6, 7	.64	.52	.45	.33	.32
7UTS-6	1, 3	C, D, E	1, 3, 4, 7	.69	.56	.48	.41	.37

MOLDED CONNECTOR PLUGS AND SOCKETS


A

B

C

D

MODEL 8PB 8 CONTACT PLUG (FIG. A)

Molded from high dielectric black phenolic. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on 1/16″ chassis using No. 8RO retaining ring, or can be used with No. 16F cap. Will fit any standard octal socket.
Cinch No. 8PB—Net Ea., Lots of 1-24..**$0.36**; 25-49..**$0.30**
Lots of 50-99..**$0.26**; 100-249..**$0.22**; 250-499.. **.21**

★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR SOCKETS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK WITH US FOR THE LATEST QUOTATIONS.

MODEL 11PB 11 CONTACT PLUG (FIG. B)

Molded from high dielectric black phenolic. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on 1/16″ chassis using No. 8RO retaining ring. Can be used with No. 16F cap. Will fit No. 11RB socket.
Cinch No. 11PB—Net Ea., Lots of 1-24. **$0.47**; 25-49. **$0.33**
Lots of 50-99..**$0.30**; 100-249..**$0.26**; 250-499.. **.24**

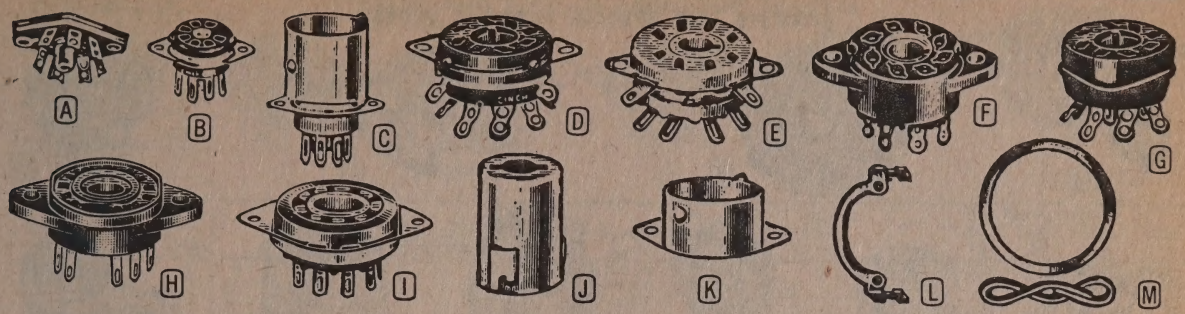
MODEL 11RB 11 CONTACT SOCKET (FIG. C)

Molded from high dielectric black phenolic. Solder coated brass contacts. Mounts on 1/16″ chassis using No. 8RO retaining ring. Can be used with No. 16F cap. Mates with No. 11PB plug.
Cinch No. 11RB—Net Ea., Lots of 1-24. **$0.45**; 25-49. **$0.36**
Lots of 50-99..**$0.30**; 100-249..**$0.25**; 250-499.. **.24**

MODEL 16F PLUG CAP (FIG. D)

Cadmium plated steel plug cap for snapping on 8 or 11 prong sockets grooved for 1/4″ chassis. Screwdriver slot at bottom to facilitate removal. Rubber grommet has 15/64″ dia. hole.
Cinch No. 16F—Net Ea., Lots of 1-24..**$1.27**; 25-49..**$1.08**
Lots of 50-99...**$0.85**; 100-249...**$0.69**; 250-499.. **.63**

CINCH TUBE SOCKETS AND ACCESSORIES



SOCKETS FOR 7-, 8-, 9- AND 12-PIN TUBES

Cinch No.	Fig.	No. of Contacts and Tube Group	Description	Construction Materials: Insulator*	Construction Materials: Contacts†	Top or Bottom Mount	Mtg. Ctrs.	MIL-S-12883A No.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
7W2A	A	7 miniature	Wafer	A	A	Bottom	7/8"	.....	$0.226	$0.194	$0.180	$0.165	$0.150
7WL2	A	7 miniature	Wafer	A	A	Bottom	1"	.....	.194	.180	.165	.150	.135
7WL4	A	7 miniature	Wafer	A	A	Both	15/16"	.....	.344	.256	.209	.194	.180
7EB	B	7 miniature	Saddle	B	A	Bottom	7/8"	.....	.190	.158	.143	.127	.113
7EC	B	7 miniature	Saddle	D	A	Bottom	7/8"	.....	.713	.586	.501	.371	.358
7EM	B	7 miniature	Saddle	C	A	Bottom	7/8"	.....	.222	.176	.158	.143	.127
7AB1	B	7 miniature	Saddle	B	A	Top	7/8"	.....	.222	.176	.158	.143	.127
7AM1	B	7 miniature	Saddle	C	A	Top	7/8"	.....	.270	.206	.176	.158	.143
7JM-3	B	7 miniature	Saddle	C	B	Bottom	7/8"	TS102P03	.358	.301	.238	.206	.190
7JC-3	B	7 miniature	Saddle	D	B	Bottom	7/8"	TS102C03	.586	.487	.385	.314	.301
7JMN-1	B	7 miniature	Saddle	C	B	Top	7/8"	TS102P02	.358	.301	.238	.206	.190
7JMN-2	B	7 miniature	Saddle	C	B	Top	7/8"	TS102P02	.358	.301	.238	.206	.190
7JCN-1	B	7 miniature	Saddle	D	B	Top	7/8"	TS102C02	.586	.487	.385	.314	.301
7JCN-2	B	7 miniature	Saddle	D	B	Top	7/8"	TS102C02	.586	.487	.385	.314	.301
7JM-2	C	7 miniature	Shield base	C	B	Top	7/8"	TS102P01	.457	.344	.301	.245	.229
7XB1	C	7 miniature	Shield base	B	A	Top	7/8"	.....	.286	.216	.186	.172	.158
7XM1	C	7 miniature	Shield base	C	A	Top	7/8"	.....	.329	.272	.229	.201	.186
7XC	C	7 miniature	Shield base	D	A	Top	7/8"	.....	.70	.58	.49	.37	.36
7JC-2	C	7 miniature	Shield base	D	B	Top	7/8"	TS102C01	.613	.501	.399	.329	.314
8AB	D	8 octal	Saddle	F	A	Bottom	15/16"	.....	.217	.172	.156	.141	.125
8AM	D	8 octal	Saddle	C	A	Bottom	15/16"	.....	.28	.21	.20	.19	.18
8EB	E	8 octal	Saddle	E	A	Bottom	1 1/2"	.....	.217	.172	.156	.141	.125
8EM	E	8 octal	Saddle	C	A	Bottom	1 1/2"	.....	.28	.21	.20	.19	.18
8XM	F	8 octal	All-molded	C	A	Both	15/16"	.....	.217	.172	.156	.141	.125
8XB	F	8 octal	All-molded	B	A	Both	15/16"	.....	.186	.156	.141	.125	.109
8R1	G	8 octal	Ring mount‡	E	A	Top	1/16" #	.....	.33	.28	.24	.21	.20
8R2	G	8 octal	Ring mount‡	E	A	Top	1/8" #	.....	.54	.44	.36	.31	.30
8R3	G	8 octal	Ring mount‡	C	A	Top	1/16" #	.....	.39	.33	.30	.24	.22
8R4	G	8 octal	Ring mount‡	E	A	Top	3/32" #	.....	.54	.44	.36	.31	.30
8R5	G	8 octal	Ring mount‡	C	A	Top	3/32" #	.....	.73	.60	.51	.39	.37
8R6	G	8 octal	Ring mount‡	C	A	Top	1/8" #	.....	.73	.60	.51	.39	.37
8CS-B	H	8 compactron	All-molded	E	A	Both	15/16"	.....	.63	.50	.43	.33	.32
8CS-M	H	8 compactron	All-molded	C	A	Both	15/16"	.....	.66	.56	.47	.38	.34
9NS-B	I	9 novar	Saddle	E	A	Bottom	1 1/2"	.....	.23	.19	.17	.16	.15
9NS-M	I	9 novar	Saddle	C	A	Bottom	1 1/2"	.....	.26	.21	.19	.17	.16
9W1	A	9 noval	Wafer	A	A	Bottom	1 1/8"	.....	.29	.22	.21	.20	.19
9W2	A	9 noval	Wafer	A	A	Both	1 3/16"	.....	.29	.22	.21	.20	.19
9AB	B	9 noval	Saddle	B	A	Top	1 1/8"	.....	.217	.172	.156	.141	.125
9AM	B	9 noval	Saddle	C	A	Top	1 1/8"	.....	.28	.21	.20	.19	.18
9EB	B	9 noval	Saddle	B	A	Bottom	1 1/8"	.....	.217	.172	.156	.141	.125
9EM	B	9 noval	Saddle	C	A	Bottom	1 1/8"	.....	.28	.21	.20	.19	.18
9JM-3	B	9 noval	Saddle	C	B	Bottom	1 1/8"	TS103P03	.47	.35	.31	.25	.24
9JM-4	B	9 noval	Saddle	C	B	Bottom	1 1/8"	TS103P03	.47	.35	.31	.25	.24
9JC-3	B	9 noval	Saddle	D	B	Bottom	1 1/8"	TS103C03	.68	.57	.49	.36	.35
9JCN-1	B	9 noval	Saddle	D	B	Top	1 1/8"	TS103C02	.68	.57	.49	.36	.35
9JMN-1	B	9 noval	Saddle	C	B	Top	1 1/8"	TS103P02	.47	.35	.31	.25	.24
9JMN-2	B	9 noval	Saddle	C	B	Top	1 1/8"	TS103P02	.47	.35	.31	.25	.24
9XB	C	9 noval	Shield base	B	A	Top	1 1/8"	.....	.33	.28	.24	.21	.20
9XM	C	9 noval	Shield base	C	A	Top	1 1/8"	.....	.36	.31	.25	.22	.21
9XC	C	9 noval	Shield base	D	A	Top	1 1/8"	.....	.57	.44	.36	.31	.30
9JM-2	C	9 noval	Shield base	C	B	Top	1 1/8"	TS103P01	.49	.37	.32	.28	.25
9JC-2	C	9 noval	Shield base	D	B	Top	1 1/8"	TS103C01	.65	.53	.44	.35	.33
12CS-B	H	12 compactron	All-molded	E	A	Both	15/16"	.....	.23	.20	.17	.16	.15
12CS-M	H	12 compactron	All-molded	C	A	Both	15/16"	.....	.85	.67	.57	.46	.45

*Insulator material: A indicates chocolate phenolic; B, black phenolic; C, MFE plastic; D, ceramic; E, high-dielectric black phenolic (CFG); F, MAI-60 Alkyd Glass Fiber (JETEC No. 20-120). †Contact material: A indicates cadmium-plated brass; B, silver-plated phosphor bronze; C, silver-plated beryllium copper. ‡Crimped retainer ring furnished. #Max. chassis thickness.

J-SLOT TUBE SHIELDS (FIG. J)

Cinch No.	Construction Materials	Lgth.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
7S2	Steel	1 3/8"	$0.36	$0.26	$0.22	$0.21	$0.20
7S3	Steel	1 3/4"	.38	.29	.24	.22	.21
7S4	Steel	2 1/4"	.51	.41	.37	.29	.26
7SJ2-1	MIL*, brass	1 3/8"	.51	.41	.37	.29	.26
7SJ3-1	MIL*, brass	1 3/4"	.59	.42	.38	.32	.29
7SJ4-1	MIL*, brass	2 1/4"	.64	.51	.42	.37	.36
9S1	Steel	1 1/2"	.70	.55	.48	.38	.37
9S2	Steel	1 15/16"	.48	.38	.32	.26	.24
9S3	Steel	2 3/8"	.87	.70	.61	.48	.42
9SJ1-1	MIL*, brass	1 1/2"	.61	.49	.39	.36	.32
9SJ2-1	MIL*, brass	1 15/16"	.70	.55	.48	.38	.37
9SJ3-1	MIL*, brass	2 3/8"	.75	.61	.51	.39	.38

MODEL 8RO RETAINER RING (FIG. M)

A crimped retaining ring formed of .020" spring steel. Will securely anchor sockets. Standard finish is cadmium.
Cinch No. 8RO—Net Each, Lots of: 1-24. **$0.20**; 25-49. **$0.19**
Lots: 50-99... **$0.17**; 100-249... **$0.14**; 250-499... **.13**

SHIELD BASES (FIG. K)

Material: 7SB2, brass; others, steel.

Cinch No.	Dimensions, In.: H.	Mtg. Hole	Mtg. Ctrs.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
7SB1	5/8	.125 dia.	7/8	$0.226	$0.194	$0.180	$0.165	$0.150
7SB2	5/8	.125 dia.	7/8	.344	.256	.209	.194	.180
9SB1	.....	1/4 dia.	1 1/8	.29	.22	.21	.20	.19

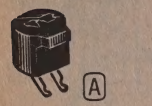
STRAP NUTS (FIG. L)

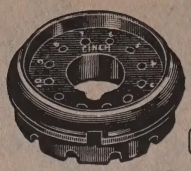
Cinch No. 7SN—Cadmium-plated brass strap nuts for use in mounting sockets with saddles or shield bases. One strap nut takes the place of two conventional type nuts. Mounting centers, 7/8". For 7-contact sockets. Ground lugs are hot-solder-dipped.
Net Ea., Lots of: 1-24. **$0.61**; 25-49. **$0.46**; 50-99.. **$0.39**
Lots: 100-249.. **$0.32**; 250-499.. **$0.29**; 500-999... **.226**

Cinch No. 9SN—Same as Model 7SN except mounting centers are 1 1/8" and are for 9-contact sockets.
Net Each, Lots of: 1-24. **$0.61**; 25-49. **$0.49**; 50-99. **$0.39**
Lots: 100-249.. **$0.36**; 250-499.. **$0.33**; 500-999.. **.26**

CINCH TUBE SOCKETS AND ACCESSORIES

SOCKETS FOR SPECIAL PURPOSE TUBES


A


B

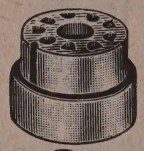
C

D

E

F

G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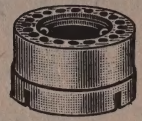

I

J

Cinch No.	Fig.	Number of Contacts and Tube Group	Type	Material: Insulator*	Material: Contacts†	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
2B2#	A	2 cetron	For CE701, CE702	A	A	$1.09	$0.86	$0.74	$0.58	$0.56
3B12	B	12 duodecal	For 10BP4, etc.	A	C	1.15	.92	.80	.61	.60
3B14#	C	14 diheptal	CRT	A	C	2.96	2.38	1.98	1.60	1.50
3M12	B	12 duodecal	For 10BP4, etc.	B	C	3.41	2.72	2.26	1.82	1.73
3M14#	C	14 diheptal	CRT	B	C	3.13	2.48	2.09	1.67	1.60
5NS	D	5 nuvistor	Crimp tab mount	B	A	.231	.179	.153	.140	.128
5NS-1	E	5 nuvistor	Saddle	B	A	.356	.268	.231	.192	.179
5NS-2	F	5 nuvistor	PC standoff	B	A	.571	.456	.381	.306	.279
5NS-3	G	5 nuvistor	Heat dissipating	B	C	.317	.254	.216	.179	.167
7-VT	H	7 vidicon	For RCA vidicon	B	B	3.24	2.58	2.16	1.73	1.66
8-VT	H	8 vidicon	For RCA vidicon	B	B	3.46	2.75	2.32	1.86	1.76
20-PM	I	20 photomulti	For RCA 6810, etc.	C	A	7.70	7.46	6.22	5.00	4.75

*Insulator material: A indicates black phenolic; B, MFE plastic; C, MAI-60 alkyd glass fiber. †Contact material: A indicates cadmium plated brass; B, silver plated phosphor bronze; C, silver plated beryllium copper. ‡Larger qty. prices on request. #Mtg. ring required

MODEL 3A1 SECOND ANODE CONNECTOR (FIG. J)

Snap over .096" dia. prong on side of diheptal tubes. Cadmium-plated brass contact surrounded by rubber insulator. Size, ¾" w. x 1 1/16" lg.
Cinch No. 3A1—Net Ea., Lots of: 1-24.. **$1.76**; 25-49.. **$1.42**
Lots: 50-99... **$1.20**; 100-249... **$0.96**; 250-499... **.92**

MOUNTING RINGS

Cinch No. 2MR—Mounting ring for No. 2B2.
Net Each, Lots of: 1-24..... **$0.142**; 25-49..... **$0.121**
Lots: 50-99. **$0.102**; 100-249. **$0.081**; 250-499.. **.062**
Cinch No. 3R11—Steel mounting ring for No. 3M111.
Net Each, Lots of: 1-24. **$1.23**; 25-49. **$0.96**; 50-99.. **$0.81**
Lots: 100-249.. **$0.65**; 250-499.. **$0.63**; 500-999.. **.51**
Cinch No. 3R14—Steel mounting ring for Nos. 3B14 and 3M14.
Net Each, Lots of: 1-24. **$1.37**; 25-49. **$1.08**; 50-99. **$0.92**
Lots: 100-249.. **$0.73**; 250-499.. **$0.71**; 500-999.. **.63**

POWER TRANSISTOR HEAT SINKS

Hard anodized aluminum insulator wafers for use with power transistors. Feature high thermal conductivity, high dielectric resistance, high abrasion resistance and high corrosion resistance.

Cinch No.	Fig.	For Transistor	Net Each, Lots of: 1-249	250-499
2W-1	L	Motorola 2N179, 2N176, 2N554	$0.95	$0.63
2W-2	M	Delco 2N174	.88	.55
2W-3	N	Texas Instruments 2N389	1.59	1.12

L

M

N

Q

O

P

SUBMINIATURE TUBE SOCKETS

Use extensively for hearing aids, radios and other electronic apparatus. Molded from mica-filled low loss phenolic with silver-plated beryllium copper contacts. No. 2H5 can be used for four prong tube or as a transistor socket.

Cinch No.	Pin	Fig.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
2H3	3	O	$0.41	$0.36	$0.31	$0.25	$0.24
2H5	5	P	.36	.30	.24	.22	.21
2H6	6	...	1.67	1.31	1.13	.90	.87
2H7	7	...	.63	.52	.41	.35	.33
8SM	8	Q	.92	.76	.63	.52	.51

PRINTED CIRCUIT TUBE SOCKETS

A

B

C

D

E

F

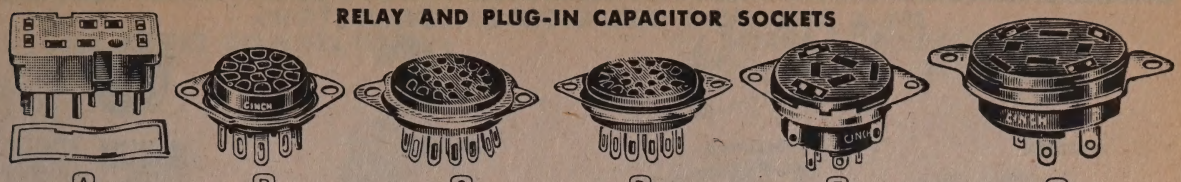
Center-shield types have special tabs to prevent the tube shields from contacting the printed wire chassis.

Cinch No.	Fig.	No. of Contacts and Tube Group	Description	Material: Insulator*	Material: Contacts†	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
7PC-B	A	7 miniature	Center shield and tabs	A	A	$0.186	$0.158	$0.143	$0.129	$0.116
7PC-B1	A	7 miniature	No shield or tabs	A	A	.158	.143	.129	.116	.102
7PC-B4	B	7 miniature	Snap in; no shield or tabs	A	A	.186	.158	.143	.129	.116
7PC-M4	B	7 miniature	Snap in; no shield or tabs	B	A	.186	.158	.143	.129	.116
7PC-B5	B	7 miniature	Snap in; center shield	A	A	.186	.158	.143	.129	.116
7PC-M5	B	7 miniature	Snap in; center shield	B	A	.186	.158	.143	.129	.116
7PC-M2	E	7 miniature	Shield base, center shield and tabs	B	B	1.50	1.19	1.01	.81	.79
9PC-B	C	9 noval	Center shield and tabs	A	A	.217	.172	.156	.141	.125
9PC-B1	C	9 noval	No shield or tabs	A	A	.217	.172	.156	.141	.125
9PC-B4	D	9 noval	Snap in; no shield or tabs	A	A	.22	.19	.18	.141	.128
9PC-M4	D	9 noval	Snap in; no shield or tabs	B	A	.22	.19	.18	.141	.128
9PC-B5	D	9 noval	Snap in; center shield	A	A	.22	.19	.18	.141	.128
9PC-M5	D	9 noval	Snap in; center shield	B	A	.22	.19	.18	.141	.128
9PC-M2	F	9 noval	Shield base, center shield and tabs	B	B	1.64	1.30	1.12	.88	.85

*Insulator material: A indicates black phenolic; B, mica-filled phenolic. †Contact material: A indicates hot solder-coated brass; B, hot tinned-phosphor bronze.

CINCH Plugs and Sockets

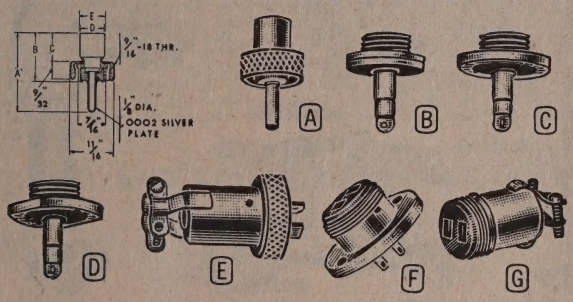
RELAY AND PLUG-IN CAPACITOR SOCKETS



Cinch No.	Relay or Cap.	Fig.	No. of Contacts and Shape	Materials: Insulator*	Materials: Contacts†	Socket Type	Top or Bottom Mount	Mtg. Ctrs. or Size	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
8RS	Relay	A	8 rectangular	A	A	Clip mt.	Top	‡	$0.69	$0.56	$0.48	$0.41	$0.37
14RS	Relay	B	14 round	A	A	Saddle	Bottom	1⅛″	1.15	.94	.80	.61	.59
14RS-2	Relay	B	14 round	A	A	Saddle	Top	1⅛″	1.15	.94	.80	.61	.59
20RS	Relay	C	20 round	A	A	Saddle	Top	1⅝″	2.89	2.33	1.93	1.56	1.49
20RS-1	Relay	D	20 round	A	A	Saddle	Bottom	1⅝″	2.89	2.33	1.93	1.56	1.49
14RS-1	Relay	D	14 round§	A	A	Saddle	Bottom	1⅛″	1.93	1.56	1.30	1.05	1.01
16RS-1	Relay	D	16 round§	A	A	Saddle	Bottom	1⅛″	2.34	1.88	1.57	1.26	1.19
16RS-2	Relay	....	16 rectangular	B	B	Top mt.	Top	1⅛″ x 1⅛″	1.35	1.09	.90	.73	.70
16RS-3	Relay	....	16 rectangular	B	C•	Top mt.	Top	1⅛″ x 1⅛″	1.63	1.31	1.10	.87	.84
28RS	Relay	....	28 rectangular	B	B	Top mt.	Top	1⅛″ x 1.960″	.75	.59	.52	.40	.38
28RS-1	Relay	....	28 rectangular	B	C•	Top mt.	Top	1⅛″ x 1.960″	1.07	.86	.73	.58	.56
2C5#	Cap.	E	3 center, 2 outer	B	B	Saddle	Bottom	1½″					
2C7#	Cap.	F	4 center, 3 outer	B	B	Saddle	Bottom	1 11/32″					

*Insulator material: A indicates low mica-filled phenolic; B, high dielectric phenolic. †Contact material: A indicates silver-plated beryllium copper; B, cadmium plated; C, gold plated. ‡Fits following relays: Advance MV-2C, AEMCO 95-3274, Brubaker K110A, Filtors P.26.A1.P.6A, G.E. D300A and G-203A, P&B SL and Ace 50-6-A (single-contact type); C-J No. 20731 clip included. §Same as No. 20RS-1 with contacts removed. #No. 2C5 for 1″ and No. 2C7 for 1⅝″ Mallory and Magnavox Type FP capacitors; four ground lugs on saddle. **•Prices for sockets with gold plated terminals will vary. Check us for latest quotations.**

AUDIO PLUGS AND SOCKETS



SERIES 101 SOCKETS

Brass base, bright nickel finish. Brass contact is silver plated. Insulation is of low loss natural color XXX phenolic. Phenolic of No. S-101-D is recessed in the base. Two sides of base of No. S-101-D Mod are milled. Mounting Holes: No. S-101, #41 drill on 1 1/16″ centers; all others, #30 drill on 1 3/16″ centers.

Cinch Number	Fig.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499*
S-101	B	$1.10	$0.87	$0.75	$0.59	$0.56
S-101-D	C	1.67	1.32	1.12	.92	.86
S-101-Md	D	1.67	1.32	1.12	.92	.86

SERIES 101 PLUGS (FIG. A)

All plugs are identical except the cable ferrule which is furnished in two sizes listed below. All metal parts are of brass. Fit 101 Series sockets. Ideal for high frequency connections.

Cinch No.	A	B	C	D	E
P-101-¼″	1¼″	⅜″	7/16″	¼″	9/32″
P-101-290	1¼″	¾″	7/16″	.290″	.319″

QUANTITY PRICES FOR SERIES 101 PLUGS

Cinch Number	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499*
P-101-¼″	$1.16	$0.93	$0.77	$0.60	$0.59
P-101-290	1.41	1.14	.96	.76	.74

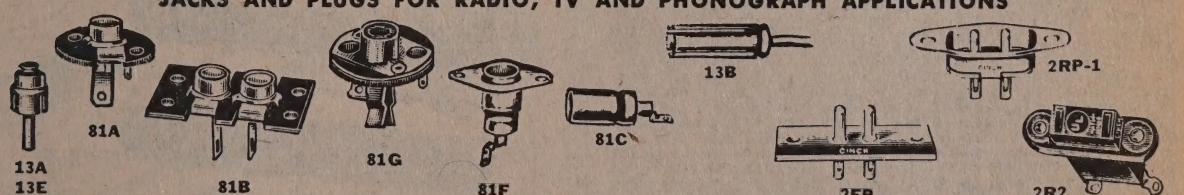
SERIES 202 PLUGS AND SOCKETS

Made in two contacts only. Brass metal parts with bright nickel finish. Molded phenolic insulation. Phosphor bronze "knife switch" type socket contacts engage both sides of flat brass plug contacts—double contact area. Formed fiber linings in caps. Polarized. Knurled nut has ¾″-27 thread. Socket mounting holes, #30 drill on 1″ centers. No. S-202-CCT-THR, when used with No. P-202-CCT, will make an ideal microphone connector.

Cinch Number	Fig.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499*
P-202-CCT	E	$1.46	$1.16	$0.99	$0.79	$0.74
S-202-CCT	E*	1.49	1.19	1.00	.80	.75
S-202-B	F	1.76	1.43	1.19	.96	.92
P-202-B	F†	1.86	1.52	1.29	1.02	.88
S-202-CCT-THR	G	1.96	1.59	1.31	1.03	1.01

*Socket instead of plug. †Plug instead of socket.
★LARGER QUANTITY PRICING AVAILABLE ON REQUEST

JACKS AND PLUGS FOR RADIO, TV AND PHONOGRAPH APPLICATIONS



RCA TYPE PHONO CONNECTORS

Cinch No. 13A Plug—9/16″ long pin. For Jack Types 81A, 81B and 81G.

Cinch No. 13E Plug—1 1/16″ long pin. For Jack Types 81A, 81B and 81G.

Cinch No. 81A Jack—Single jack for No. 13A. Mtg. ctrs., 1 1/16″.

Cinch No. 81B Jack—Double jack for No. 13A. Mtg. ctrs., 1 1/16″. Jacks spaced on 7/16″ ctrs. Size, 1½″ x 1″.

Cinch No. 81G Jack—Normally connected; this connection breaks when plug is inserted, making plug connection. Brass mtg. plate. Mtg. holes .136″.

ANTENNA CONNECTORS

Cinch No. 81F Jack—Motorola type. Shielded. Sturdy steel flange, 15/16″ mtg. ctrs. with .136″ dia. mtg. holes. Mounts with screws or rivets. Mates 13B plug.

Cinch No. 81C Jack—Same as 81F less flange. May be soldered in position. Mates with No. 13B.

MOTOROLA TYPE ANTENNA PLUG

Cinch No. 13B Plug—Has 1/8″ pin extending 1/2″ from shell whose eight cutting edges provide positive grounded connection when inserted in No. 81C or No. 81F.

MODEL 2FP CONNECTOR PLUG

Consists of two prongs mounted on a phenolic board. One piece contact. Mounting plate is of 1/16″ natural XP phenolic 1 5/8″ lg. x ¾″ w. The .135/.140″ mounting holes are on 1¼″ centers. An inexpensive current supply connector for TV sets.

MODEL 2R2 110-250 VOLT SOCKET

Rated at 15 amps, 110 V, or 10 amps, 250 V. Accepts any standard 2-prong electric plugs. Mounts in 11/64″ x 11/32″ hole. Ideal for radio and TV chassis. UL Listed.

MODEL 2RP-1 RECESSED PLUG

Recessed sub-panel mounting type plug. One piece contact. Perfect for current supply for TV sets. Rated at 125 V, 7 amps. Size: 3/8″ w. x 1 5/8″ lg., overall; body 5/16″. d. Mtg. Ctrs.: .140/.145″. UL App.

PRICING FOR JACKS AND PLUGS

Cinch No.	Net Each, Lots of: 1-24	25-49	50-99	100-249	250-499
13-A	$0.125	$0.110	$0.096	$0.082	$0.070
13-B	.232	.191	.162	.136	.125
13-E	.125	.110	.096	.082	.070
81-A	.21	.17	.15	.14	.13
81-B	.28	.23	.20	.17	.15
81-C	.25	.20	.17	.15	.14
81-G	.61	.52	.44	.35	.33
2FP	.183	.141	.128	.112	.101
2RP-1	.183	.141	.128	.112	.101
2R2	.29	.24	.22	.20	.19

ITT CANNON ELECTRIC Connectors

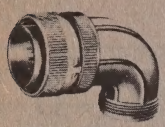
MS-A AND MS-B (MIL-C-5015) CONNECTORS

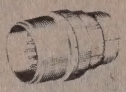
MS3100A

MS3101A

MS3102A

MS3106A
MS3106B


MS3108B


MS3101B

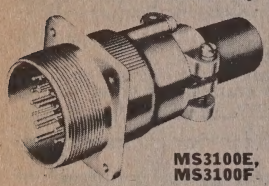
MS3106B

MS3107A,
MS3107B

General purpose non-environmental connectors have melamine inserts; meet MIL-C-5015 specifications. MS-A types have solid endbells; MS3108B, MS3101B and MS3106B have split endbells. **Shells:** Aluminum alloy. **Finish:** Olive drab chromate coating over cadmium plating. **Contacts:** Silver plated copper alloy. **Terminals:** Tinned solder pot type. **Clocking Positions:** Normal, W, X, Y, or Z.
Note: For clocking other than normal, add **5c** to price.
To Order: Use complete MS number, denoting shell style and insert type: e.g., MS3100A8S-1P.

MS3100A: Wall mounting receptacle: solid endbell.
MS3101A: Cable connector plug: solid endbell.
MS3102A: Box mounting receptacle: solid endbell.
MS3106A: Straight plug: solid endbell.
MS3107A: Quick disconnect plug: solid endbell.
MS3108B: 90° angle plug: split endbell.
MS3101B: Cable connector plug: split endbell.
MS3106B: Straight plug: split endbell.
MS3107B: Quick disconnect plug: split endbell.

MS-E, MS-F AND MS-R ENVIRONMENTAL CONNECTORS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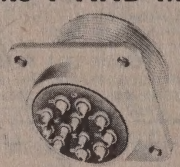
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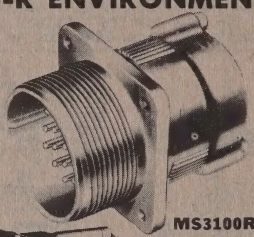
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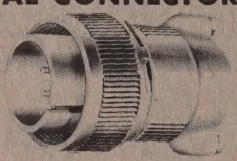
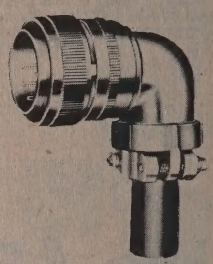

MS3106R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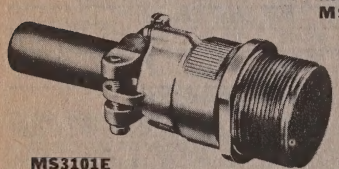
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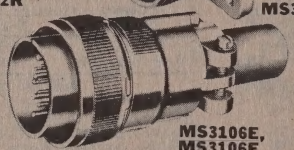
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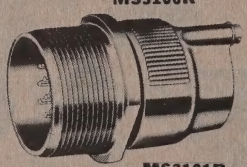
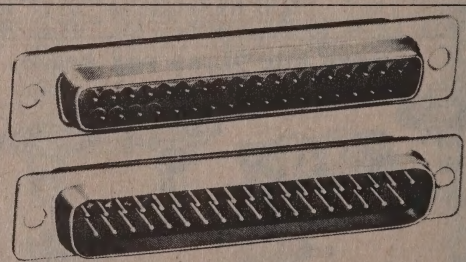

MS3101R

Environmental connectors meet latest revision of MIL-C-5015. Featuring resilient insulators and wire sealing grommets for extreme environmental conditions and high altitude sealing. MS-E and F types have a mechanical cable clamp for strain relief. MS-R types have shorter lighter weight endbells without cable clamps and have an O-ring to supplement the interfacial seal. **Shell:** Aluminum alloy. **Contacts:** Silver plated copper alloy. **Finish:** Chromate coating over cadmium plating. **Insulator:** Polychloroprene. **Terminals:** Tinned solder pot type.
Note: Available with five clocking positions—normal, W, X, Y, or Z; no extra charge for positions other than normal.

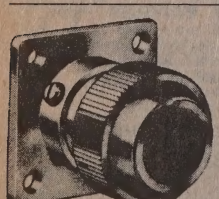
MS3100E, MS3100F: Wall mounting receptacle.
MS3101E: Cable connector plug.
MS3102E, MS3102R: Box mounting receptacle.
MS3106E, MS3106F: Straight plug.
MS3100R: Wall mounting receptacle.
MS3101R: Cable connector plug.
MS3106R: Straight plug.
MS3108E, MS3108R: 90° angle plug.

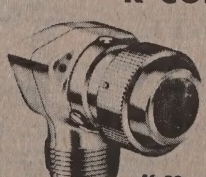
D SUBMINIATURE CONNECTORS

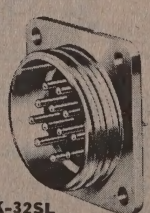
D Subminiature connectors are small, lightweight, rectangular connectors available in 5 sizes, with 9, 15, 25, 37 and 50 gold plated contacts. Shells are steel or brass with gold chromate finish. Insulators are diallyl-phthalate, D Subminiatures are available with accommodations for coaxial contacts and taper pins. Solderless, crimp-type, snap-in contacts can also be supplied. D-original D, solder contacts; D*C-general purpose, crimp snap-in rear release contacts; D*M-monobloc insulator, solder contacts; D*MA-meets MIL-C-24308, rear release crimp snap-in contacts. Monobloc insert material is diallyl-phthalate, with closed-entry socket contacts and snap-in coaxial contacts. Shell finish is golden iridite over cadmium plate. The Golden D meets more critical applications. The Golden D is physically interchangeable with the D subminiature with the exception of the solder pot and rear insulator extension which are slightly larger.

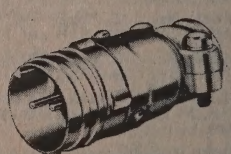


K CONNECTORS


K-31SL


K-23


K-32SL


K-22C

Series K Connectors are similar in many respects to the Series MS. The principal difference is in the coupling thread, which is an acme thread in the V line, whereas the MS uses unified screw threads. The K line comes in standard K and RK series. The RK is, essentially, a reverse coupling version of the standard K, and hence the two will not mate. Shells are made of aluminum alloy with standard cadmium finish. Contacts are copper alloy, silver-plated with tinned solder pots. Come in eight basic shell types with eight insert sizes totaling 350 arrangements with a variety of amperage and voltage capacities. They are available with 1 to 110 contacts. Prefix R (RWK, RLK, etc.) types are reverse versions with pin insert typical in the plug; socket insert in the receptacle; and, coupling nut reversed. Alternate positions V, W, X, Y and Z are available at the same price.

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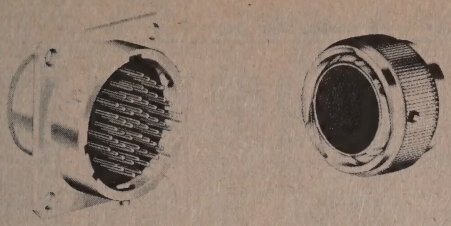
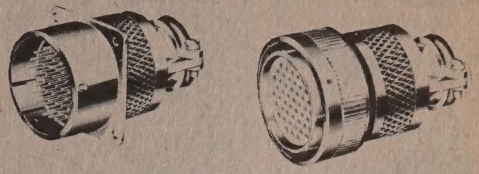
KJ SERIES CONNECTORS



Low profile, environment-resistant miniature circular connectors meet MIL-C-38999 requirements. Engineered for high density applications at temperatures from −65° F to +302° F or −65° F to +392° F. Crimp snap-in contacts in Little Caesar® rear release contact retention assembly; features multiple-tine metal retaining clip for dependable retention. Contacts are inserted, released and extracted from rear of connector. Monobloc (one-piece) hard inserts are made of strong, durable thermosetting plastic. Pin contact cavities are designed with closed-down effect for superior pin stability and positive axial alignment of the contacts. Lead-in chamfers in hard front socket face provide positive contact mating. Five-keyway shell polarization assures alignment during engagement; three-point bayonet lock coupling provides fast connect and disconnect. Complete environmental sealing by interfacial seal with individual raised tapered sealing barriers around each pin contact, a peripheral seal, and multiple-ripple wire sealing grommet. Available in nine shell styles, including three hermetic versions; total of 42 contact arrangements that will accommodate from 1 to 128 contacts using AWG wire sizes from 16 through 28. Contacts are high conductivity copper alloy with gold over gold plate finish. **Write or call for complete descriptive information and quantity pricing.**

PV SERIES CONNECTORS

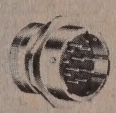
M83723/M0026482F (SERIES III)



High performance, crimp contact miniature environmental connectors are designed to M83723/0026482F specifications. Made for highly demanding space age applications. Little Caesar® rear release contact assembly features stamped metal retaining clip captivated by molded-in shoulders in the insulator. Easy insertion and extraction of crimp snap-in contacts, using rear-inserted plastic tool. Closed-entry socket design insures positive mating. Wire sealing is accomplished by multiple ripple design, exceeding M83723/0026482F wire sealing requirements. An interfacial seal on pin insert is bonded to hard dielectric. Raised tapered barriers around each pin contact lock into the lead-in chamfers on the socket insert, assuring individual contact sealing. Simple, strong contact design offers high resistance to bending or damage. Contacts have a single holding shoulder and no undercuts. PV series connectors come complete with expandable plastic insertion/extraction tool; cannot damage contact, insulator or grommet. Available in four shell styles (narrow flange receptacle, wide flange receptacle, jam nut receptacle, or straight plug); three environment-resistant classes; nine shell styles, plus a variety of special types. **Write or call for complete information and quantity pricing.**

KPT AND KPSE SERIES (MIL-C-0026482F SERIES I, II) CONNECTORS

KPT00/MS3110, KPSE00/MS3120
Wall Receptacle

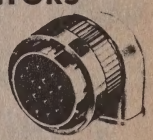


KPT01/MS3111, KPSE01/MS3121
Cable Plug

KPT02/MS3112, KPSE02/MS3122
Box Mtg. Receptacle

KPT06/MS3116, KPSE06/MS3126
Straight Plug

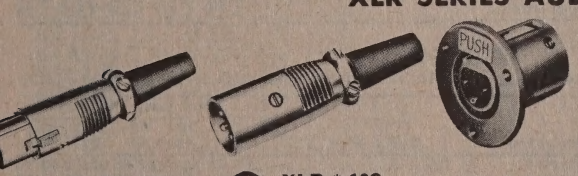
KPT07/MS3114, KPSE07/MS3124
Jam Nut Receptacle



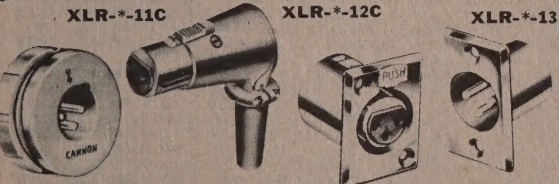
KPT08/KPSE08

Miniature circular connectors meet MIL-C-0026482F specs.
KPT Series: General purpose connectors with solder pot terminations; closed-entry socket contacts for positive mating.
KPSE Series: Environment-resistant connectors with front release, crimp snap-in contacts. Unique unitized insulator, integrally molded into a single voidless part; mechanically retained in the shell by a positive, hard plastic-to-metal lock retention. Complete moisture sealing achieved by four seals: Shell, peripheral, interfacial and wire seals. Closed-entry socket contacts for positive mating.

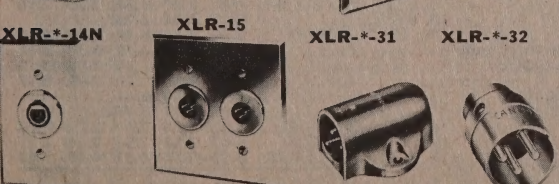
XLR SERIES AUDIO CONNECTORS



XLR-*-11C XLR-*-12C XLR-*-13



XLR-*-14N XLR-15 XLR-*-31 XLR-*-32



XLR-*-35 XLR-*-36-2G XLR-*-42 XLR-*-50

Advanced design, streamlined audio connectors with resilient socket insulator for shock protection and quiet operation. Latch-lock coupling insures positive mating. Integral cable clamp with two clamping positions for positive grip on cable from 7/32" to 5/16" dia. Neoprene bushing design permits easy cable insertion. Aluminum alloy shell has protective satin nickel finish and thick aluminum cross-sections for added strength. Glass-filled nylon pin insulator; resilient polychloroprene socket insulator. Silver plated brass contacts. XLR-3 types have three 15-amp contacts; XLR-4 types have four 10-amp contacts; XLR-5 types have five 7½-amp contacts.

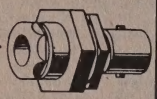
ITT Cannon No. XLR-*	Description	Contacts	Size, Inches Lgth. x Dia.
11C	Straight cord plug	Skt.	3 1/16 x 3/4
11SC	Same, but steel shell†	Skt.	3 1/16 x 3/4
12C	Straight cord plug	Pin	2 7/8 x 3/4
12SC	Same, but steel shell†	Pin	2 7/8 x 3/4
13	Wall mtg. receptacle	Skt.	1 1/16 x 1 7/16
11C-A95	Straight cord plug‡	Skt.	3 1/16 x 3/4
12C-A95	Straight cord plug‡	Pin	2 7/8 x 3/4
13N	Panel mtg. receptacle	Skt.	1 1/16 x 1 7/16
14	Wall mtg. receptacle	Pin	2 7/32 x 1 7/16
14N	Panel mtg. receptacle	Pin	2 7/32 x 1 7/16
15	90° cord plug	Skt.	.....
31	Wall mtg. receptacle	Skt.	1 1/16 x 1 1/16 x 1 7/16
32	Wall mtg. receptacle	Pin	2 7/32 x 7/8 x 1 7/16
35	Wall recep.; 1-gang	Skt.	1 1/16 x 2 3/4 x 4 1/2
35-2G	Wall recep.; 2-gang	Skt.	1 1/16 x 4 9/16 x 4 1/2
36	Wall recep.; 1-gang	Pin	2 7/32 x 2 3/4 x 4 1/2
36-2G	Wall recep.; 2-gang	Pin	2 7/32 x 4 9/16 x 4 1/2
32-A95	Wall mtg. receptacle‡	Pin	2 7/32 x 7/8 x 1 7/16
42	90° wall/mike recep.	Pin	1 7/16 x 1 1/4 x 1 3/16
50	Plain shell adapter	.....	1 1/8 x 47/64
50N	Same, w/coupling nut	.....	1 1/8 x 47/64
50T	Same, threaded barrel	.....	1 3/16 x 47/64

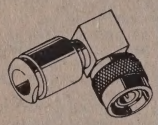
*Add interfix 3-, 4- or 5- to indicate number of contacts; e.g., XLR-3-11C. †Finger grips extend completely around shell. ‡Contacts finished in gold over silver plate.

BNC Plug

BNC Receptacle

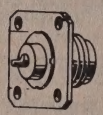
BNC Cap and Chain

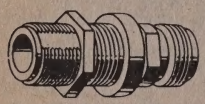

BNC Bulkhead Jack

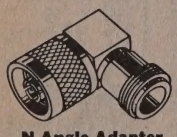

C Angle Plug

HN Armor Clamp

N Plug


N Receptacle


N Adapter


N Angle Adapter

N Tee Adapter

BNC SERIES

Impedance: 50 ohms, nom. **Frequency Range:** To 10,000 MHz with 50-ohm cables. **Rating:** 500 V peak.

Silver* Military Number	TR-5† Kings Number	Description	Cable Size, RG-	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
UG-88/U	KC-59-139	Plug	55, 58/U	$1.09	$0.91	$0.83	$0.75	$0.68
UG-88B/U	KC-59-324	Plug	55, 58/U	1.18	.98	.89	.81	.74
UG-88C/U	KC-59-141	Plug	55, 58, 142, 223/U	1.10	.92	.84	.76	.69
UG-88D/U	KC-59-325	Plug	55, 58, 142, 223/U	1.33	1.11	1.01	.92	.84
UG-88E/U	KC-59-145	Plug	55, 58, 142, 223/U	1.27	1.06	.96	.87	.79
UG-89B/U	KC-39-89	Jack	55, 58, 142, 223/U	1.24	1.03	.94	.85	.77
UG-89C/U	KC-39-43	Jack	55, 58, 142, 223/U	1.24	1.03	.94	.85	.77
CW-123A/U	KC-89-48	Cap and chain assembly	.....	.64	.53	.48	.44	.40
CW-155A/U	KC-89-130	Cap assembly	.....	.52	.43	.39	.35	.32
CW-159/U	KC-89-62	Shorting plug	.....	1.63	1.36	1.24	1.13	1.03
MX-195/U	.....	Hood	55, 58/U	1.74	1.45	1.32	1.20	1.09
MX-195A/U	.....	Hood	55, 58/U	.83	.69	.63	.57	.52
UG-201A/U	KN-99-35	BNC to N adapter	.....	2.09	1.74	1.58	1.44	1.31
UG-253B/U	.....	Bulkhead jack	55, 58, 223/U	7.01	5.84	5.31	4.83	4.39
UG-254A/U	KC-79-149	Receptacle	.....	7.02	5.85	5.32	4.84	4.40
UG-255/U	KC-99-27	BNC to UHF adapter	.....	3.01	2.51	2.28	2.07	1.88
UG-260/U	KC-59-159	Plug	59, 62, 71, 210/U	1.32	1.10	1.00	.91	.83
UG-260A/U	KC-59-327	Plug	59, 62, 71, 210/U	1.28	1.07	.97	.88	.80
UG-260B/U	KC-59-122	Plug	59, 62, 71, 210/U	1.21	1.01	.92	.84	.76
UG-260C/U	KC-59-328	Plug	59, 62, 71, 210/U	1.32	1.10	1.00	.91	.83
UG-260D/U	KC-59-147	Plug	59, 62, 71, 210/U	1.32	1.10	1.00	.91	.83
UG-261C/U	KC-39-54	Jack	59, 62, 71, 210/U	1.36	1.13	1.03	.94	.85
UG-262B/U	KC-19-164	Panel jack	59, 62, 71, 210/U	2.18	1.82	1.65	1.50	1.36
UG-262C/U	.....	Panel jack	59, 62, 71, 210/U	2.18	1.82	1.65	1.50	1.36
UG-273/U	KC-99-34	BNC to UHF adapter	.....	1.79	1.49	1.35	1.23	1.12
UG-274A/U	KC-99-64	Tee adapter	.....	3.30	2.75	2.50	2.27	2.06
UG-274B/U	KC-99-31	Tee adapter	.....	3.50	2.92	2.65	2.41	2.19
CW-282/U	KC-89-83	Cap and chain	.....	.89	.74	.67	.61	.55
UG-290/U	KC-79-56	Receptacle	.....	1.72	1.43	1.30	1.18	1.07
UG-290A/U	KC-79-119	Receptacle	.....	1.15	.96	.87	.79	.72
UG-291/U	KC-19-194	Panel jack	55, 58/U	3.01	2.51	2.28	2.07	1.88
UG-291B/U	KC-19-195	Panel jack	55, 58, 142, 223/U	1.92	1.60	1.45	1.32	1.20
UG-291C/U	KC-19-81	Panel jack	55, 58, 142, 223/U	1.92	1.60	1.45	1.32	1.20
UG-306A/U	.....	Angle adapter	.....	3.25	2.71	2.46	2.24	2.04
UG-306B/U	KC-99-35	Angle adapter	.....	3.34	2.78	2.53	2.30	2.09
UG-309/U	.....	BNC to HN adapter	.....	5.77	4.81	4.37	3.97	3.61
UG-349A/U	.....	BNC to N adapter	.....	3.13	2.61	2.37	2.15	1.95
UG-349B/U	KN-99-46	BNC to N adapter	.....	3.38	2.82	2.56	2.33	2.12
UG-414A/U	KC-99-56	Adapter	.....	2.27	1.89	1.72	1.56	1.42
UG-447/U	KC-79-73	Receptacle	.....	1.72	1.43	1.30	1.18	1.07
UG-491A/U	KC-99-67	Adapter	.....	2.75	2.29	2.08	1.89	1.72
UG-491B/U	KC-99-32	Adapter	.....	2.88	2.40	2.18	1.98	1.80
UG-492A/U	KC-99-33	Bulkhead adapter	.....	3.14	2.62	2.38	2.16	1.96
UG-492B/U	KC-99-68	Bulkhead adapter	.....	4.61	3.84	3.49	3.17	2.88
UG-492C/U	KC-99-69	Bulkhead adapter	.....	3.40	2.83	2.57	2.34	2.13
UG-492D/U	KC-99-38	Bulkhead adapter	.....	3.30	2.75	2.50	2.27	2.06
UG-535/U	KC-79-96	Angle receptacle	.....	4.20	3.50	3.18	2.89	2.63
UG-604/U	KC-79-40	Receptacle	.....	1.54	1.28	1.16	1.05	.95
UG-625/U	KC-79-48	Receptacle	.....	1.28	1.07	.97	.88	.80
UG-625B/U	KC-79-47	Receptacle	.....	.91	.76	.69	.63	.57
UG-657/U	KC-79-43	Receptacle	.....	1.69	1.41	1.28	1.16	1.05
UG-909/U	KC-19-196	Bulkhead jack	55, 58, 142, 223/U	1.86	1.55	1.41	1.28	1.16
UG-909B/U	KC-19-197	Bulkhead jack	55, 58, 142, 223/U	1.76	1.47	1.34	1.22	1.11
UG-910/U	KC-19-198	Bulkhead jack	59, 62, 71, 210/U	1.88	1.57	1.43	1.30	1.18
UG-910B/U	.....	Bulkhead jack	59, 62, 71, 210/U	1.94	1.62	1.47	1.34	1.22
UG-911A/U	KC-79-74	Receptacle	.....	2.42	2.02	1.84	1.67	1.52
UG-912A/U	KC-79-79	Receptacle	.....	2.28	1.90	1.73	1.57	1.43
UG-913/U	KC-59-330	Angle plug	55, 58, 142, 223/U	3.82	3.18	2.89	2.63	2.39
UG-913A/U	KC-59-179	Angle plug	55, 58, 142, 223/U	3.61	3.01	2.74	2.49	2.26
UG-914/U	KC-99-30	Adapter	.....	1.49	1.24	1.13	1.03	.94
UG-959A/U	KC-59-174	Plug	8, 9, 11, 213, 214/U	3.79	3.16	2.87	2.61	2.37
UG-1094/U	KC-79-35	Receptacle	.....	.82	.68	.62	.56	.51
UG-1094A/U	KC-79-46	Receptacle	.....	1.01	.84	.76	.69	.63
UG-1098/U	KC-79-77	Angle receptacle	.....	4.62	3.85	3.50	3.18	2.89
UG-1098A/U	KC-79-75	Angle receptacle	.....	5.12	4.27	3.88	3.53	3.21

C SERIES

Impedance: 50 ohms, nom. **Frequency Range:** To 10,000 MHz (except UG-634/U to 2000 MHz).

Silver* Military Number	TR-5† Kings Number	Description	Cable Size, RG-	Net Each, Lots of 1-24	25-49	50-99	100-249	250 499*
UG-564/U	KD-99-20	C to N adapter	.....	$3.80	$3.17	$2.88	$2.62	$2.38
UG-565A/U	.....	C to N adapter	.....	5.78	4.82	4.38	3.98	3.62
UG-566A/U	.....	Tee adapter	.....	13.73	11.44	10.40	.....	.....
UG-567A/U	.....	Angle adapter	.....	6.05	5.04	4.58	4.16	3.78
UG-568/U	KD-79-19	Receptacle	.....	3.47	2.89	2.63	2.39	2.17
UG-569A/U	.....	Receptacle	.....	3.88	3.23	2.94	2.67	2.43
UG-571A/U	.....	Panel jack	8, 9, 11, 213, 214/U	4.61	3.84	3.49	3.17	2.88
UG-572A/U	.....	Jack	8, 9, 11, 213, 214/U	3.31	2.76	2.51	2.28	2.07
UG-573A/U	KD-59-140	Plug	8, 9, 11, 213, 214/U	3.16	2.63	2.39	2.17	1.97
UG-573B/U	KD-59-141	Plug	8, 9, 11, 213, 214/U	3.25	2.71	2.46	2.24	2.04
UG-626B/U	.....	Plug	5, 6, 212/U	4.61	3.84	3.49	.....	.....
UG-627B/U	KD-59-92	Plug	59, 62, 71, 210/U	3.72	3.10	2.82	2.56	2.33
UG-628A/U	.....	Plug	8, 9, 11, 213, 214/U	4.63	3.86	3.51	3.19	2.90
UG-630A/U	.....	Panel jack	5, 6, 212/U	5.09	4.24	3.85	.....	.....
UG-631A/U	.....	Panel jack	59, 62, 71, 210/U	5.33	4.44	4.04	3.67	3.34
UG-634/U	KD-79-11	High-voltage receptacle	.....	5.42	4.52	4.11	3.74	3.40
UG-636A/U	.....	C to BNC adapter	.....	4.04	3.37	3.06	2.78	2.53
UG-643/U	.....	Adapter	.....	3.79	3.16	2.87	2.61	2.37
UG-702/U	.....	C to HN adapter	.....	8.99	7.49	6.81	.....	.....
UG-703A/U	.....	C to HN adapter	.....	8.96	7.47	6.79	.....	.....
UG-709A/U	.....	Plug	55, 58, 142, 223/U	3.22	2.68	2.44	2.22	2.02
UG-709B/U	.....	Plug	55, 58, 142, 223/U	3.47	2.89	2.63	2.39	2.17
UG-710B/U	.....	Angle plug	8, 9, 11, 213, 214/U	6.43	5.36	4.87	4.43	4.03

*Standard finish is silver, electro-deposited to QQ-S-365A and reinforced by electrolytic chromate treatment which resists tarnish and salt spray. †TR-5® finish recommended for greater durability; a white alloy electro-deposit which provides exceptional hardness and superior resistance to tarnish and corrosion.

★LARGER QUANTITY PRICES ON REQUEST

Kings RF Connectors

N SERIES

Imped.: 50 ohms. **Freq. Range:** To 10,000 MHz. **Rating:** 1500 V peak. Illustrated on opposite page.

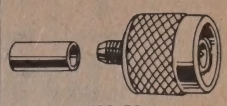
Silver* Military Number	TR-5† Kings Number	Description	Cable Size, RG-	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
UG-18C/U	.....	Plug	5, 6, 21/U	$2.42	$2.02	$1.84	$1.67	$1.38
UG-18D/U	.....	Plug	5, 6, 21, 212/U	2.58	.215	1.95	.....	.....
UG-20D/U	.....	Jack	5, 6, 21, 212/U	2.71	2.26	2.05	.....	.....
UG-21B/U	KN-59-207	Plug	8, 9, 11, 213, 214/U	2.21	1.84	1.67	1.52	1.38
UG-21C/U	KN-59-208	Plug	8, 9, 11, 213, 214/U	2.42	2.02	1.84	1.67	1.52
UG-21D/U	KN-59-209	Plug	8, 9, 11, 213, 214/U	1.94	1.62	1.47	1.34	1.22
UG-21E/U	KN-59-106	Plug	8, 9, 11, 213, 214/U	2.14	1.78	1.62	1.47	1.34
UG-21F/U	.....	Plug	8, 9, 11, 213, 214/U	1.98	1.65	1.50	1.36	1.24
UG-22D/U	KN-19-122	Panel jack	8, 9, 11, 213, 214/U	2.51	2.09	1.90	.....	.....
UG-22E/U	.....	Panel jack	8, 9, 11, 213, 214/U	3.30	2.75	2.50	.....	.....
UG-22F/U	.....	Panel jack	8, 9, 11, 213, 214/U	3.04	2.53	2.30	.....	.....
UG-23B/U	KN-39-77	Jack	8, 9, 11, 213, 214/U	2.88	2.40	2.18	1.98	1.80
UG-23D/U	KN-39-78	Jack	8, 9, 11, 213, 214/U	2.00	1.67	1.52	1.38	1.25
UG-23E/U	KN-39-54	Jack	8, 9, 11, 213, 214/U	2.08	1.73	1.57	1.43	1.30
UG-27C/U	KN-99-47	Angle adapter	.....	3.61	3.01	2.74	2.49	2.26
UG-28A/U	KN-99-71	Tee adapter	.....	5.64	4.70	4.27	3.88	3.53
UG-29B/U	KN-99-50	Adapter	.....	3.01	2.51	2.28	2.07	1.88
UG-30D/U	KN-99-58	Bulkhead adapter	.....	5.62	4.68	4.25	3.86	3.51
UG-30E/U	KN-99-74	Bulkhead adapter	.....	6.37	5.31	4.83	4.39	3.99
UG-57B/U	KN-99-44	Adapter	.....	2.92	2.43	2.21	2.01	1.83
UG-58A/U	KN-79-40	Receptacle	.....	1.79	1.49	1.35	1.23	1.12
UG-83B/U	KN-99-57	N to UHF adapter	.....	4.06	3.38	3.07	2.79	2.54
UG-107B/U	KN-99-48	Tee adapter	.....	6.72	5.60	5.09	4.63	4.21
UG-146A/U	KN-99-36	N to UHF adapter	.....	5.04	4.20	3.82	3.47	3.15
UG-160D/U	.....	Bulkhead jack	8, 9, 11, 213, 214/U	4.06	3.38	3.07	2.79	2.54
UG-167E/U	.....	Plug	17, 218/U	9.92	8.27	7.52	.....	.....
UG-202A/U	KN-99-51	Angle adapter	.....	16.58	13.82	12.56	11.42	10.38
UG-204C/U	.....	Plug	14/U	5.57	4.64	4.22	3.84	3.49
UG-536A/U	.....	Plug	55, 58, 142, 223/U	1.90	1.58	1.44	1.31	1.19
UG-536B/U	KN-59-121	Plug	55, 58, 142, 223/U	1.90	1.58	1.44	1.31	1.19
UG-556B/U	KN-19-86	Bulkhead jack	55, 58, 142, 223/U	3.64	3.03	2.75	2.50	2.27
UG-593A/U	.....	Panel jack	59, 62, 71, 210/U	3.68	3.07	2.79	.....	.....
UG-594A/U	KN-59-212	Plug	8, 11, 213/U	7.87	6.56	5.96	5.42	4.93
UG-602A/U	.....	Jack	59, 62, 71, 210/U	2.62	2.18	1.98	1.80	1.64
UG-603A/U	KN-59-213	Plug	59, 62, 71, 210/U	2.51	2.09	1.90	1.73	1.57
UG-606/U	.....	Adapter	.....	8.84	7.37	6.70	6.90	5.54
UG-680A/U	KN-79-51	Receptacle	.....	3.65	3.04	2.76	2.51	2.28
MX-913/U	KN-89-28	Cap and chain	.....	1.00	.83	.75	.68	.62
UG-941A/U	.....	Plug	10, 12U	3.30	2.75	2.50	2.27	2.06
UG-941B/U	.....	Plug	8, 9, 10, 213, 214, 215/U	3.19	2.66	2.42	2.20	2.00
UG-982/U	.....	Plug	18, 219	9.06	7.55	6.86	6.24	5.67
UG-997A/U	.....	Receptacle	.....	9.42	7.85	7.14	6.49	5.90
UG-999A/U	KV-99-26	N to LC adapter	.....	19.70	17.91	14.96	12.52	.....
UG-1095B/U	KN-19-121	Panel jack	55, 58, 142, 223/U	3.22	2.68	2.44	2.22	2.02
UG-1185/U	KN-59-192	Plug	8, 9, 11, 213, 214/U	2.09	1.74	1.58	1.44	1.31
UG-1185A/U	.....	Plug	8, 9, 11, 213, 214/U	2.12	1.77	1.61	1.46	1.33
UG-1186A/U	.....	Jack	8, 9, 11, 213, 214/U	2.35	1.96	1.78	1.62	1.47
UG-1187A/U	.....	Panel jack	8, 9, 11, 213, 214/U	2.95	2.46	2.24	2.04	1.85

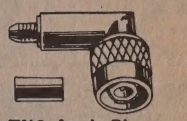
K-GRIP JR.® SERIES

Impedance: 50 ohms. **Rating:** 1500 volts rms.

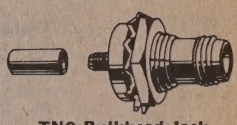
Kings Number Silver*	Kings Number TR-5†	Series	Description	Cable Size, RG-	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499*
KA-19-38	KA-19-68	TNC	Bulkhead jack	58, 58A, 58C, 141/U	$5.28	$4.40	$4.00	.....	.....
KA-19-39	.....	TNC	Bulkhead jack	55, 55B, 142B/U	4.75	3.96	3.60	.....	.....
KA-19-40	KA-19-65	TNC	Bulkhead jack	55A, 142, 142A, 223/U	5.38	4.48	4.07	.....	.....
KA-19-41	.....	TNC	Bulkhead jack	122, 180, A, 195, A/U	3.17	2.55	2.13	$1.93	$1.75
KA-19-42	KA-19-60	TNC	Bulkhead jack	Same as KA-59-69	3.83	3.19	2.90	.....	.....
KA-19-43	.....	TNC	Bulkhead jack	59, A, 62, A, C, 210/U	5.27	4.39	3.99	.....	.....
KA-19-44	.....	TNC	Bulkhead jack	71, 71A, 71B/U	3.97	3.31	3.01	.....	.....
KA-59-44	KA-59-103	TNC	Plug	58, 58A, 58C, 141/U	2.27	1.89	1.72	1.56	1.42
KA-59-45	KA-59-87	TNC	Plug	55A, 142, 142A, 223/U	2.27	1.89	1.72	1.56	1.42
KA-59-46	KA-59-94	TNC	Plug	59, A, B, 62, A, C, 210/U	2.27	1.89	1.72	1.56	1.42
KA-59-57	KA-59-86	TNC	Plug	55, 55B, 142B/U	2.45	2.04	1.85	1.68	1.53
KA-59-58	KA-59-142	TNC	Plug	122, 180, A, 195, A/U	3.17	2.55	2.13	1.93	1.75
KA-59-69	KA-59-120	TNC	Plug	174, 179A, B, 187, A,	3.38	2.82	2.56	2.33	2.12
KA-59-70	.....	TNC	Angle plug	188, A/U	8.15	6.79	6.17	.....	.....
KA-59-71	KA-59-151	TNC	Angle plug	58, 58A, 58C, 141/U	7.78	6.68	5.60	5.10	4.65
KA-59-72	.....	TNC	Angle plug	55A, 142, 142A, 223/U	7.61	6.34	5.76	5.24	4.76
KA-59-74	.....	TNC	Angle plug	122, 180, A, 195, B/U	7.13	5.94	4.96	4.50	4.09
KA-59-76	.....	TNC	Angle plug	59, A, B, 62, A, C, 210/U	8.76	6.90	5.55	4.60	4.15
KC-19-61	KC-19-83	BNC	Bulkhead jack	58, 58A, 58C, 141/U	2.69	2.24	2.04	1.85	1.68
KC-19-62	KC-19-89	BNC	Bulkhead jack	59, A, B, 62, A, C, 210/U	2.81	2.34	2.13	1.94	1.76
KC-19-64	KC-19-140	BNC	Bulkhead jack	55A, 142, 142A, 223/U	2.58	2.15	1.95	1.77	1.61
KC-19-65	KC-19-90	BNC	Bulkhead jack	55, 55B, 142B/U	2.62	2.18	1.98	1.80	1.64
KC-19-66	KC-19-91	BNC	Bulkhead jack	71, 71A, 71B/U	3.95	3.28	2.73	2.48	2.25
KC-19-67	KC-19-96	BNC	Bulkhead jack	122, 180, A, 195, A/U	3.05	2.54	2.31	2.10	1.91
KC-19-68	KC-19-93	BNC	Bulkhead jack	Same as KA-59-69	3.38	2.82	2.56	2.33	2.12
KC-59-78	KC-59-123	BNC	Plug	58, 58A, 58C, 141/U	1.28	1.07	.97	.88	.80
KC-59-79	KC-59-128	BNC	Plug	59, A, B, 62, A, C, 210/U	1.32	1.10	1.00	.91	.83
KC-59-80	KC-59-162	BNC	Plug	55, 142, 142A, 223/U	1.43	1.19	1.08	.98	.89
KC-59-81	KC-59-135	BNC	Plug	71, 71A, 71B/U	1.43	1.19	1.08	.98	.89
KC-59-95	KC-59-152	BNC	Plug	Same as KA-59-69	2.27	1.89	1.72	1.56	1.42
KC-59-101	KC-59-153	BNC	Angle plug	58, 58A, 58C, 141/U	3.97	3.31	3.01	2.74	2.49
KC-59-102	KC-59-222	BNC	Angle plug	59, A, B, 62, A, C, 210/U	5.28	4.40	4.00	3.64	3.31
KC-59-103	KC-59-270	BNC	Angle plug	55A, 142, 142A, 223/U	5.28	4.40	4.00	3.64	3.31
KC-59-104	KC-59-167	BNC	Plug	55, 55B, 142B/U	1.40	1.17	1.06	.96	.87
KC-59-105	KC-59-215	BNC	Angle plug	55, 55B, 142B/U	5.05	4.21	3.83	3.48	3.16
KC-59-106	.....	BNC	Angle plug	71, 71A, 71B/U	5.28	4.40	4.00	3.64	3.31
KC-59-107	KC-59-169	BNC	Plug	122, 180, A, 195, A/U	1.70	1.42	1.29	1.17	1.06
KC-59-108	KC-59-171	BNC	Angle plug	122, 180, A, 195, A/U	5.27	4.39	3.99	3.63	3.30
KC-59-109	KC-59-318	BNC	Angle plug	Same as KA-59-69	7.27	6.06	5.51	5.01	.....
KU-59-15	.....	UHF	Plug	5, A, B, 6, A, 21, A, 143, A, 212, 222/U	1.18	.98	.89	.81	.74
KU-59-42	KU-59-62	UHF	Plug	8, 8A, 213/U	1.18	.98	.89	.81	.74
KU-59-44	KU-59-54	UHF	Plug	59, 59A, 59B, 210/U	1.18	.98	.89	.81	.74
KU-59-46	KU-59-43	UHF	Plug	58, A, C, 141, A/U	1.18	.98	.89	.81	.74

*Standard finish is silver, electro-deposited to QQ-S-365A and reinforced by electrolytic chromate treatment which resists tarnish and salt spray. †TR-5® finish recommended for greater durability; a white alloy electro-deposit which provides exceptional hardness and superior resistance to tarnish and corrosion. *Larger quantity prices on request.

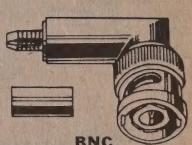

TNC Plug

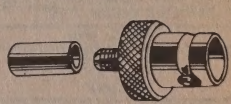

TNC Angle Plug

TNC Jack


TNC Bulkhead Jack

BNC Plug


BNC Angle Plug

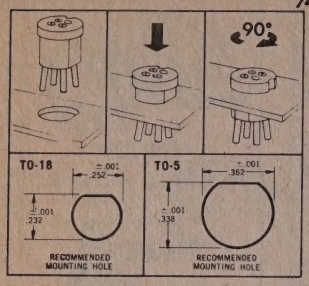

BNC Jack

BNC Bulkhead Jack

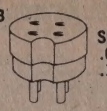
UHF Plug

SEALECTRO PRESS-FIT® TRANSISTOR SOCKETS — CONHEX® RF CONNECTORS

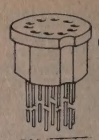
¼ TURN SUPERCON TRANSISTOR AND IC SOCKETS



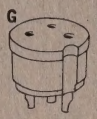
SPREAD
.043 dia.
.160 L



SOLDER POST
.043 dia.
.160 L

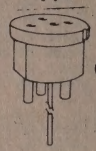


DIRECT or PC WIRING
C — 1.5 L
D — .110 L
E — .160 L
F — .315 L
.020 dia.



SOLDER CUP
.051 dia.,
.038 dia. hole
X .150 deep
.160 L

TURRETED
.035 dia.
.051 dia.
.160 L



COMBINATION
.043 dia.
.150 L
.020 dia.
1.5 L

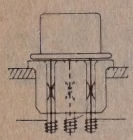
Needs no mounting hardware. Provides full insulation from metal chassis. Exclusive design saves time and money on the assembly line. Merely drop ¼ turn unit through D-hole and manual or automatic tooling automatically turns it 90°. Flatted portion turns free, while rounded area is grooved against D-flat, producing a positive locking action in chassis. Material: Insulator, Teflon*; shell, brass; contact, beryllium copper; standard plating, gold over copper. *Registered DuPont Corp. trademark.

Sealectro Number	Fig.	No. of Leads	Pitch Circle, Inches	No. of Contacts	Mtg. Hole, Dia., In.	Net Ea., Lots of 100
¼ TURN						
027-1705	A	4	.100	4	.252	$ .78
027-1706	A	3	.100	4*	.252	.75
027-1700	B	4	.200	4	.362	.84
027-1701	B	3	.200	3	.362	.75
027-1702	B	3	.200	4*	.362	.76
027-1703	J	4	.200	4†	.362	1.19
027-1707	C	8	.200	8	.362	2.72
027-1708	C	6	.200	6	.362	2.30
027-1709	C	10	.230	10	.362	3.32
027-1704	A	3	.100	3	.252	.64
PRESS-FIT						
027-1712	E	3	.100	3	.215	.80
027-1727	E	4	.100	4	.215	.96
027-1728	A	3	.100	3	.250	.64
027-1729	A	4	.100	4	.250	.78
027-1730	A	3	.100	4*	.250	.71
027-1731	E	3	.100	3	.215	.80
027-1732	E	4	.100	4	.215	.96
027-6701	G	3	.100	3	.215	.80
027-6702	G	4	.100	4	.215	.96
027-1713	D	3	.200	3	.360	.80
027-1716	B	4	.200	4	.360	.82
027-1717	B	3	.200	3	.360	.71
027-1718	B	3	.200	4*	.360	.76
027-1719	J	4	.200	4†	.360	1.19
027-1720	F	4	.200	4	.360	.96
027-1721	F	3	.200	3	.360	.80
027-2700	H	3	.200	3	.360	.80
027-2701	H	4	.200	4	.360	.96
027-6710	G	4	.200	4	.360	.96
027-6703	G	3	.200	3	.360	.80
027-6711	H	3	.200	3	.360	.80
027-6712	H	4	.200	4	.360	.96
027-1714	D	10	.230	10	.360	2.06
027-1715	F	8	.200	8	.360	1.68
027-1722	F	6	.200	6	.360	1.31
027-1723	F	10	.230	10	.360	2.06
027-1724	C	8	.200	8	.360	2.72
027-1725	C	6	.200	6	.360	2.30
027-1726	C	10	.230	10	.360	3.32
027-2702	H	6	.200	6	.360	1.31
027-2703	H	8	.200	8	.360	1.68
027-2704	H	10	.230	10	.360	2.07
027-6704	G	8	.200	8	.360	1.68
027-6705	G	6	.200	6	.360	1.31
027-6713	G	10	.230	10	.360	2.06
027-6714	H	6	.200	6	.360	1.31
027-6715	H	8	.200	8	.360	1.31
027-6716	H	10	.230	10	.360	2.06

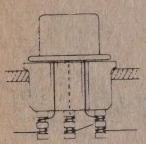
‡.232″; §.338″ flatted side.

PRESS-FIT SERIES 60 TRANSISTOR AND IC SOCKETS

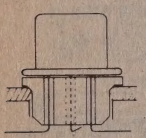
Supercon transistor and IC hardware features high-retention precision contacts. Allows fast, easy replacement of transistor or IC. Maintains retention, in excess of 50 grams per lead, through shock and vibration and repeated component insertions. Permits transistor or IC device interface into associated circuitry without electrical noise or signal dissipation due to contact resistance build-up.



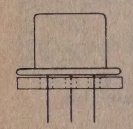
PRESS-FIT SERIES 60:
Transistor and IC sockets
Low-cost, high precision series 60 sockets. Permit plug-in and removal of TO-5, TO-18 cans and IC packages at will. Precise contact design provides a positive mechanical grip while making electrical contact with minimum resistance.



PRESS-FIT TRANSISTOR AND IC HOLDERS
Provides insulated chassis mounting with thru holes and soldering lugs for transistor leads and circuit connections.



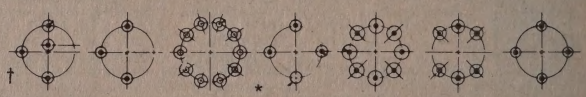
PRESS-FIT TRANSISTOR AND IC BUSHINGS
Press-fit or grommet-type chassis mounting. Provides support for transistor can and thru-chassis hole plus strain relief for leads.



PRESS-FIT TRANSISTOR AND IC PADS
Provides insulation from mounting surface and strain relief for glass seals.

PRESS-FIT:
For chassis thickness .040″ and over, use 60° countersink. Use 82° countersink under .040″.

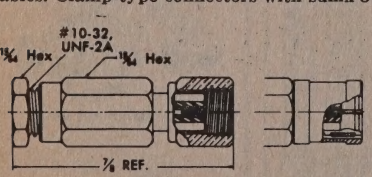
Hole Dia.	Entrance Dia.
.215″	.234″
.250″	.280″
.360″	.380″



CONHEX SUBMINIATURE RF CONNECTORS

50 OHM SCREW-ON AND SNAP-ON CABLE CONNECTORS

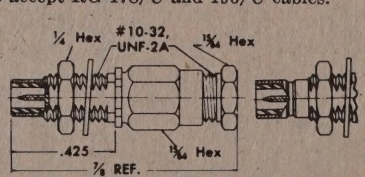
Clamp-type connectors with suffix 0000 accept RG-161/U, 174/U, 188/U and 316/U cables. Clamp-type connectors with suffix 3196 accept RG-178/U and 196/U cables.



SCREW-ON SNAP-ON

CLAMP-TYPE STRAIGHT PLUGS

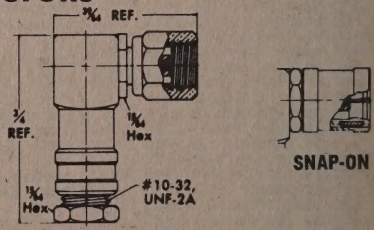
Sealectro No.	Plug Type	Net Ea. 1-9
50-007-0000	Screw-on	$2.76
50-007-3196	Screw-on	2.78
51-007-0000	Snap-on	2.76
51-007-3196	Snap-on	2.78



SCREW-ON SNAP-ON

CLAMP-TYPE BULKHEAD JACKS

Sealectro No.	Jack Type	Net Ea. 1-9
50-010-0000	Screw-on	$2.71
50-010-3196	Screw-on	3.67
51-010-0000	Snap-on	2.71
51-010-3196	Snap-on	3.67



SCREW-ON

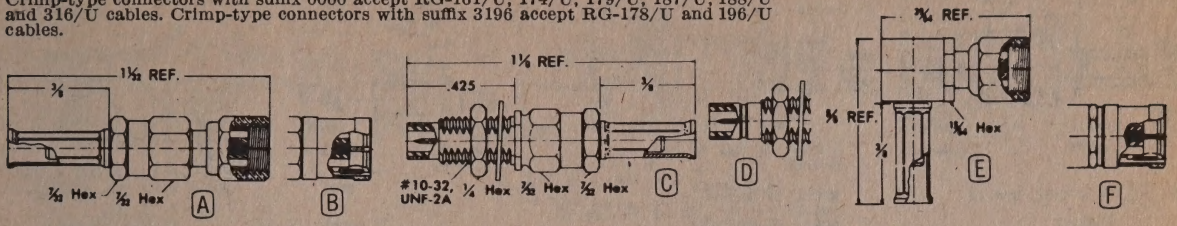
CLAMP-TYPE RIGHT-ANGLE PLUGS

Sealectro No.	Plug Type	Net Ea. 1-9
50-011-0000	Screw-on	$4.42
50-011-3196	Screw-on	4.68
51-011-0000	Snap-on	4.42
51-011-3196	Snap-on	4.68

CONHEX SUBMINIATURE RF CONNECTORS (CONT'D)

50 OHM SCREW-ON AND SNAP-ON CABLE CONNECTORS

Crimp-type connectors with suffix 0000 accept RG-161/U, 174/U, 179/U, 187/U, 188/U and 316/U cables. Crimp-type connectors with suffix 3196 accept RG-178/U and 196/U cables.



CRIMP-TYPE STRAIGHT PLUGS

Sealectro Number	Fig.	Straight Plug Type	Net Ea., Lots 1-9
50-024-0000	A	Screw-on	$2.69
50-024-3196	A	Screw-on	3.64
51-024-0000	B	Snap-on	2.71
51-024-3196	B	Snap-on	2.69

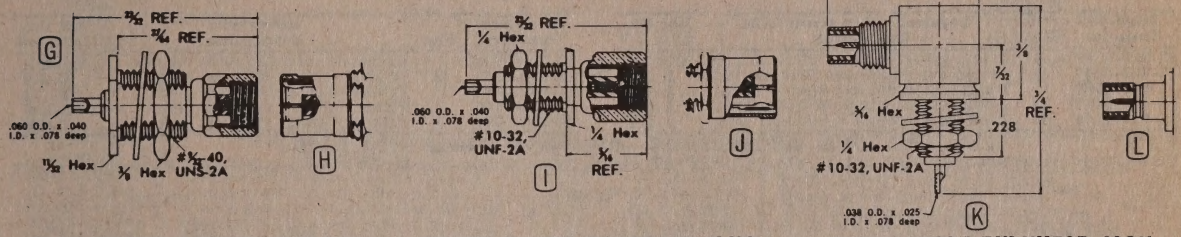
CRIMP-TYPE BULKHEAD JACKS

Sealectro Number	Fig.	Bulkhead Jack Type	Net Ea., Lots 1-9
50-027-0000	C	Screw-on	$2.84
50-027-3196	C	Screw-on	3.85
51-027-0000	D	Snap-on	2.84
51-027-3196	D	Snap-on	2.84

CRIMP-TYPE RIGHT ANGLE PLUGS

Sealectro Number	Fig.	Right Angle Plug Type	Net Ea., Lots 1-9
50-028-0000	E	Screw-on	$3.55
50-028-3196	E	Screw-on	4.78
51-028-0000	F	Snap-on	3.65
51-028-3196	F	Snap-on	3.53

50 OHM SCREW-ON AND SNAP-ON RECEPTACLES



REAR MOUNT BULKHEAD PLUG

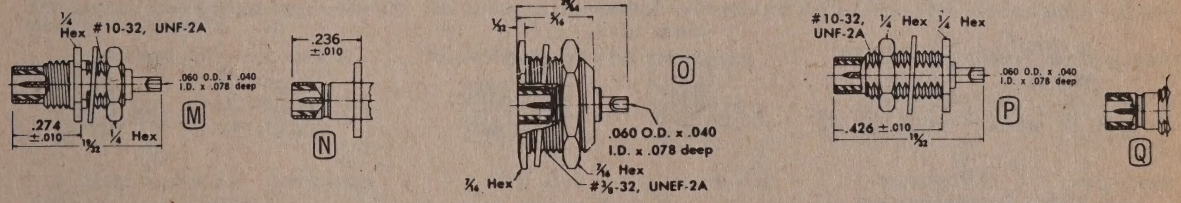
Sealectro Number	Fig.	Rear Mount Plug Type	Net Ea., Lots 1-9
50-044-0000	G	Screw-on	$2.19
51-044-0000	H	Snap-on	2.19

FRONT MOUNT BULKHEAD PLUG

Sealectro Number	Fig.	Front Mount Plug Type	Net Ea., Lots 1-9
50-046-0000	I	Screw-on	$2.28
51-046-0000	J	Snap-on	2.28

RIGHT ANGLE BULKHEAD JACK

Sealectro Number	Fig.	Right Angle Jack Type	Net Ea., Lots 1-9
50-047-0000	K	Screw-on	$3.00
51-047-0000	L	Snap-on	3.00



FRONT MOUNT BULKHEAD JACK

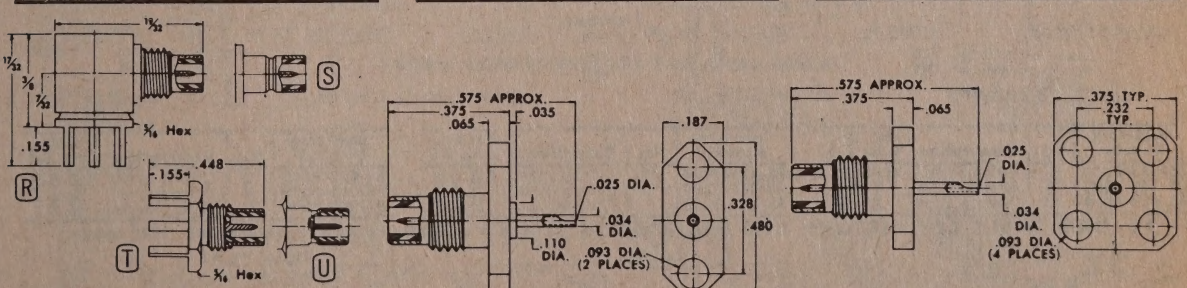
Sealectro Number	Fig.	Rear Mount Jack Type	Net Ea., Lots 1-9
50-045-0000	M	Screw-on	$1.65
51-045-0000	N	Snap-on	1.65

RECESSED BULKHEAD JACK

Sealectro Number	Fig.	Recessed Jack Type	Net Ea., Lots 1-9
51-049-0000	O	Snap-on	$2.02

REAR MOUNT BULKHEAD JACK

Sealectro Number	Fig.	Front Mount Jack Type	Net Ea., Lots 1-9
50-043-0000	P	Screw-on	$1.27
51-043-0000	Q	Snap-on	1.27



PRINTED CIRCUIT MOUNT JACKS

Sealectro Number	Fig.	Jack Type	Net Ea., Lots 1-9
Right Angle Jack			
50-053-0000	R	Screw-on	$2.48
51-053-0000	S	Snap-on	2.48
Straight Jack			
50-051-0000	T	Screw-on	2.13
51-051-0000	U	Snap-on	2.13

NARROW FLANGE JACK

Sealectro Number	Narrow Flange Jack Type	Net Ea., Lots 1-9
50-045-4524-89	Screw-on	$3.44
51-045-4524-89	Snap-on	3.44

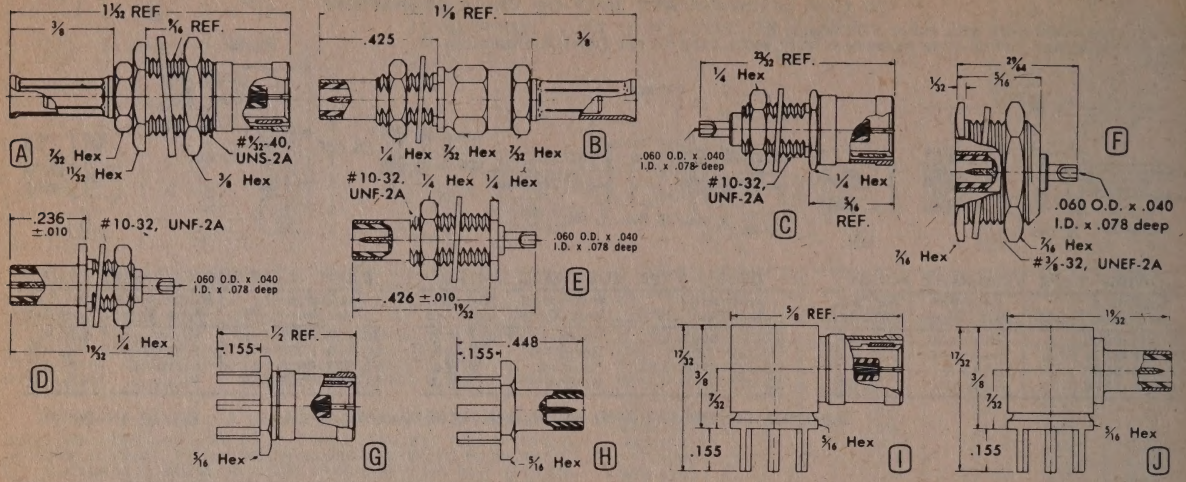
SQUARE FLANGE JACK

Sealectro Number	Square Flange Jack Type	Net Ea., Lots 1-9
50-045-4504-89	Screw-on	$3.36
51-045-4504-89	Snap-on	3.36

CONHEX SUBMINIATURE RF CONNECTORS CONTINUED ON FOLLOWING PAGE

50 OHM SLIDE-ON CABLE CONNECTORS AND RECEPTACLES

Crimp-type connectors accept RG-161/U, 174/U, 179/U, 187/U, 188/U and 316/U cables.

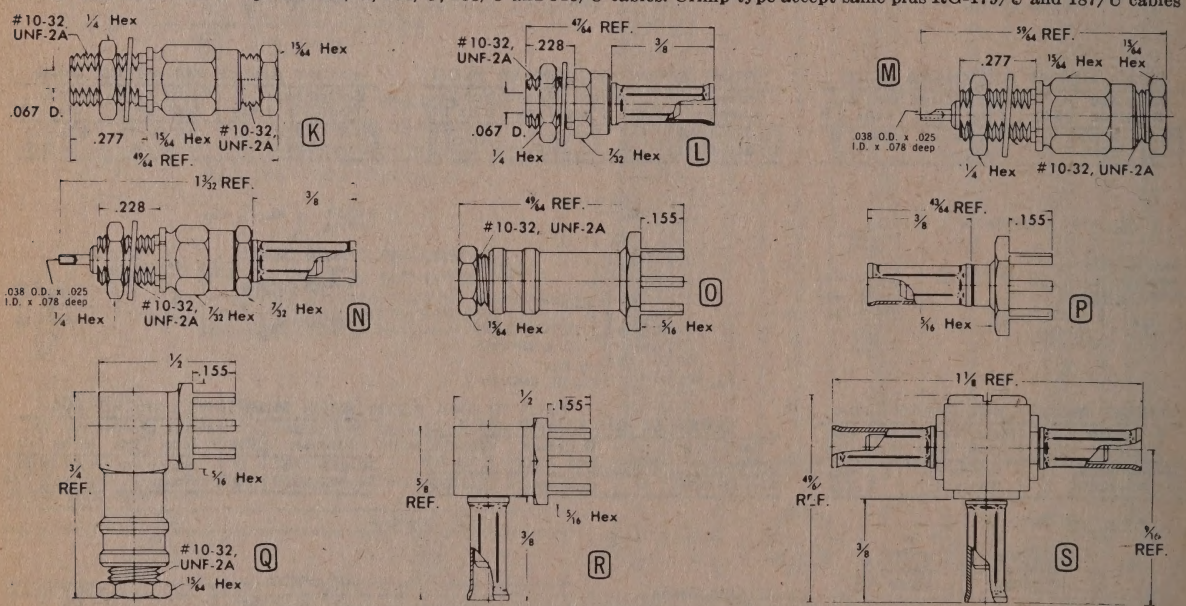


Sealectro Number	Fig.	Connector and Receptacle Description	Net Ea., Lots 1-9
52-026-0000	A	Crimp-type bulkhead Slide-on plug	$3.48
52-027-0000	B	Crimp-type bulkhead Slide-on jack	2.84
52-046-0000	C	Bulkhead receptacle Slide-on plug	2.28
52-045-0000	D	Bulkhead receptacle Slide-on jack	1.65
52-043-0000	E	Bulkhead receptacle Slide-on jack	1.27

Sealectro Number	Fig.	Receptacle Description	Net Ea., Lots 1-9
52-049-0000	F	Recessed bulkhead Slide-on jack	$2.02
52-052-0000	G	Printed Circuit Slide-on plug	3.48
52-051-0000	H	Printed Circuit Slide-on jack	2.13
52-054-0000	I	Printed Circuit Slide-on plug	3.26
52-053-0000	J	Printed Circuit Slide-on jack	2.48

50 OHM ACCESSORIES—BULKHEAD CABLE FEED-THRUS

Clamp-type connectors accept RG-161/U, 174/U, 188/U and 316/U cables. Crimp-type accept same plus RG-179/U and 187/U cables

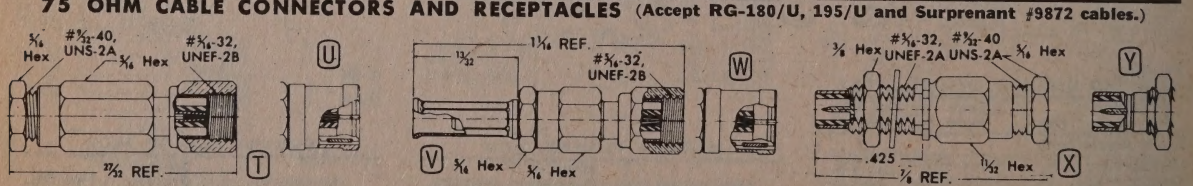


Sealectro Number	Fig.	Description	Net Ea., Lots 1-9
55-013-0000	K	Clamp type	$2.19
55-031-0000	L	Crimp type	1.98
55-018-0000	M	Clamp type	3.15

Sealectro Number	Fig.	Description	Net Ea., Lots 1-9
55-036-0000	N	Crimp type	$3.00
55-020-0000	O	Clamp type	2.86
55-038-0000	P	Crimp type	2.07

Sealectro Number	Fig.	Description	Net Ea., Lots 1-9
55-021-0000	Q	Clamp type	$2.80
55-039-0000	R	Crimp type	2.67
55-069-0000	S	Crimp type	5.91

75 OHM CABLE CONNECTORS AND RECEPTACLES (Accept RG-180/U, 195/U and Surprenant #9872 cables.)



CLAMP-TYPE STRAIGHT PLUGS

Sealectro Number	Fig.	Plug Type	Net Ea., Lots 1-9
50-107-0000	T	Screw-on	$3.15
51-107-0000	U	Snap-on	3.15

CRIMP-TYPE STRAIGHT PLUGS

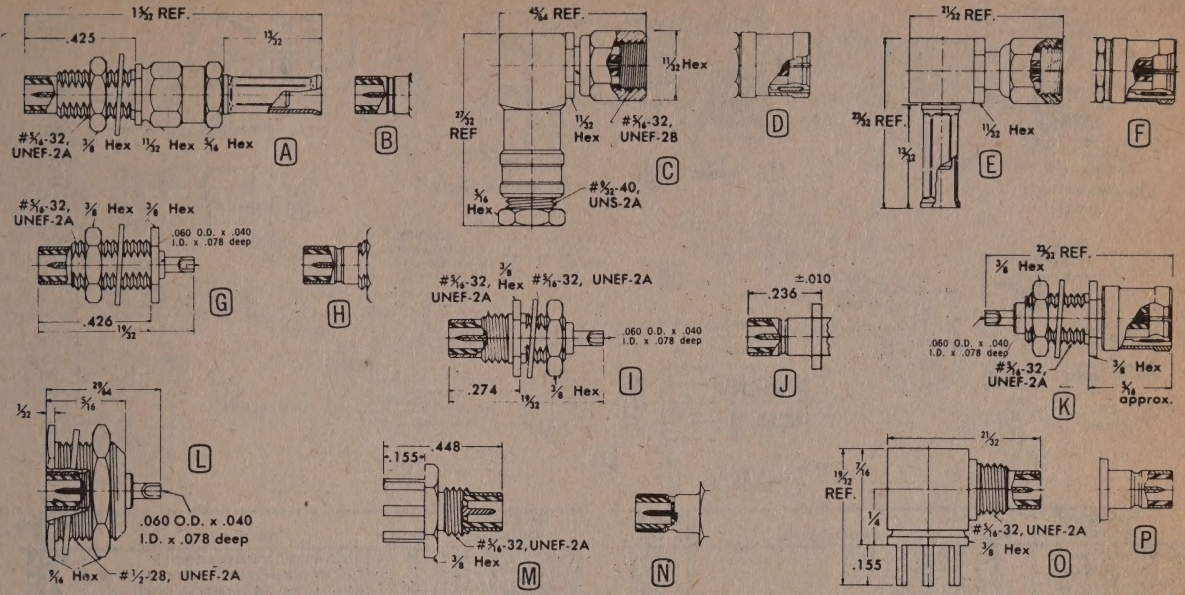
Sealectro Number	Fig.	Plug Type	Net Ea., Lots 1-9
50-124-0000	V	Screw-on	$3.07
51-124-0000	W	Snap-on	3.07

CLAMP-TYPE BULKHEAD JACKS

Sealectro Number	Fig.	Jack Type	Net Ea., Lots 1-9
50-110-0000	X	Screw-on	$5.75
51-110-0000	Y	Snap-on	5.75

75 OHM CONHEX CABLE CONNECTORS AND RECEPTACLES (CONT'D)

75 ohm connectors accept RG-180/U, 195/U and Surprenant #9872 cables.



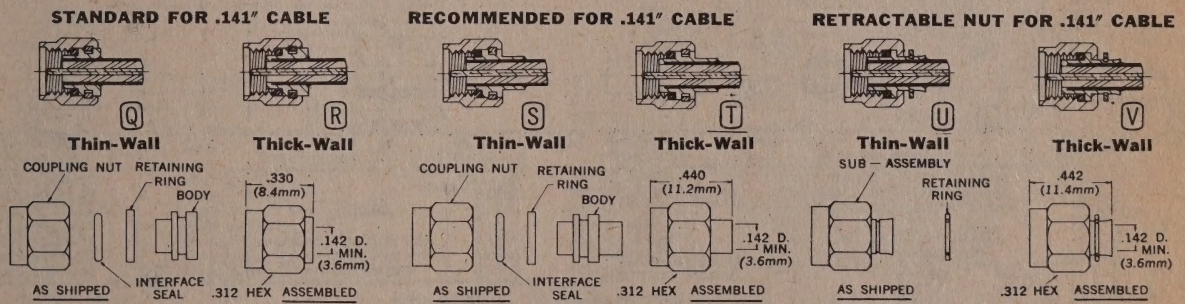
Sealectro Number	Fig.	Connector and Receptacle Description	Net, 1-9
50-127-0000	A	Crimp-type Screw-on bulkhead jack	$3.24
51-127-0000	B	Crimp-type Snap-on bulkhead jack	3.24
50-111-0000	C	Clamp-type Screw-on right-angle plug	5.11
51-111-0000	D	Clamp-type Snap-on right-angle plug	5.11
50-128-0000	E	Crimp-type Screw-on right-angle plug	4.19
51-128-0000	F	Crimp-type Snap-on right-angle plug	4.30
50-143-0000	G	Bulkhead receptacle Screw-on rear mount	1.34
51-143-0000	H	Bulkhead receptacle Snap-on rear mount	1.34

Sealectro Number	Fig.	Receptacle Description	Net, 1-9
50-145-0000	I	Bulkhead Screw-on front mount	$3.05
51-145-0000	J	Bulkhead Snap-on front mount	3.05
51-146-0000	K	Bulkhead Snap-on front mount plug	2.59
51-149-0000	L	Bulkhead Snap-on recessed jack	2.27
50-151-0000	M	Printed circuit Screw-on straight jack	3.32
51-151-0000	N	Printed circuit Snap-on straight jack	3.32
50-153-0000	O	Printed circuit Screw-on right-angle jack	4.42
51-153-0000	P	Printed circuit Snap-on right-angle jack	4.42

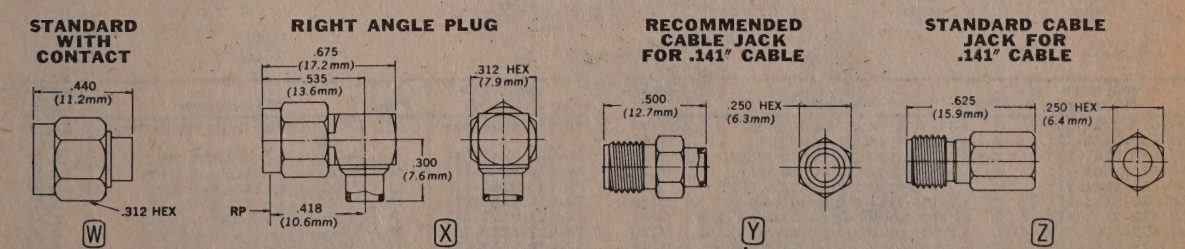
SRM 3mm MINIATURE RF CONNECTORS

DIRECT SOLDER TYPE FOR .141" SEMI-RIGID COAX

Direct-solder type straight plugs utilize the .036" (.914mm) diameter center conductor of the cable as the male contact for optimum electrical performance.



CABLE CONNECTORS FOR SEMI-RIGID CABLE

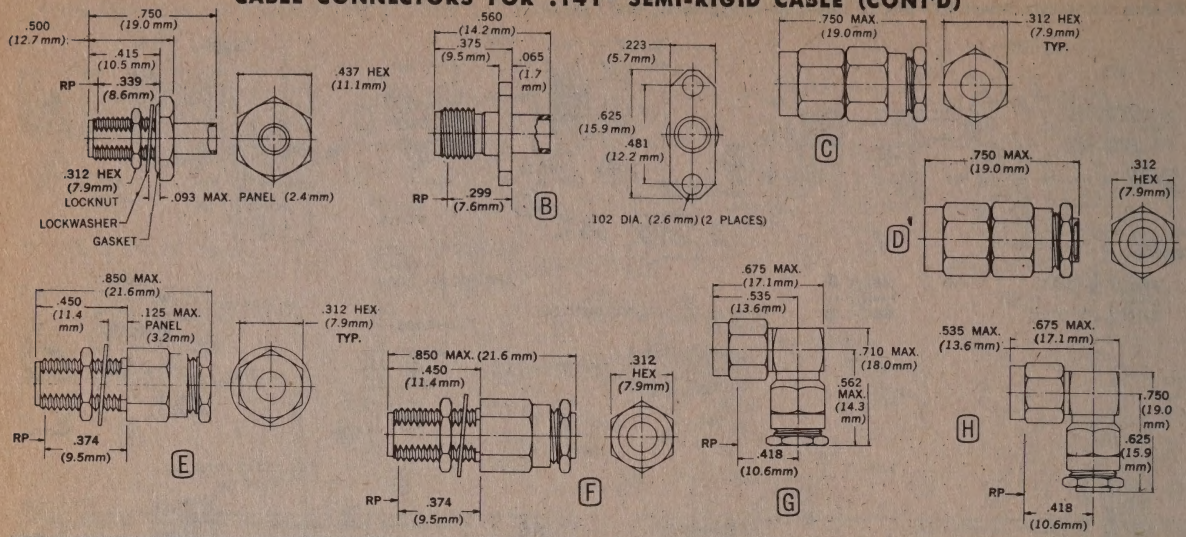


Sealectro Number	Fig.	Connector Description	Net Ea., Lots 1-9
55-607-3703-31	Q	Standard Thin-wall	$2.46
55-624-3703-31	R	Standard Thick-wall	2.86
55-607-2003-31	S	Recommended Thin-wall	2.46
55-624-2003-31	T	Recommended Thick-wall	2.86
55-607-3073-31	U	Retractable nut Thin-wall	2.59
55-624-3073-31	V	Retractable nut Thick-wall	2.98

Sealectro Number	Fig.	Connector Description	Net Ea., Lots 1-9
55-607-2203-31*	W	Standard with contact	$2.82
55-607-3702-31†	W	Standard with contact	2.82
55-611-3702-31†	X	Right-angle plug	5.86
55-611-3703-31*	X	Right-angle plug	5.86
55-608-2003-31*	Y	Recommended cable jack	3.11
55-608-3703-31*	Z	Standard cable jack	3.11

*For .140"/.142" diameter 50 ohm cable. †For .084"/.0875" diameter 50 ohm cable.

CABLE CONNECTORS FOR .141" SEMI-RIGID CABLE (CONT'D)



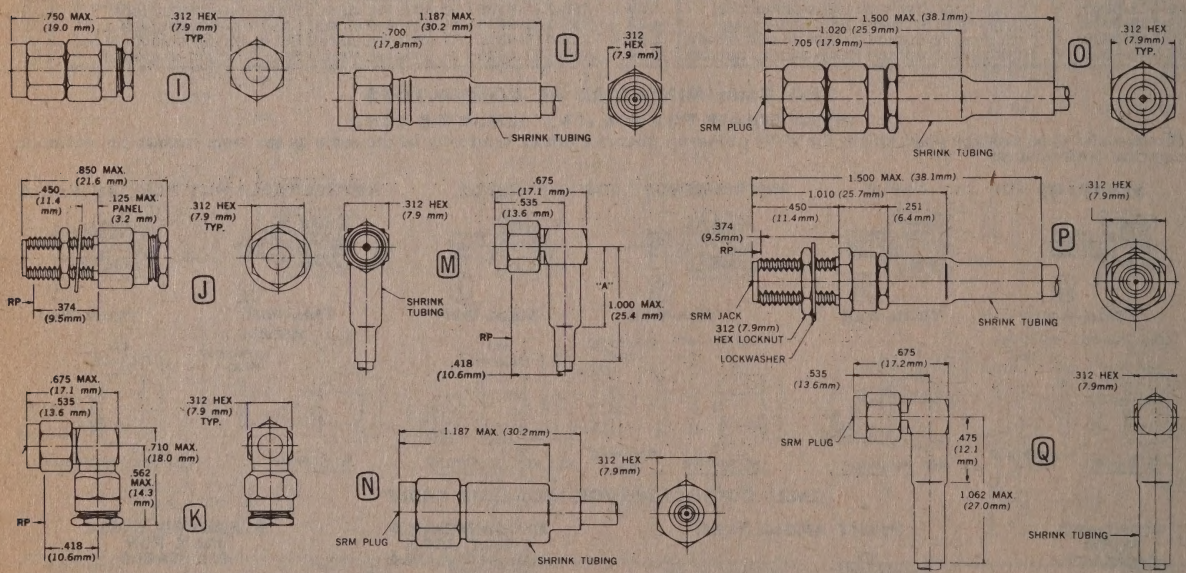
Sealectro Number	Fig.	Description	Net Ea. 1-9
55-610-3703-31*	A	Bulkhead jack	$5.86
55-610-3702-31†	A	Bulkhead jack	5.86
55-604-9073-31*	B	Panel jack	4.66
50-607-3703-31*	C	Clamp-type straight plug	4.93
50-607-9703-31*	D	Solder-clamp-type straight plug	5.28

Sealectro Number	Fig.	Description	Net Ea. 1-9
50-610-3703-31*	E	Clamp-type bulkhead jack	$6.11
50-610-9703-31*	F	Solder-clamp-type bulkhead jack	6.48
50-611-3703-31*	G	Clamp-type right-angle plug	6.73
50-611-9703-31*	H	Solder-clamp-type right-angle plug	7.10

*For .140"/.142" dia. 50 ohm cable. †For .084"/.087" dia. 50 ohm cable.

CABLE CONNECTORS FOR BRAIDED COAXIAL CABLE

All contacts captivated except 55-622-9141-31, 55-622-9188-31, 50-622-9142-31, 55-622-8188-31.



Sealectro Number	Fig.	Description	Net Ea. 1-9
50-607-3141-31*	I	Clamp-type straight plug	$4.93
50-607-3188-31†	I	Clamp-type straight plug	4.93
50-610-3141-31*	J	Clamp-type bulkhead jack	6.23
50-610-3188-31†	J	Clamp-type bulkhead jack	6.11
50-611-3141-31*	K	Clamp-type right-angle plug	7.45
50-611-3188-31†	K	Clamp-type right-angle plug	7.20
55-622-9141-31*	L	Direct-solder-type straight plug	4.47
55-622-9188-31†	L	Direct-solder-type straight plug	4.10
55-628-9141-31*	M	Direct-solder-type right-angle plug	6.42

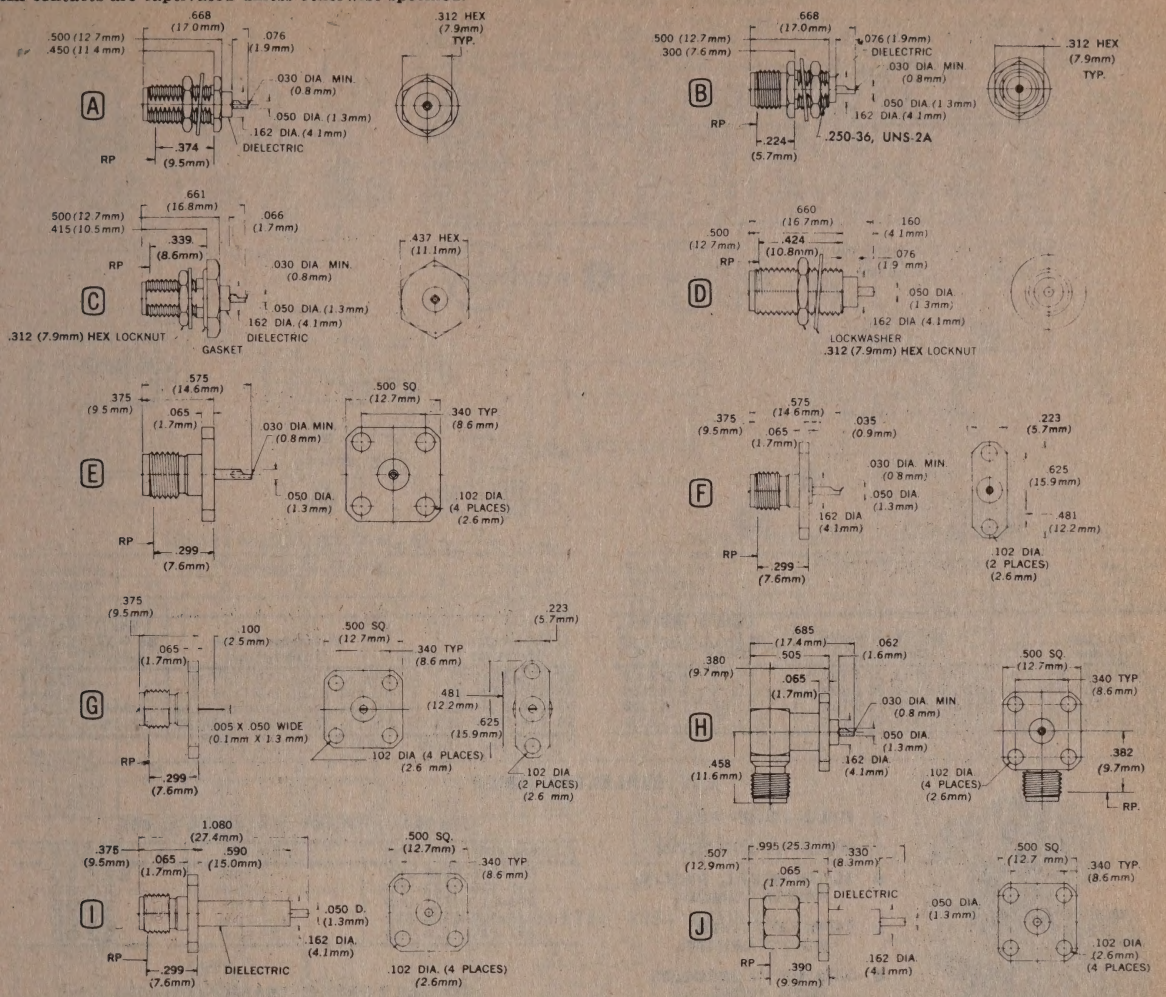
Sealectro Number	Fig.	Description	Net Ea. 1-9
55-628-9188-31†	M	Direct-solder-type right-angle plug	$6.17
50-622-9142-31‡	N	Crimp-type straight plug	4.47
50-622-9188-31‡	N	Crimp-type straight plug	4.10
50-624-9142-31‡	O	Crimp-type straight plug	5.57
50-624-9188-31†	O	Crimp-type straight plug	5.26
50-627-9142-31‡	P	Crimp-type bulkhead jack	5.65
50-627-9188-31†	P	Crimp-type bulkhead jack	5.34
50-628-9142-31‡	Q	Crimp-type right-angle plug	6.42
50-628-9188-31†	Q	Crimp-type right-angle plug	6.17

*RG-55/U, -58/U, -141/U, -142/U, -233/U, -303/U. †RG-174/U, -179/U, -187/U, -188/U, -316/U. ‡RG-55/U, -142/U, -223/U.

SEALECTRO IS NOW QPL'D TO MIL-C-39012, SERIES SMA, FOR A MOST EXTENSIVE LISTING OF VARIOUS SRM CONNECTORS. SEND TODAY FOR A COMPLETE CROSS-REFERENCE

BULKHEAD AND PANEL RECEPTACLES

All contacts are captivated unless otherwise specified.

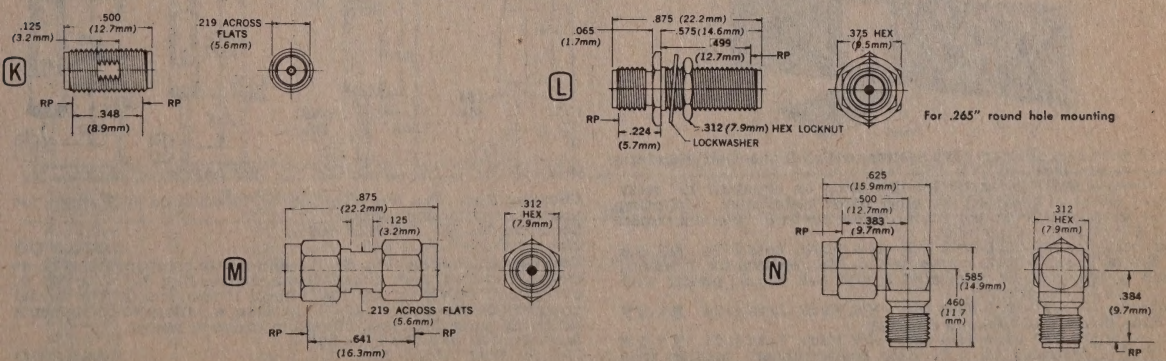


Sealectro Number	Fig.	Description	Net Ea., Lots 1-9
50-643-0000-31	A	Rear mount	$2.92
50-645-0000-31	B	Front mount	2.98
50-643-5005-31	C	Rear mount with gasket	5.05
50-643-4310-31	D	Stub contact	3.11
50-645-4504-31	E	Square flange with solder cup	4.04
50-645-4524-31	F	Narrow flange with solder cup	4.04
50-645-4575-31	G	Capt. contact square flange	4.10

Sealectro Number	Fig.	Description	Net Ea., Lots 1-9
50-645-4528-31*	G	Rem. contact narrow flange	$4.31
50-645-4576-31	G	Capt. contact square flange	4.10
50-645-4518-31*	G	Rem. contact narrow flange	4.31
50-647-4504-31	H	Right angle	7.04
50-645-4520-31	I	Extended dielectric jack	4.10
50-646-4520-31	J	Extended dielectric plug	5.13

*Removable contact.

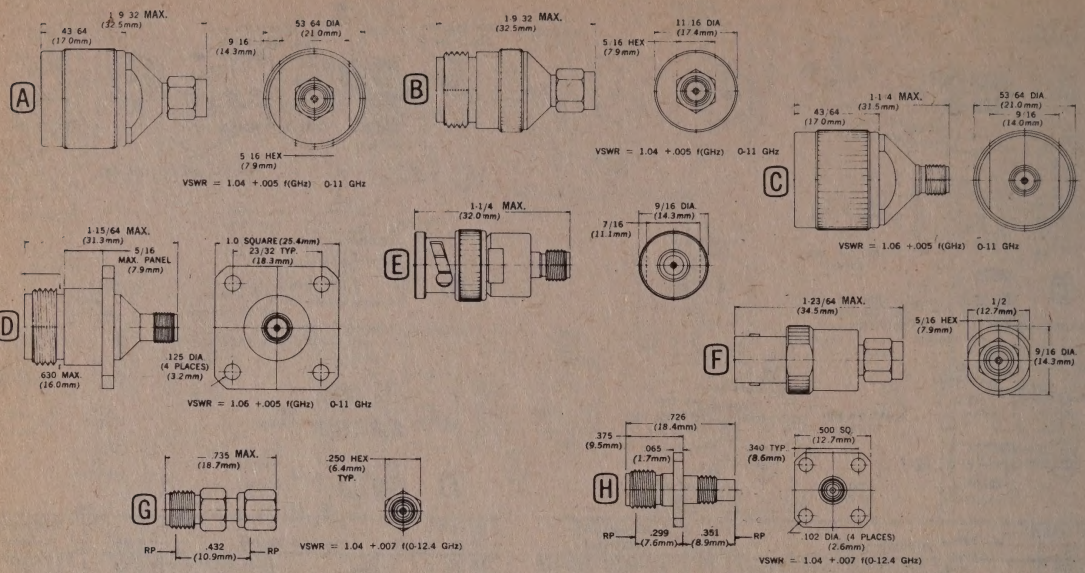
ADAPTERS, IN-SERIES TYPES



Sealectro Number	Fig.	In-Series Description	Net Ea., Lots 1-9
50-672-0000-31	K	Jack-jack	$4.04
50-675-0000-31	L	Bulkhead jack-jack	5.34

Sealectro Number	Fig.	In-Series Description	Net Ea., Lots 1-9
50-673-0000-31	M	Plug-plug	$4.41
50-678-0000-31	N	Right-angle plug-jack	7.76

ADAPTERS, BETWEEN-SERIES TYPES

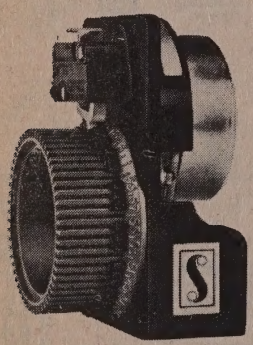


Sealectro Number	Fig.	Between Series Description	VSWR at 0–12.4 GHz	Net Ea., Lots of 1-9
50-673-6700-89	A	SRM Plug/N-Plug	1.04	$17.60
50-674-6701-89	B	SRM Plug/N-Jack	1.04	16.68
50-674-6700-89	C	SRM Jack/N-Plug	1.06	17.60
50-675-6701-89	D	SRM Jack/N-Jack	1.06	18.90

Sealectro Number	Fig.	Between Series Description	VSWR at 0–11 GHz	Net Ea., Lots of 1-9
50-674-6800-89	E	SRM Jack/BNC Plug	.....	$16.44
50-674-6801-89	F	SRM Plug/BNC Jack	.....	16.44
50-674-6201-31	G	SRM Jack/Conhex Plug	1.04*	13.46
50-075-6201-31	H	SRM Jack/Conhex Jack	1.04*	14.24

*+.007; all others +.005.

LCT SEALECTROTIMER



- FIELD-ADJUSTABLE
- MULTIPLE FUNCTION
- ECONOMICAL, PRECISE PROGRAMMING
- COMPLETE FIELD ADJUSTABILITY
- SETS UP IN SECONDS WITH 100% REPEATABILITY
- UP TO 60 ON/OFF FUNCTIONS/REVOLUTION
- CONTACTS RATED 15 AMPS

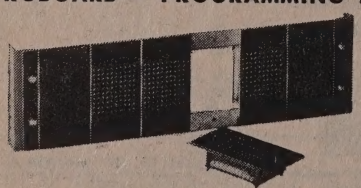
SINGLE CONTACT SEALECTROTIMERS

Sealectro Number	Speed	Net Each
095-016-6500-000	1 rpm	$22.00
095-016-6521-000	1 rph	22.00
095-016-6522-000	1 rpd	22.00
095-016-6524-000	2/5 rpm	22.00
095-016-6525-000	1/24 rpm	22.00

DOUBLE CONTACT SEALECTROTIMERS

Sealectro Number	Speed	Net Each
095-026-6500-000	1 rpm	$24.00
095-026-6521-000	1 rph	24.00
095-026-6522-000	1 rpd	24.00
095-026-6524-000	2/5 rpm	24.00
095-026-6525-000	1/24 rpm	24.00

SEALECTROBOARD™ PROGRAMMING BOARDS



Build your own programming systems with 'off-the-shelf' standard components. **Size:** 19¼" x 5⅞".

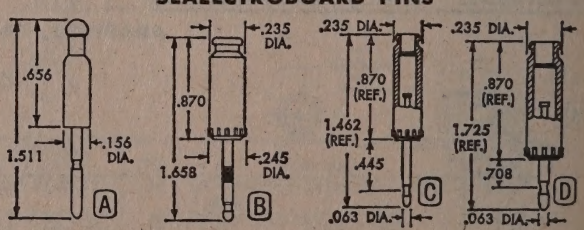
1. Module Rail: Designed for mounting on standard 19" relay racks. Offset is provided for flush panel installation. Mounting holes are provided for any combination (up to 6) of blank panels and Sealectroboard modules.
Sealectro No. 710-2000-10-0-000—Net Each, Lots 1–24..**$3.88**

2. Blank Panel: Fills in unused width. May be used for mounting other components or associated equipment. Blank plastic with white filler for engraving.
Sealectro No. 780-1060-00-0-000—Net Each, Lots 1–24..**$1.77**

3. Side Plate: Provides end dressing.
Sealectro No. 708-7000-50-0-000—Net Each, Lots 1–24..**$1.23**

4. Matrix Module: 10 x 10 hole Sealectroboard module with bussed upper and lower contacts. Same width as that of blank panels and thus may be added at any time by merely replacing blank panels. Features terminals which are combination solder and clip-on types. Contact strips are silver plated.
Sealectro No. 070-101-0600-600—Net Each, Lots 1–6..**$25.40**

SEALECTROBOARD PINS

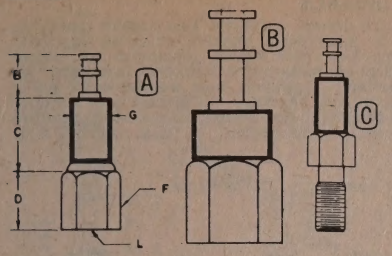


Shorting Pins (Fig. A): Available in 10 standard EIA colors for program or function coding.
Sealectro No. 077-200-0020-608—
Net per 1000, Lots 1–249.....**$120.00**

Component Holders (Fig. B): Accommodate components, such as diodes, resistors, with dimensions not exceeding ⅜" l. x ⅛" d. overall and with leads #23 AWG max., 1" min. length. For special applications, units are available to house a variety of components including potentiometers, miniature lamps or relays.
Sealectro No. 076-200-3250-608—
Net per 1000, Lots 1–249.....**$560.00**

Wireable Pins: Provides a means of shorting pin programming with the capacity of connecting external circuitry to Sealectroboards including test equipment and function generators.
Sealectro No. 077-100-0050-608 (Fig. C)—Net/1000...**$380.00**
Sealectro No. 077-200-0060-608 (Fig. D)—Net/1000...**380.00**

SEALECTRO PRESS-FIT® Teflon* Terminals

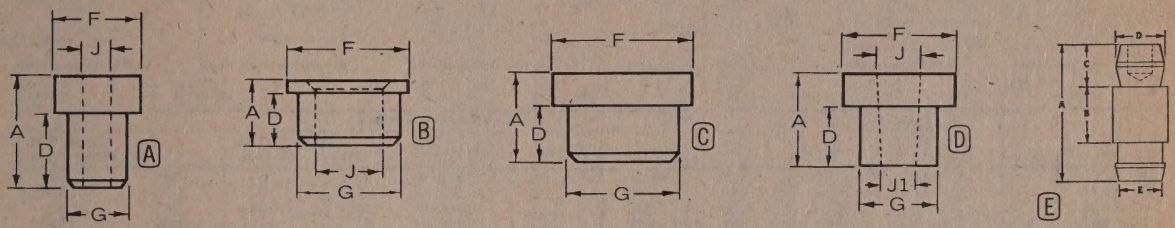


METAL BASED INSULATED TEFLON STAND-OFFS

Teflon insulated stand-offs have brass lugs, standard tin or tin/lead plating. Base is brass, cadmium with chromate coating. Part Nos. 003-5707 and 023-5705 supplied with Military specifications mounting hardware. *Registered Dupont Corp. trademark

Sealectro Number	Fig.	Cap., pF	Nom. Rating V, rms	Dimensions, Inches B	C	D	F Hex	G Dia.	L Thd.	Net per 1000
003-5701	A	0.50	1700	.136	.229	.181	5/32	.125	4-40	$191.00
023-5702	B	0.60	2200	.305	.156	.258	1/4	.245	6-32	250.00
003-5700	C	0.55	2200	.156	.218	.218	5/32	.125	4-40	284.00
023-5701	C	0.65	2200	.295	.165	.180	1/4	.245	6-32	270.00
003-5707	C	0.55	2200	.156	.218	.218	5/32	.125	4-40	319.00
023-5705	C	0.65	2200	.295	.165	.180	1/4	.245	6-32	295.00

TEFLON BUSHINGS



SINGLE SHOULDER (FIG. A)

Sealectro Number	Dimensions, Inches G	A	D	J	F	Net per 1000
119-0040	.093	.140	.100	.040	.125	$80.00
119-0041	.093	.140	.100	.035	.125	60.00
119-0042	.093	.100	.060	.037	.125	48.00
119-0066	.093	.100	.080	.038	.125	46.00
119-0155	.093	.100	.080	.048	.125	42.00
119-0014	.148	.140	.100	.060	.172	56.00
119-0078	.148	.140	.100	.073	.172	76.00

SINGLE SHOULDER, COUNTER-SUNK HOLE (FIG. B)

Sealectro Number	Dimensions, Inches G	A	D	J	F	Net per 1000
119-0124	.185	.250	.204	.140	.250	$90.00
119-0167	.185	.108	.083	.120	.218	76.00

SINGLE SHOULDER, NO HOLE (FIG. C)

Sealectro Number						
119-0143	.185	.672	.626	.....	.218	$104.00

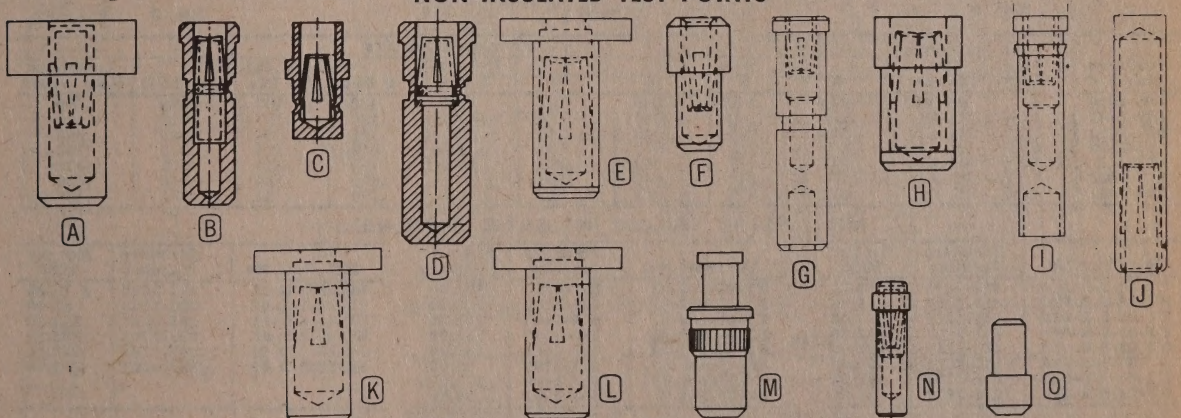
SINGLE SHOULDER, TAPERED HOLE (FIG. D)

Sealectro Number	Dimensions, Inches G	A	D	F	J	J1	Net per 1000
119-0107	.156	.153	.108	.200	.102	.064	$46.00

SPACER/BUSHINGS (FIG. E)

Sealectro Number	Dimensions, Inches A	B	C	D	E	Insert Tool	Net per 1000
119-0710	1.021	.750	.141	.187	.150	B-44-4	$111.00
119-0709	.958	.687	.141	.187	.150	B-44-4	107.00
119-0708	.896	.625	.141	.187	.150	B-44-3	104.00
119-0707	.833	.562	.141	.187	.150	B-44-3	97.00
119-0706	.771	.500	.141	.187	.150	B-44-3	94.00
119-0705	.708	.437	.141	.187	.150	B-44-2	87.00
119-0704	.646	.375	.141	.187	.150	B-44-2	80.00
119-0703	.583	.312	.141	.187	.150	B-44-2	76.00
119-0702	.521	.250	.141	.187	.150	B-44-1	73.00
119-0701	.458	.187	.141	.187	.150	B-44-1	64.00
119-0700	.396	.125	.141	.187	.150	B-44-1	60.00

NON-INSULATED TEST POINTS



Shell material, brass. Contact material, beryllium copper. Part No. 016-0700 has non-insulated shell for solder installation.

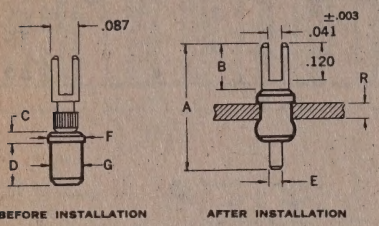
Sealectro Number	Fig.	To Accept Probe Size, Inches	Plating	Overall Size, Inches Length	Diameter	Net per 1000
016-0700	A	.030 x .188	.....	.215	.148	$285.00
006-4000	B	.030 x .250	Gold flash over silver	.281	.090	288.00
006-4001	C	.041 x .125	Shell—lead/tin; Lug—gold plated	.180	.075	239.00
006-4002	D	.041 x .300	Gold flash over silver	.345	.118	383.00
006-4004	E	.030 x .130	Gold over copper	.165	.120	302.00
006-4006	F	.025 x .150	Gold over silver	.172	.080	211.00
006-4007	G	.040–.042 x .300	Gold over copper	.500	.118	478.00
006-4008	H	.040 x .125	Gold over copper	.164	.093	200.00
006-4010	I	.050 x .295	Gold over silver	.468	.115	327.00
006-4011	J	.062 x .485	Shell—bright acide tin; contact—gold over copper	.550	.112	271.00
006-4013	K	.028–.034 x .130	Gold over copper	.210	.120	348.00
006-4014	L	.038–.044 x .130	Gold over copper	.210	.120	348.00
006-4015	M	.025 x .187	Gold over copper	.175	.093	306.00
006-4016	N	.017 dia.	Gold over copper	.301	.050	225.00
006-4017	O	.017 x .150	Gold over silver	.172	.080	211.00

SEALECTRO PRESS-FIT® Teflon* Terminals

NEW RIVET-LOC™ TEFLON INSULATED TERMINALS

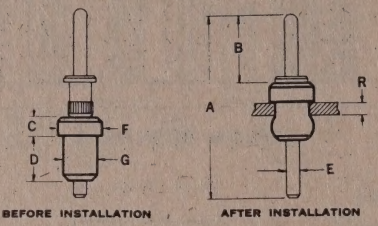
Rivet Loc Teflon insulated terminals for chamfered or non-chamfered holes install the right way, from the major diameter side, in one simple smooth operation with all insertion forces working together. Employs a simple riveting and locking of the Teflon bushing assuring a better finished installation. Seating flange locates positively on major diameter of Teflon bushing. Final seating and locking of the terminal in the chassis is uniform even with wide parameters of tool settings. Knurled portion of lug always locates in chassis area for greater stability. The smaller metal lug mass in proportion to the Teflon bushing provides improved dielectric strength. Provides more Teflon insulation for better mechanical and electrical characteristics. Numbers listed are currently considered standard. However, new numbers are being added constantly. Almost any terminal configuration or requirement can be met with the Rivet-Loc design. Submit your requirements, or write or phone for information. *Reg. DuPont TM.

FEED-THRUS



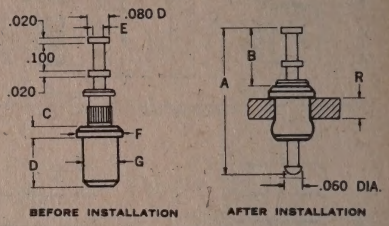
BEFORE INSTALLATION — AFTER INSTALLATION

FIG. 1



BEFORE INSTALLATION — AFTER INSTALLATION

FIG. 2



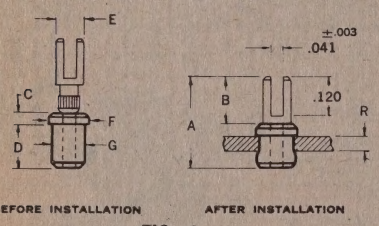
BEFORE INSTALLATION — AFTER INSTALLATION

FIG 3

Sealectro Number	Fig.	Insertion Tool Number	Dimensions, Inches A	B	C	D	E Dia.	F Dia.	±.002 G Dia.	±.015 R	Insertion Hole ±.002
001-3400	1	R3-A3	.387	.140	.040	.125	.040	.130	.107	.045	.109
001-3401	1	R3-A3	.434	.140	.040	.172	.040	.130	.107	.075	.109
001-1401	2	R4-A2	.515	.210	.040	.125	.040	.125	.084	.045	.086
001-1400	2	R2-A4	.656	.235	.040	.125	.030	.135	.113	.040	.117
011-1400	2	R5-A1	.687	.265	.075	.160	.050	.172	.134	.045	.136
011-1401	2	R5-A1	.887	.465	.075	.160	.050	.172	.134	.045	.136
011-1402	2	R5-A1	.730	.465	.075	.160	.050	.172	.134	.045	.136
011-1403	2	R4-A1	.570	.210	.040	.150	.040	.172	.134	.045	.136
011-1404	2	R4-A1	.515	.210	.040	.180	.040	.172	.134	.075	.136
011-2400	3	R1-A1	.500	.210	.040	.150	.040	.172	.134	.045	.136
011-2401	3	R1-A1	.530	.210	.040	.180	.040	.172	.134	.075	.136
011-2402	3	R1-A1	.458	.210	.040	.150	.040	.172	.134	.045	.136

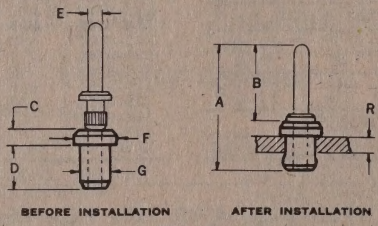
Plating: Bright electro-tin, a smooth finish featuring extraordinary soldering characteristics and shelf life, is standard. Other finishes including all MIL-Spec numbers are available upon special order.

STAND-OFFS



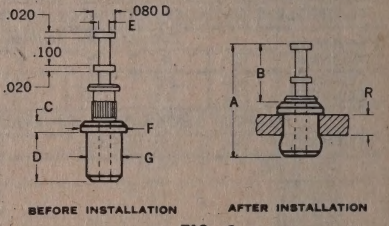
BEFORE INSTALLATION — AFTER INSTALLATION

FIG. 4



BEFORE INSTALLATION — AFTER INSTALLATION

FIG. 5



BEFORE INSTALLATION — AFTER INSTALLATION

FIG. 6

Sealectro Number	Fig.	Insertion Tool Number	Dimensions, Inches A	B	C	D	E Dia.	F Dia.	±.002 G Dia.	±.015 R	Insertion Hole ±.002
003-3400	4	R3-A3	.275	.140	.040	.125	.087	.130	.107	.075	.109
003-3401	4	R3-A3	.322	.140	.040	.172	.087	.130	.107	.075	.109
003-1400	5	R4-A2	.345	.210	.040	.125	.040	.125	.084	.045	.086
013-1400	5	R4-A1	.370	.210	.040	.150	.040	.172	.134	.045	.136
013-1401	5	R4-A1	.405	.210	.040	.180	.040	.172	.134	.075	.136
013-2400	6	R1-A1	.370	.210	.040	.150	.040	.172	.134	.045	.136
013-2401	6	R1-A1	.400	.210	.040	.180	.040	.172	.134	.075	.136

MIL-T-55155 TEFLON INSULATED TERMINALS

MIL Part No.	Sealectro Number	Net per 1000
FT-03-9-B-01A	011-4021	$ 69 00
FT-03-9-B-02A	011-1004	73.00
FT-03-9-B-03A	011-1065	173.00
FT-03-9-B-04A	001-1007	87.00
FT-03-9-B-05A	001-1015	121.00
FT-04-9-B-01A	011-2011	125.00
FT-04-9-B-02A	011-2103	111.00
FT-04-9-B-03A	001-2004	87.00

MIL Part No.	Sealectro Number	Net per 1000
FT-05-9-B-01	001-6033	$163.00
FT-05-9-B-02	001-6001	159.00
FT-05-9-B-03	011-6015	125.00
FT-06-9-B-01	002-6000	128.00
FT-06-9-B-02	012-6004	149.00
SE-07-9-B-01	013-2004	80.00
SE-07-9-B-02	013-2046	173.00
SE-07-9-B-03	003-2003	94.00

MIL Part No.	Sealectro Number	Net per 1000
SE-08-9-B-01	013-1000	$ 73.00
SE-08-9-B-02	003-1009	83.00
SE-09-9-E-01	003-5707	319.00
SE-09-9-E-02	023-5705	295.00
SE-10-9-D-01	003-5701	270.00
SE-10-9-D-02	023-5702	250.00

MIL-T-55155 NON-INSULATED TERMINALS

MIL Part No.	Sealectro Number	Net Price
SE-11 x C01	229-2015	
SE-11 x C02	229-2016	
SE-11 x C03	229-2017	
SE-12 x C01A	229-2018	
SE-12 x C02A	229-2019	
SE-12 x C03A	229-2020	
SE-12 x C04A	229-2021	Prices
SE-12 x C05A	229-2022	on
SE-12 x C06A	229-2023	Request
SE-12 x C07A	229-2024	
SE-12 x C08A	229-2025	
SE-12 x C09A	229-2026	
SE-13 x C01A	229-2030	
SE-13 x C02A	229-2031	
SE-13 x C03A	229-2032	
SE-13 x C04A	229-2033	

MIL Part No.	Sealectro Number	Net Price
SE-13 x C05A	229-2034	
SE-13 x C06A	229-2035	
SE-14 x C01A	229-2036	
SE-14 x C02A	229-2037	
SE-14 x C03A	229-2038	
SE-14 x C04A	229-2039	
SE-14 x C05A	229-2040	Prices
SE-14 x C06A	229-2041	on
SE-15 x C01A	229-2042	Request
SE-15 x C02A	229-2043	
SE-15 x C03A	229-2044	
SE-15 x C07A	229-2048	
SE-15 x C08A	229-2049	
SE-15 x C09A	229-2050	
SE-16 x C01A	229-6006	
SE-16 x C02A	229-6010	

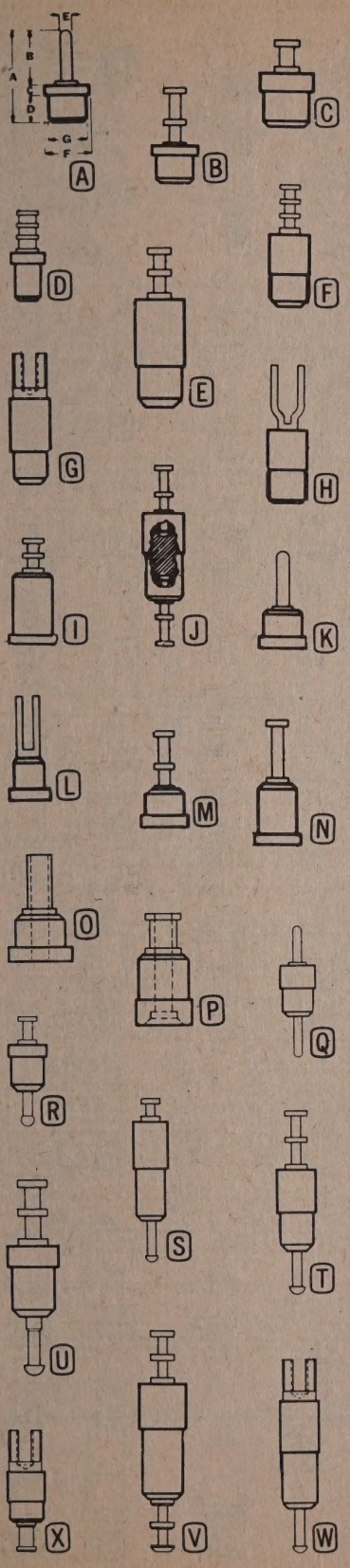
MIL Part No.	Sealectro Number	Net Price
SE-16 x C03A	229-6011	
SE-17 x C01A	229-6012	
SE-17 x C02A	229-6013	
SE-17 x C03A	229-6014	
SE-23 x C01	229-2027	
SE-23 x C02	229-2014	
SE-23 x C03	229-2028	Prices
SE-23 x C04	229-2029	on
SE-24 x C01	229-6036	Request
SE-24 x C02	229-6037	
SE-24 x C03	229-6038	
SE-24 x C04	229-6039	
SE-25 x C01	229-2056	
SE-25 x C02	229-2057	
SE-25 x C03	229-2058	
SE-25 x C04	229-2059	

SEALECTRO

Teflon* Terminals

Simplest, fastest, most economical terminal installation known. Practically unrestricted as to chassis material and thickness. Inexpensive insertion tool fits any drillpress or hand arbor. Terminal, under pressure, slips into hole for rigid, permanent, trouble-free installation. Use tool listed for each particular terminal. Miniature units conservatively rated 4000 volts. Available in colors; designed for color coding.

*Registered DuPont trademark.



MINIATURE STAND-OFFS

Sealectro Number	Fig.	Tool No.	Cap., pF	Nom. Rating V rms	Dimensions, Inches A	B	C	D	F Dia.	G† Dia.	Net per 1000
013-1000	A	B-8	0.45	1000	.350	.210	.040	.100	.172	.148	$ 73.00
013-1001	A	B-8	0.50	1000	.410	.210	.040	.160	.172	.148	90.00
013-1009	A	B-8	0.50	1000	.590	.450	.040	.100	.172	.148	146.00
013-1010	A	B-8	0.40	1000	.460	.320	.040	.100	.172	.148	177.00
013-1014	A	B-8	0.40	1000	.370	.210	.050	.110	.172	.148	97.00
003-1004	A	B3-10	0.35	750	.213	.093	.031	.089	.125	.093	170.00
003-1007	A	B3-1	0.30	1000	.262	.147	.040	.075	.125	.093	114.00
003-1008	A	B3-1	0.40	1000	.299	.174	.040	.085	.125	.093	87.00
013-1023	A	B-8	0.45	1000	.370	.210	.040	.120	.172	.148	101.00
003-1009	A	B3-1	0.60	1000	.350	.210	.040	.100	.125	.093	83.00
013-1028	A	B-8	0.45	1000	.365	.193	.040	.132	.172	.148	125.00
003-2000	B	B3-2C	0.40	1000	.310	.170	.040	.100	.125	.093	142.00
013-2001	B	B-8	0.40	1000	.350	.210	.040	.100	.172	.148	73.00
013-2003	B	B-8	0.50	1000	.375	.210	.040	.125	.172	.148	101.00
013-2004	B	B-8	0.40	1000	.360	.210	.040	.110	.172	.148	80.00
003-2003	B	B3-2B	0.60	1000	.350	.210	.040	.100	.125	.093	94.00
013-2007	B	B-8	0.55	1000	.500	.210	.040	.250	.172	.148	146.00
013-2009	B	B-18	0.40	1000	.375	.210	.040	.125	.218	.185	159.00
013-2011	B	B-8	0.50	1700	.428	.210	.093	.125	.172	.148	125.00
013-2013	B	B-8	0.30	1700	.461	.210	.093	.158	.172	.148	156.00
013-2016	B	B-8	0.50	1000	.334	.154	.040	.140	.172	.148	132.00
013-2017	B	B-8	0.35	1000	.254	.154	.040	.060	.172	.148	142.00
013-2019	B	B-8	0.50	1000	.455	.250	.040	.165	.172	.148	83.00
013-2020	B	B-8	0.60	1000	.540	.250	.040	.250	.172	.148	132.00
013-2041	C	B-8	0.30	1000	.250	.110	.040	.100	.172	.148	156.00
003-2004	D	B3-2A	0.40	1000	.334	.153	.041	.140	.125	.093	184.00
003-2007	E*	B3-A	0.50	1500	.346	.156	.103	.087	.125	.104	166.00
013-2045	E*	B9-3	0.50	2500	.482	.250	.125	.110	.172	.148	166.00
013-2046	E*	B12	0.30	2500	.431	.156	.125	.150	.187	.165	173.00
013-2048	E*	B12	0.50	2500	.522	.246	.125	.150	.187	.165	173.00
013-2049	E*	B12-2	0.60	2000	.556	.281	.125	.150	.187	.165	184.00
013-2051	E*	B12-2	0.60	2000	.556	.281	.125	.150	.187	.171	170.00
013-2053	E*	B12	0.50	2500	.485	.210	.125	.150	.218	.171	201.00
013-2058	E*	B13	0.20	2800	.493	.156	.187	.150	.187	.165	187.00
013-2059	E*	B13	0.20	2800	.493	.156	.187	.150	.187	.171	184.00
013-2060	E*	B13	0.30	2800	.583	.246	.187	.150	.187	.165	191.00
013-2061	E*	B13	0.35	2800	.584	.250	.187	.147	.187	.171	170.00
013-2062	E*	B13-3B	0.65	2500	.618	.281	.187	.150	.187	.165	194.00
023-2004	E*	B-24	0.30	2800	.649	.250	.187	.212	.250	.204	159.00
013-2065	E*	B9-3	0.30	3200	.598	.250	.187	.165	.172	.148	170.00
013-2069	E*	B12-3	0.20	3100	.556	.156	.250	.150	.187	.165	180.00
013-2064	F*	B12	0.60	2500	.555	.218	.187	.150	.187	.171	194.00
013-3005	G*	B11	0.70	2000	.478	.203	.125	.150	.187	.171	184.00
013-3007	G*	B11	0.70	2300	.540	.203	.187	.150	.187	.171	198.00
013-3008	G*	B11	0.70	2300	.540	.203	.187	.150	.187	.171	211.00
013-3013	G*	B11	0.45	2700	.603	.203	.250	.150	.187	.171	225.00
013-3016	G*	B11	0.30	4200	.753	.203	.400	.150	.187	.171	246.00
013-3019	H*	B11-C	0.85	2000	.633	.296	.187	.150	.187	.171	312.00
014-2020	I*	B18-1B	0.40	3000	.487	.154	.046	.287	.218	.185‡	152.00
014-2021	I*	B18-1B	0.20	3000	.583	.250	.046	.287	.218	.185‡	152.00
015-2003	J*	B13	0.20	2000	.819	.210	.187	.212	.187	.148	250.00
015-2000	J	B17	0.20	1000	.640	.210	.050	.170	.205	.169	243.00

REVERSE STAND-OFFS

014-1000	K	B8-X1	0.40	1200	.350	.210	.040	.100	.172	.148	$ 76.00
014-1004	K	B8-X1	0.40	2000	.500	.210	.040	.250	.172	.148	180.00
004-1001	K	B-3-B	0.40	500	.250	.130	.031	.089	.125	.093	159.00
004-1007	K	B-3-2X	0.40	500	.350	.210	.040	.100	.125	.093	107.00
004-3000	L*	B-3-2X	0.50	500	.350	.210	.040	.100	.125	.104	222.00
004-2000	M	B1-2	0.40	500	.310	.170	.040	.100	.125	.093	139.00
014-2001	M	B8-X-1	0.40	1200	.350	.210	.040	.100	.172	.148	76.00
014-2007	M	B18	0.30	1700	.375	.210	.040	.125	.218	.185	149.00
014-2009	M	B8-X-1	0.40	1500	.296	.156	.040	.100	.172	.148	118.00
014-2015	M	B10-X	0.40	1500	.405	.210	.040	.155	.188	.171	139.00
014-2011	N	B8-X-1	0.50	1700	.455	.227	.040	.187	.172	.148	149.00

*Silver plated; all others tin or tin/lead plated. †+.002″−.000″. ‡=.001″.

MINIATURE FEED-THRUS

Sealectro Number	Fig.	Tool No.	Cap., pF	Nom. Rating V rms	Dimensions, Inches A	B	C	D	F Dia.	G† Dia.	Net per 1000
002-6000	O*	B6-C	0.30	750	.193	.105	.025	.063	.150	.125	$128.00
012-6004	O*	B8-X-2	0.70	1000	.367	.207	.050	.110	.172	.148	149.00
012-6014	P*	B10	0.60	1200	.381	.133	.093	.155	.188	.177	191.00
011-1065	Q*	B12	0.60	1700	.675	.200	.125	.150	.187	.165	173.00
011-2049	R	B10	0.75	1700	.540	.133	.063	.171	.187	.171	166.00
011-2053	S	B19-A	0.80	2000	.640	.133	.093	.210	.215	.185‡	222.00
011-2062	S	B13	0.70	2200	.740	.125	.187	.212	.187	.171	208.00
011-2072	S	B12-3	0.70	3000	.865	.125	.250	.275	.187	.171	222.00
011-2059	T	B9-3	0.80	1500	.836	.250	.187	.165	.172	.148	211.00
011-2061	T	B9-3	0.85	1500	.836	.250	.125	.230	.172	.148	225.00
021-2006	T	B19-A	1.00	2500	.828	.281	.187	.212	.218	.187	225.00
011-2064	T	B13-3B	0.80	2000	.836	.250	.187	.212	.187	.171	211.00
011-2055	U	B19-A	1.00	1200	.828	.281	.094	.210	.218	.185‡	229.00
011-2057	U	B12	1.00	1500	.823	.281	.125	.200	.187	.171	215.00
021-2010	V	B24-A	1.25	3000	1.187	.281	.250	.375	.250	.218	267.00
011-3014	W	B11	0.80	2000	.821	.203	.187	.212	.187	.171	250.00
011-3028	X	B11	0.90	1000	.594	.203	.150	.100	.187	.171	267.00

*Tin or tin/lead plated; all others silver plated. †+.002″−.000″. ‡=.001″.

FEED-THRUS

Sealectro Number	Fig.	Tool No.	Cap., pF	Nom. Rating V rms	Dimensions, Inches A	B	C	D	F Dia.	G† Dia.	Net per 1000
001-2013	A	B0	0.70	400	.510	.100	.040	.100	.093	.075	$184.00
001-3012	B	B0-1	0.70	400	.510	.100	.040	.100	.093	.075	184.00
001-6024	C	B0-1	0.70	400	.588	.120	.040	.100	.093	.075	236.00
001-1038	D	B0-2	0.70	400	.550	.275	.040	.100	.093	.075	173.00
011-1001	E	B8	0.65	1000	.630	.210	.040	.170	.172	.148	128.00
011-1004	E	B8-16	0.50	1000	.515	.210	.040	.100	.172	.148	73.00
011-1006	E	B8	0.70	1000	.710	.210	.040	.250	.172	.148	152.00
011-1008	E	B8-16	0.50	1000	.443	.210	.040	.100	.172	.148	73.00
011-1009	E	B8-16	0.70	1000	.725	.210	.040	.100	.172	.148	114.00
011-1011	E	B8-16	0.55	1000	.562	.210	.040	.100	.172	.148	139.00
011-1015	E	B8-18	0.50	1200	.535	.210	.050	.110	.172	.148	87.00
021-1000	E	B22	0.50	1200	.515	.210	.040	.100	.250	.218	177.00
001-1002	E	B3-1	0.50	500	.375	.147	.040	.075	.125	.093	135.00
011-1021	E	B8-16	0.60	1000	.535	.210	.040	.120	.172	.148	125.00
011-1023	E	B8-16	0.50	1000	.535	.210	.040	.132	.172	.148	101.00
011-1025	E	B8-16	0.50	1000	.407	.125	.040	.132	.172	.148	152.00
011-4021	E	B8-16	0.50	1000	.375	.125	.040	.100	.172	.148	69.00
001-1007	E	B3-1	0.75	500	.515	.210	.040	.100	.125	.093	87.00
001-1008	E	B3-1	0.65	500	.453	.156	.040	.100	.125	.093	125.00
011-1038	E	B8-16	0.60	1000	.535	.210	.040	.160	.172	.148	97.00
011-2002	F	B8	0.60	1000	.550	.245	.040	.125	.172	.148	159.00
011-2003	F	B8	0.50	1000	.812	.210	.040	.165	.172	.148	159.00
011-2004	F	B8	0.50	1000	.500	.210	.040	.100	.172	.148	73.00
011-2007	F	B8	0.50	1000	.500	.210	.040	.100	.172	.148	111.00
001-2004	F	B-3-2B	0.70	500	.500	.210	.040	.165	.125	.093	87.00
011-2000	G	B8	0.65	1000	.609	.210	.040	.165	.172	.148	111.00
011-2013	G	B8	0.70	1000	.531	.210	.040	.100	.172	.148	111.00
011-2014	G	B8	0.70	1000	.531	.210	.040	.125	.172	.148	101.00
011-2022	G	B18	0.65	1200	.531	.210	.040	.125	.218	.185	101.00
011-2023	G	B9	0.65	1200	.609	.210	.093	.125	.172	.148	118.00
011-2103	H	B9-3	0.85	1500	.836	.250	.125	.230	.172	.148	111.00
011-2011	H	B8	0.50	1000	.500	.210	.040	.100	.172	.148	125.00
011-2017	I	B8	0.60	1000	.443	.093	.040	.100	.172	.148	135.00
011-2019	J	B8	0.60	1000	.520	.190	.040	.100	.172	.148	54.00
011-2028	I	B16	0.60	1200	.500	.120	.075	.125	.200	.172	163.00
001-2005	K	B3-5	0.60	500	.350	.125	.040	.100	.125	.093	146.00
011-2025	K	B8	0.50	1000	.350	.125	.040	.100	.172	.148	69.00
012-1000	L	B8	0.50	1000	.515	.210	.040	.100	.172	.148	83.00
012-2000	M	B8	0.50	1000	.500	.210	.040	.100	.172	.148	83.00
002-2000	M	B3-12	0.85	500	.500	.210	.040	.100	.125	.093	135.00
001-6001	N	B4-1	0.40	750	.310	.207	.050	.053	.130	.120	159.00
001-6033	N	B3-1	0.40	500	.225	.125	.040	.060	.125	.093	163.00
011-6011	N	B18-1	0.70	1000	.367	.207	.050	.110	.218	.171	177.00
011-6015	N	B8-13-A	0.75	750	.367	.207	.050	.110	.172	.148	125.00
011-3017	O*	B11	0.90	2000	.602	.203	.187	.212	.187	.171	347.00
011-6033	P	B9-1	0.75	1000	.351	.133	.093	.125	.172	.148	166.00
011-6022	Q	B8	0.50	1000	.303	.133	.040	.100	.172	.148	149.00
011-3007	R	B17	0.75	1200	.333	.133	.040	.160	.205	.169	236.00

*Silver plated; all others tin or tin/lead plated. †+.002″–.000″. *Reg. DuPont TM.

PROBES AND PLUGS

Brass terminal lug. Gold over silver plating.

Sealectro Number	Fig.	Tool No.	Cap., pF	Nom. Rating V rms	Dimensions, Inches A	B	C	D	F Dia.	G‡ Dia.	Net per 1000
011-4037	S	B18-1B	1.00	1000	1.500	.250	.046	.141	.218	.185§	$179.00
011-4029	T	B18-1B	0.80	1000	.739	.281	.046	.287	.218	.185§	190.00
011-4031	T	B18-1B	0.90	1000	.562	.250	.046	.141	.218	.185	183.00
011-4000	U	B8-14	0.70	1000	.538	.130	.046	.175	.172	.148	239.00
011-4605	V*	B-23A	0.70	1200	.559	.187	.065	.169	.250	.185§	169.00
021-4002	W†	.....	.....	.....	.645	.270	.375	.....	.218	.....	173.00

*Floating probe. †Nickel plated. ‡+.002″–.000″. §±.001″.

TEST POINT JACKS

Beryllium copper terminal lug. Gold over silver plating.

016-2025	X	S2	0.70	1000	.437	.120	.046	.271	.218	.185‡	$229.00
016-2000	X	S2	0.60	1000	.437	.120	.046	.271	.218	.185‡	204.00
016-2003	X	S1	0.70	1200	.640	.187	.050	.400	.218	.185‡	222.00
006-2000	X	S13-1	0.45	500	.203	.060	.030	.113	.150	.120	288.00
016-2008	X	S5	0.35	1000	.345	.120	.046	.179	.172	.148	193.00
006-2001	X	S4	0.20	1500	.449	.120	.046	.283	.142	.120	288.00
006-2002	X	S22	0.30	1500	.410	.120	.046	.244	.142	.120	225.00
016-2016	X	S2	0.55	1200	.467	.120	.046	.301	.218	.185‡	211.00
026-2006	X	S37	1.10	3200	.834	.187	.230	.417	.375	.200	563.00
016-8000	Y	S31	0.55	1200	.687	.354	.046	.287	.218	.185‡	169.00
016-8001	Y	S30	0.40	1200	.687	.354	.046	.287	.218	.185‡	246.00
016-6001	Z	S17	0.45	1000	.408	.187	.046	.175	.172	.148	331.00
016-6600	AA*	S17	0.50	1000	.359	.140	.065	.154	.187	.148	281.00
016-6601	AA*	S17	0.50	1000	.359	.140	.065	.154	.172	.148	281.00
016-6606	AA*	S18	0.60	1200	.437	.156	.065	.216	.250	.185‡	309.00
026-4011	BB†	.....	.....	.....	.381	.090	.281	.....	.187	.....	334.00
026-4012	BB†	.....	.....	.....	.376	.085	.281	.....	.187	.....	334.00
026-4003	CC†	.....	0.45	1200	.500	.140	.....	.378	.218	.187§	457.00
026-4005	CC†	.....	0.50	1200	.400	.140	.....	.378	.218	.187§	457.00
026-4006	CC†	.....	0.50	1200	.400	.140	.....	.378	.218	.187§	464.00

*Floating contact. †For printed circuit application. ‡±.001″. §Tol. ±.005.

GUIDED ENTRY TEST POINT JACK

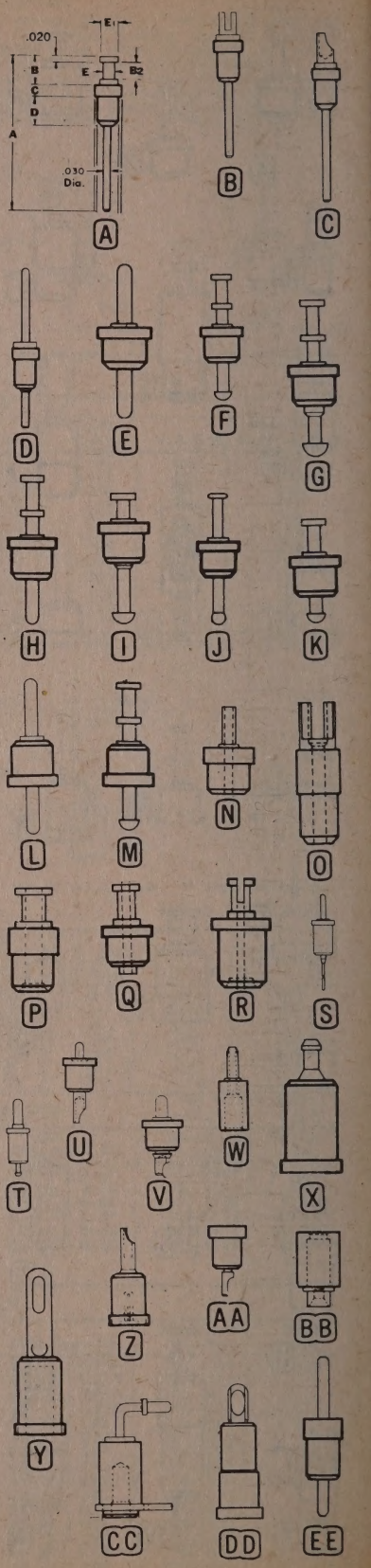
For increased chassis pull-out strength. Features beryllium copper formed lug. Offers greater pull-out strength and high torque resistance. Jack designed to provide guided entry for a .080″ diameter probe. Gold over silver plating.

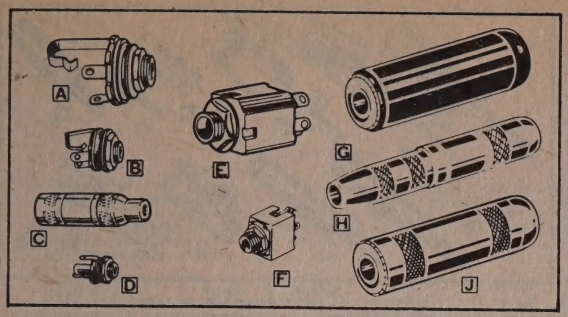
016-8010	DD	S48	0.75	1000	.637	.....	.050	.....	.218	.185	$161.70

FEED-THRU AND STAND-OFF FOR WIRE-WRAP® APPLICATIONS

Phosphor bronze construction. Plating is tin or tin/lead. ®Reg. Gardner-Denver TM.

011-8000	EE	B-13-5	0.90	1500	1.200	.460	.281	.....	.187	.171	$129.40





"LITTEL-JAX" PHONE JACKS

A Quality phone jacks that mate with standard ¼" phone plugs. Notched insulating washers mechanically interlock springs and solder lugs. "V" bend in tip spring firmly "holds" mating plug. Minimum space requirements. Economical. Mounts in single ⅜" hole, panels up to 5/32" thick, except L-11 and L-12A in panels up to ¼" thick.

Nos. C-11 and C-12A mate with No. 440 (PJ-005B) Plug; C-12B, S-12B mate with No. 480 (JAN-PJ-068) or No. 484 (W.E. No. 309) Plug. Nos. C-11 and C-12B have locating pins (non-turn devices). No. S-11 similar to No. 11 except .210" I.D. sleeve. C-11, C-12B and C-12A per JAN-J-641. All others mate with standard ¼" dia. plugs.

No. 14B Stereo "Littel-Jax", switches-out speakers when connecting stereo headphones. Dual, N.O. switch contacts, open both stereo circuits independently when a 3-conductor plug is inserted.

TWO CONDUCTOR TYPES

Part No.	Schematic No.	Typical Mating Plug	Mil-Type	Ea. 1-9	10-24	25-49	50-99	100-249
11	I	250	–	.56	.42	.385	.35	.28
C-11	I	440	JJ-034	.84	.63	.578	.525	.42
L-11	I	250	–	.64	.48	.44	.40	.32
S-11	I	S-250	–	.60	.45	.413	.375	.30
12A	III	250	–	.60	.45	.413	.375	.30
C-12A	III	440	JJ-089	.72	.66	.60	.48	.456
L-12A	III	250	–	.68	.51	.468	.425	.34
13	V	250	–	1.16	.87	.798	.725	.58
13A	VI	250	–	1.04	.78	.715	.65	.52
13E	IX	250	–	1.16	.87	.798	.725	.58

THREE CONDUCTOR TYPES

12B	IV	267	–	.68	.51	.468	.425	.34
C-12B	IV	480	JJ-033	.96	.72	.66	.60	.48
L-12B	IV	267	–	.92	.69	.633	.575	.46
S-12B	IV	480	–	.92	.69	.633	.575	.46
13B	VIII	267	–	1.00	.75	.688	.625	.50
14B	XII	267	–	1.32	.99	.908	.825	.66

"TINI-JAX" MINIATURE PHONE JACKS

B Miniature 2-conductor Phone Jacks, approximately ⅓ the size of the "Littel-Jax", otherwise similar in construction. Mount in ¼" dia. hole; panel up to 3/8" thick. No. 43A has a unique spring design that requires a pear shaped tip, such as Switchcraft "Tini-Plug" No. 750.

Part No.	Schematic No.	Typical Mating Plug	Con-ductors	Ea. 1-9	10-24	25-49	50-99	100-249
41	I	750	2	.52	.39	.358	.325	.28
42A	III	750	2	.56	.42	.385	.35	.28
43A	VI	750	2	.88	.66	.605	.55	.44

"TINI-EXTENSION JAX"

C An extension or cable jack to mate with "Tini-Plug". Two-conductor. Metal housing for ruggedness and electrical shielding. Solder lug terminals.

Switchcraft No.	Ea. 1-9	10-24	25-49	50-99	100-249
125	1.60	1.20	1.10	1.00	.80

"MICRO-JAX" SUB MINIATURE PHONE JACK

D Precision manufactured jack for miniaturized applications. Two-conductor, single closed circuit. See Schematic Circuit III. Silver plating on special tempered nickel silver springs. Internally keyed nylon insulation interlocks springs and solder lugs to eliminate shorts. Fits .190" dia. hole in panels to 5/32" thick. Only 1/25th the size of standard phone jacks. Mates with "Micro-Plug", Series 850, 880.

Switchcraft No.	Ea. 1-9	10-24	25-49	50-99	100-249
TR-2A	.64	.48	.44	.40	.32

"HI-D JAX" PHONE JACKS

E New smaller, more compact phone jacks, mate with std. ¼" phone plugs. Molded box body protects integral silver-plated, nickel silver springs. Low contact resistance and electrical leakage with little capacity between the springs. Mount on 5/8" centers in single ⅜" hole in panels up to 5/32" thick, depth behind panel 13/32". All part Nos. with "N" prefix feature a threaded nylon bushing to provide complete insulation of jack sleeve from mtg. panel. All part Nos. with "M" prefix are designed and adjusted to mate with telephone and MIL-std. plugs. Tip and ring (3-cond.) springs are gold plated, and shunt and isolate switching circuits (where used) have welded cross bar palladium contacts for stable, low resistance interconnections in sensitive and critical circuits. Stereo "HI-D Jax," Nos. 114B switches out speakers when connecting stereo headphones. Dual N.C. switch contacts open both stereo circuits independently when a 3-cond. plug is inserted.

TWO CONDUCTOR TYPES

Part No.	Schematic No.	Typical Mating Plug	Ea. 1-9	10-24	25-49	50-99	100-249
111	I	250	.52	.39	.358	.325	.26
N-111	I	250	.68	.51	.468	.425	.34
112A	III	250	.56	.42	.385	.35	.28
N-112A	III	250	.72	.54	.495	.45	.36
113	V	250	1.00	.75	.688	.625	.50
113D	VI	250	1.00	.75	.688	.625	.50

THREE CONDUCTOR TYPES

112B	IV	267	.60	.45	.413	.375	.30
M-112B	IV	482	.92	.69	.633	.575	.46
113B	VIII	267	.80	.60	.55	.50	.40
114B	XII	267	.88	.66	.605	.55	.44
N-114B	XII	267	1.00	.75	.688	.625	.50

"TINI-D JAX" MINIATURE PHONE JACK

F New, small completely enclosed, molded phone jack. Mate with Switchcraft "Tini-Plug," No. 750 etc. Phenolic housing protects the bifurcated beryllium copper springs from being bent during mounting. No. 142A has threaded bushing for conventional mtg. Tip spring terminals that "snap-in" P.C. boards. Mount on ⅜" centers, in ¼" dia. hole in panels up to 1/8" thick. Depth behind panel 7/16".

Part No.	Schematic No.	Typical Mating Plug	Con-ductors	Ea. 1-9	10-24	25-49	50-99	100-249
142A	III	750	2	.60	.45	.413	.375	.30

"EXTENSION JAX" CABLE EXTENSION JACKS

Standard ¼", 2 and 3-conductor extension phone jacks with solder lugs or screw type terminals. Size 11/16" O.D., 25/32" long; 121 and 131, 1/2" O.D., 21/32" long. Black handles are durable plastic. Shielded handles are brass, bright nickel plated.

Part No.	Fig.	Cond.	Typical Mating Plug	Term	Handle	Ea. 1-9	10-24	25-49	50-99	100-249
80	G	2	250	Screw	Black	1.44	1.08	.99	.90	.72
120	H	2	270	Screw	Shielded	1.92	1.44	1.32	1.20	.96
121	J	2	270	Solder	Shielded	2.00	1.50	1.38	1.25	1.00
126	G	2	R-280	Solder	Shielded	2.12	1.59	1.46	1.33	1.06
128	G	2	270	Solder	Shielded	1.76	1.32	1.21	1.10	.88
131	H	3	290	Solder	Shielded	2.56	1.92	1.76	1.60	1.28
830	G	3	267	Screw	Black	1.92	1.44	1.32	1.20	.96
1230	H	3	290	Screw	Shielded	2.48	1.86	1.71	1.55	1.24

JACK COVERS

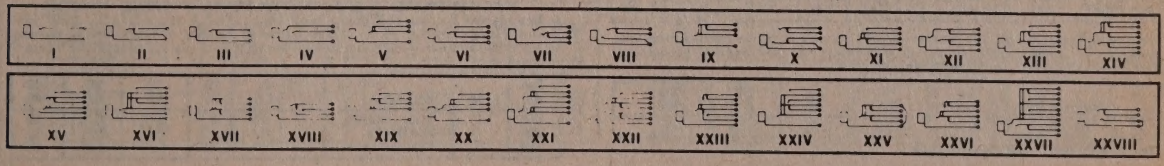
Handy, rugged, spring-load phone jack covers. Covers jack openings when phone plug is removed. Protects against dust and moisture. Series 500—Use with standard 3/8"-32 threaded bushing type phone jacks.

Part No.	Color	Ea. 1-9	10-24	25-49	50-99	100-249
515	Black	1.32	.99	.908	.825	.66

"THICK-PANEL JAX"

Phone jacks with long bushing. Mount in single 15/32" dia. hole in panels up to 1¼" thick. Solder lug terminals. Ideal for use with microphones; extra shielding virtually eliminates audio hum. No. 151, 2-conductor mates with 240, 245, 250, 255, 270 and 280 Plugs. No. 152B, 3-conductor mates with 260, 267, 269 and 297 Plugs.

Part No.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
151	2-cond. Brass Nickel Plated	1.84	1.38	1.27	1.15	92
152B	3-cond. Brass Nickel Plated					



MILITARY TYPE "LITTEL-PLUG" AND "EXTENSION JAX"

Designed to meet exact industrial and military requirements. Plugs are made in accordance with MIL-P-642(A) specifications. One-piece tip rod and one-piece sleeve and plug body provide internal interlock to prevent parts shifting in position. Handle: plastic: †Red; ‡Black. All plugs have screw terminals.

Part No.	Fig.	Mil-Type No.	Typical Mating Jack	Cond.	Ea. 1-9	10-24	25-49	50-99	100-249
430‡	G	PJ-054B	820	2	1.56	1.17	1.07	.975	.78
440‡	–	PJ-055B	MT-331	2	1.56	1.17	1.07	.975	.78
480‡	H	PJ-068	MT-342B	3	3.84	2.73	2.50	2.28	1.82
482†	J	PJ-051R	MT-332B	3	4.04	3.03	2.78	2.53	2.02
483‡	J	PJ-051B	MT-332B	3	4.04	3.03	2.78	2.53	2.02

"FLAT-PLUG" PHONE PLUGS

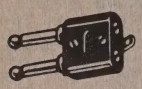
¼" phone plugs featuring flat, space-saving handles. Ideal for applications where conventional plugs would protrude too far. Nos. 220 have adapter clips which make them convenient to clamp standard phone tips to terminals. Shielded flat plugs, Nos. 228 and 238 have nickel plated steel handles; all others have red or black plastic handles.

TWO-CONDUCTOR TYPE

Part No.	Fig.	Typical Mating Jack	Handle	Terminals	Ea. 1-9	10-24	25-49	50-99	100-249
220	K	11	Black	Screw	1.40	1.05	.963	.875	.70
227	K	11	Black	Solder	1.12	.84	.77	.70	.56
228	L	11	Shielded	Solder	1.28	.96	.88	.80	.64

THREE-CONDUCTOR TYPE

238	L	12B	Shielded	Solder	1.80	1.35	1.24	1.13	.90



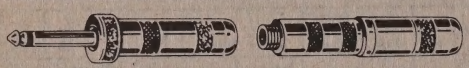
MILITARY TYPE "TWIN-PLUG"

Meet exact industrial and military requirements. Nos. 412 and 413, use identical materials. "Twin-Plug" sleeves spaced ⅝" center to center with self-aligning feature.

Part No. 412 – Two electrically independent 2-conductor plugs in black plastic handle. Has external cord clamp. Old Military Type PJ-289. Similar to W.E. 289B

Part No. 413 – Three circuit plug with two electrically independent tip circuits in heavy duty die cast frame. Molded black phenolic handle notched to indicate polarity. Interchangeable with MIL-Type PJ-421 and W.E. 241

Switchcraft No.	Ea. 1-9	10 -24	25 -49	50 -99	100 -249
412	4.76	3.57	3.27	2.98	2.38
413	4.76	3.57	3.27	2.98	2.38



"LOCK-PLUG" AND "EXTENSION JAX"

Standard size ¼", 3-cond. phone plug and mating cable extension jacks, with built-in locking device. Ideal for all P.A., audio applications. Plug has coupling ring that can be threaded to the bushing of a "Littel-Jax" or to the mating end of the "Lock-Extension Jax". "Lock-Plug" handle, 1 51/64" long; ½" dia. "Lock-Extension Jax", ½" O.D.; 2½" long. Solder lug terminals. Available in 2-cond. types on special order.

Part No.	Description	Ea. 1-9	10 -24	25 -49	50 -99	100 -249
298	3-Conductor "Lock-Plug"	2.32	1.74	1.60	1.45	1.16
133	3-Conductor "Extension Jax"	2.76	2.07	1.90	1.73	1.38

MT–389

"MT-JAX" MILITARY TELEPHONE JACKS

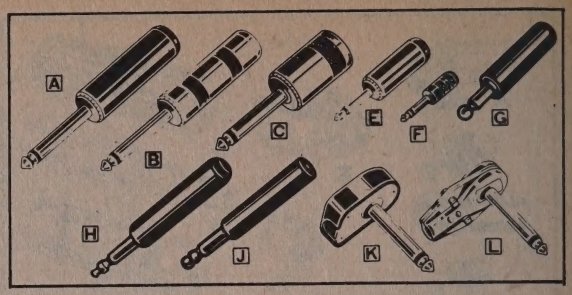
Long frame, telephone switchboard jacks designed for high quality communication and military equipment. Springs are of a special nickel silver alloy with welded cross bar palladium contacts. "MT-Jax" are available in two frame designs, namedly "A" & "C". Part numbers in chart cover "A" frame design. For frame design "C" as shown in Fig. B, add prefix letter "C" to part numbers.

Part No.	Schematic No.	Adjusted for Plug	Mil-Type No.	Ea. 1-9	10-24	25-49	50-99	100-249
MT-331	I	440*	JJ-086	1.36	1.02	.935	.85	.68
MT-332A	III	440	JJ-024	1.60	1.20	1.10	1.00	.80
MT-332B	IV	482†	JJ-022	1.60	1.20	1.10	1.00	.80
MT-334B	XII	482	JJ-042	1.88	1.41	1.29	1.18	.94

Similar in design to "MT-Jax" except frame is double width, with two mounting ears on 1 3/8" centers; bushings are on ⅝" centers. MT-389 has two 3-conductor jacks interconnected; mates with No. 482 Plug.

Switchcraft No.	Ea. 1-9	10 -24	25 -49	50 -99	100 -249
MT-389	5.32	3.99	3.66	3.33	2.66

*MIL Type PJ-055. †MIL Type PJ-051B.



"LITTEL-PLUG" PHONE PLUGS

Small size phone plugs fit standard ¼" phone jacks except *Nos. S-250, S-260 and S-280 which have a .206" dia. sleeve. Plugs with solder terminals have built-in cable clamp. Shielded metal handles are nickel plated brass; others are molded of durable plastic; ⅝" long x ½" dia.

TWO-CONDUCTOR TYPE

Part No.	Fig.	Typical Mating "Littel-Jax"	Handle	Terminals	Ea. 1-9	10-24	25-49	50-99	100-249
240	A	11	Black	Screw	1.00	.75	.688	.625	.50
245	A	11	Red	Screw	1.00	.75	.688	.625	.50
250	A	11	Black	Solder	.96	.72	.66	.60	.48
255	A	11	Red	Solder	.96	.72	.66	.60	.48
270	B	11	Shielded	Screw	1.40	1.05	.963	.875	.70
280	B	11	Shielded	Solder	1.36	1.02	.935	.85	.68
S-250	A	S-11	Black	Solder	1.00	.75	.688	.625	.50
S-280	B	S-11	Shielded	Solder	1.36	1.02	.935	.85	.68

THREE-CONDUCTOR TYPE

260	A	12B	Black	Screw	1.60	1.20	1.10	1.00	.80
267	A	12B	Black	Solder	1.40	1.05	.963	.875	.70
290	B	12B	Shielded	Screw	1.84	1.38	1.27	1.15	.92
297	B	12B	Shielded	Solder	1.76	1.32	1.21	1.10	.88

STANDARD 1/4" PHONE PLUGS

Available with phenolic or shielded, nickel plated over brass handle.

TWO-CONDUCTOR TYPE—SCREW TERMINALS

Typical mating jack "Littel-Jax" No. 11.

Part No.	Fig.	Handle	Length & Dia.	Ea. 1-9	10-24	25-49	50-99	100-249
40	A	Black	2 1/16 x ¾	1.00	.75	.688	.625	.50
160	C	Shielded	1 x 1 1/16	1.32	.99	.908	.825	.66

THREE-CONDUCTOR TYPE—SOLDER TERMINALS

Typical mating jack "Littel-Jax" No. 12B.

80	A	Black	2 1/16 x 1 1/16	1.36	1.02	.935	.85	.68
190	B	Shielded	2 1/16 x 1 1/16	2.00	1.50	1.38	1.25	1.00

"LUG-PLUG" PHONE PLUGS

Low cost, two-conductor phone plugs. Fit all ¼" phone jacks. All have solder lug terminals. Handle: phenolic.

Part No.	Fig.	Typical Mating "Littel-Jax"	Handle	Length & Dia.	Ea. 1-9	10-24	25-49	50-99	100-249
350	A	11	Black	1⅝ x ½	.80	.60	.55	.50	.40

"TINI-PLUG" MINIATURE PHONE PLUGS

Miniature 2-conductor phone plugs for use with "TINI-JAX" only 1/3 the size of standard phone plugs. Handles 1 5/8" overall length, are plastic or brass, nickel plated.

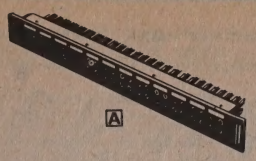
Part No.	Fig.	Terminal	Handle	Ea. 1-9	10-24	25-49	50-99	100-249
740	E	Screw	Black	.92	.69	.633	.575	.46
745	E	Screw	Red	.92	.69	.633	.575	.46
750	E	Solder	Black	.88	.66	.605	.55	.44
755	E	Solder	Red	.88	.66	.605	.55	.44
780	E	Solder	Shielded	1.24	.93	.853	.775	.62

"MICRO-PLUG" SUB-MINIATURE PHONE PLUGS

Sub-miniature 2-conductor phone plugs, only 1 1/64" long; ¼" O.D., .097" dia. sleeve. Mate with No. TR-2A. Have screw on handles in black, red or natural anodized aluminum; accommodates cables up to 7/64" dia. All plugs have integral cable clamps.

Part No.	Fig.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
850	F	Black Handle	.84	.63	.578	.525	.42
855	F	Red Handle	.84	.63	.578	.525	.42
880	F	Natural Handle	.84	.63	.578	.525	.42

Phone Jacks, Panels and Patch Cords



JACK PANELS

Rugged, heavy-duty jack panels for switching, distribution and control of audio signals in broadcasting stations, theaters, P. A. systems installations, etc. Series 1200, Fig. A, black phenolic panels reinforced with steel for the utmost rigidity. Mounting brackets slotted to fit all standard 19" relay racks. Panel includes plastic covered designation strips. Add Prefix "X" to part numbers to indicate offset ground lugs on jacks.

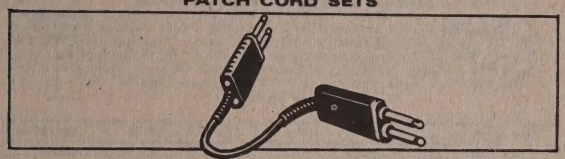
Part No.	Fig.	Rows	Number of Jacks	Size, In. W x D x H	Ea. 1-9	10-24	25-49	50-99	100-249
1332A	A	Single	24 MT-332A	19 x 1¼ x 1¾	45.60	34.20	31.35	28.50	22.80
2532A	A	Double	48 MT-332A	19 x 1¼ x 2⅛	84.00	63.00	57.75	52.50	42.00
2732A	A	Double	52 MT-332A	19 x ⅝ x 1¾	87.20	65.40	59.92	54.50	43.60

JACK PANEL HOLE PLUG

Hole Plug, P-1801, molded nylon, fits all Switchcraft jack panels, Series 1200, 1400, 2400, 2600, 2800. Designed to plug unused holes in jack panels.

Part No.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
P-1801	Hole Plug	.28	.21	.193	.175	.14

PATCH CORD SETS



All patch cords are constructed of bronze tinsel conductors, insulated and shielded, with a heavy black nylon braid overall.
Series 17Q—2-conductor patch cords have No. 413 "Twin-Plug" at each end with shields grounded both ends.
Series 18Q—2-conductor patch cords use Military Plug PJ-051 (Switchcraft Part No. 482) at each end with shields grounded both ends.
Series 19Q—Single conductor patch cords utilize Military Plug PJ-047B (Switchcraft Part No. 420) connected to each end with shield grounded both ends.

Part No.	Length	Ea. 1-9	10-24	25-49	50-99	100-249
17QA17	6"	12.24	9.18	8.42	7.65	6.12
17QD17	2'	12.80	9.60	8.80	8.00	6.40
17QH17	4'	13.60	10.20	9.35	8.50	6.80
17QK17	6'	14.48	10.86	9.96	9.05	7.24
17QN17	10'	15.32	11.49	10.53	9.58	7.66
18QA18	6'	12.80	9.60	8.80	8.00	6.40
18QD18	2'	13.92	10.44	9.57	8.70	6.96
18QF18	3'	14.48	10.86	9.96	9.05	7.24
19QA19	6"	6.68	5.01	4.59	4.18	3.34
19QD19	2'	7.56	5.67	5.20	4.73	3.78
19QF19	3'	8.08	6.06	5.56	5.05	4.04

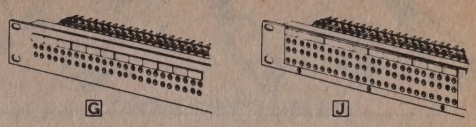
TT PATCH CORDS

"tini-telephone" patch cords with 2- and 3-cond. attachable single and twin plugs. Black handles, braided shield, black nylon cord. .173" dia. fingers. Mate with TT-Jax.

Series TT-720—2-cond. Shielded cord. Shield is grounded to sleeve of each plug.
Series TT-740—2-cond. Shielded cord. Shield is grounded to sleeve of each plug.
Series TT-840 [G] 2-cond. Shielded cord with twin-plug phone plug attached to each end.

Part No.	Length	Plug Type	Ea. 1-9	10-24	25-49	50-99	100-249
SERIES TT-720							
TT-722	1'	TT-251	9.60	7.20	6.60	6.00	4.80
TT-727	4'	TT-251	12.08	9.06	8.31	7.55	6.04
TT-729	6'	TT-251	13.60	10.20	9.35	8.50	6.80
SERIES TT-740							
TT-742	1'	TT-253	11.68	8.76	8.03	7.30	5.84
TT-747	4'	TT-253	14.20	10.65	9.76	8.88	7.10
TT-749	6'	TT-253	15.76	11.82	10.84	9.85	7.88
SERIES TT-840							
TT-842	1'	TT-261	15.96	11.97	10.97	9.98	7.98
TT-847	4'	TT-261	18.40	13.80	12.65	11.50	9.20
TT-849	6'	TT-261	20.32	15.24	13.97	12.70	10.16

SERIES TT "TINI-TELEPHONE" JACK PANELS

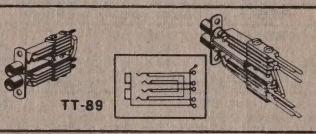


U.S. Pat. No. 3,597,867

Series "TT" Jack Panels provide up to 104 jacks (1¾" x 19" area) or 156 jacks (2⅝" x 19" area) in standard panels. Constructed of black anodized, extruded aluminum with an extra wide flange for greater rigidity. Series 1600, a double row panel for 96 "TT-Jax" consists of an aluminum panel and 4 molded plastic inserts which accommodate 24 jacks each. Series A1600—similar to Series 1600; accepts 104 "TT-Jax" or "WTT-Jax" (2 rows of 52 jacks; jacks spaced on 5/16" centers each row). Provides greater connecting density on standard 1¾" x 19" panel. Series 1700, a double row panel for 48 "TT-Twin-Jax", consists of an aluminum panel with 2 molded plastic inserts which accommodate 24 twin jacks each. Series B1700 same as Series 1700 except accommodates 48 "Tri-Jax". Part Nos. TT-95 or WTT-95 (24 per insert). All Series feature Switchcraft's exclusive "kwik-change" designation strips. Strips consist of a clear plastic snap-on cover and a reusable plastic marking strip.

Part No.	Fig.	Rows	Number of Jacks	Ea. 1-9	10-24	25-49	50-99	100-249
1600	F	Two	96* single jacks	26.48	19.86	18.21	16.55	13.24
1632A	F	Two	96, TT-32A	127.88	95.91	87.92	79.94	60.74
1634B	F	Two	96, TT-34B	162.40	121.80	111.65	101.50	81.20
1700	G	Two	48* twin jacks	30.88	23.16	21.23	19.30	15.44
1789	G	Two	48, TT-89	229.60	172.20	157.85	143.50	114.80
B1700	J	Three	48* "Tri-Jax" triple jacks	35.28	26.46	24.26	22.05	17.64
B1795	J	Three	48, TT-95 "Tri-Jax"	264.00	198.00	181.50	165.00	132.00
WB1795	J	Three	48, WTT-95 "Tri-Jax"	282.40	211.80	194.15	176.50	141.20

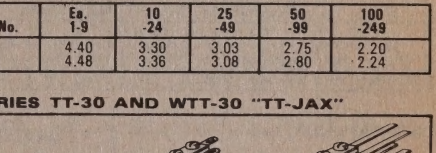
"TINI-TELEPHONE" TWIN-JAX



Series "TT Twin-Jax" and "WTT Twin-Jax" are similar in design to the Series "TT-Jax" and "WTT-Jax" single jacks, except the 2 frames are welded back-to-back with mtg. holes on 13/16" centers and bushings on 5/16" centers. Twin jacks are designed to be mounted on Series 1700 jack panels. Part No. TT-89 has solder lug terminals; Part No. WTT-89, wire-wrapping terminals. Both mate with TT-Patch Cords. Series TT-120, TT-160, TT-740, and TT-860.

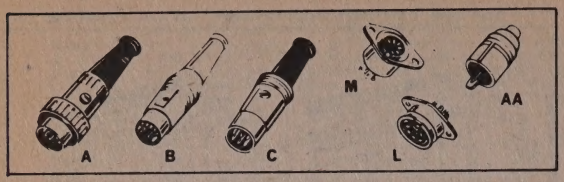
Switchcraft No.	Ea. 1-9	10 -24	25 -49	50 -99	100 -249
TT-89	4.40	3.30	3.03	2.75	2.20
WTT-89	4.48	3.36	3.08	2.80	2.24

SERIES TT-30 AND WTT-30 "TT-JAX"



New, "tini-telephone" Jax, miniatures of the std. long frame telephone-type jacks. Rugged steel frame, with gusset for extra rigidity. Special nickel silver springs with welded crossbar palladium contacts. Series TT-30 require only 2 1/4 16" depth behind panel, mounted on 5/16" centers, in a 1/4" dia. hole in panels up to 3/8" thick. Designed to be mounted on Series 1600. "TT" Jack Panels. Series TT-30 jacks also available with wire-wrap terminals, Fig. E. Series WTT-30. Same quality construction. Depth behind panel 2 1/16". Both TT-30 and WTT-30 jacks can be mounted in combination or interchangeably with "TT-Switch" and "TT Lamp-Jax" on Series 1600 panels.

Part No.	Fig.	Schematic No.	Typical Mating Plug	Cond.	Ea. 1-9	10-24	25-49	50-99	100-249
SERIES TT-30									
TT-31	D	I	TT-251	2	1.04	.78	.715	.65	.52
TT-32A	D	III	TT-251	2	1.28	.96	.88	.80	.64
TT-32B	C	IV	TT-253	3	1.20	.90	.825	.75	.60
TT-34B	C	XII	TT-253	3	1.52	1 14	1.05	.95	.76
SERIES WTT-30									
WTT-31	E	I	TT-251	2	1.12	.84	.77	.70	.56
WTT-32A	E	III	TT-251	2	1.40	1.05	.963	.875	.70
WTT-32B	E	IV	TT-253	3	1.36	1.02	.935	.85	.68
WTT-34B	E	XII	TT-253	3	1.60	1.20	1.10	1.00	.80



Here is the most complete low-cost family of miniature audio connectors available today. Exact replacements for plugs and receptacles, used on most foreign built tape recorders, radios and dictation equipment. Switchcraft/Preh 2 to 7 contact connectors include male and female plugs and receptacles with bright nickel-plated shells and plastic snap-on shells. Check these outstanding features . . . lock-ring coupling, silver plated contact pins for low contact resistance, contact friction coupling for low mechanical interference noise, exclusive "automatic" grounding and polarization provisions. Five receptacles offer some form of internal switching. Positioning "Ground Key-Rib" or "Ground Contact – electrically integral with the connector shell – is provided in each plug and receptacle (except those with plastic housings or shells) to ground or shield the connector shell. Designed for low level circuitry, they have unlimited use in commercial, industrial, consumer and military applications.

PLUGS

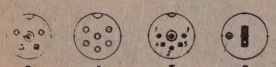
Part No.	Fig.	Description	Pin or Cont. Arr.	Ea. 1-9	10-24	25-49	50-99	100-249
STRAIGHT CORD PLUGS with 30° Lock Ring								
05CL5M	A	5 pins at 180°	5	2.36	1.77	1.62	1.48	1.18
09CL4M	A	4 pins at 210°	3	2.28	1.71	1.57	1.43	1.14
12CL5M	A	5 pins at 240°	4	2.36	1.77	1.62	1.48	1.18
STRAIGHT CORD PLUG with Shielded Barrel								
05GM5M	B	5 pins at 180° Gray	5	1.44	1.08	.99	.90	.72
STRAIGHT CORD PLUG with Extended Barrel								
05BL5M	C	5 pins at 180°	5	1.96	1.47	1.35	1.23	.98
RECEPTACLE for Lock-Ring Plugs								
57HA5F	L	5 contacts at 180°	F	1.20	.90	.825	.75	.60
80HA4F	L	4 contacts at 210°	D	1.12	.84	.77	.70	.56
61HA5F	L	5 contacts at 240°	E	1.20	.90	.825	.75	.60
RECEPTACLE for Shielded and Extended Barrel Plugs								
57GB5F	M	5 contacts at 180°	F	.96	.72	.66	.60	.48
61GA5F	M	5 contacts at 240°	E	.96	.72	.66	.60	.48

CONTROL AND SWITCHING RECEPTACLES FOR 01QK2M PLUGS

Each receptacle includes an elongated center contact for positive polarization. When inserting mating plug, contact is made to terminals 1 and 2. Plug may then be turned 180°, without a polarity change, and re-inserted to open switch and make contact to terminal 2.

Part No.	Fig.	Description	Pin or Cont. Arr.	Ea. 1-9	10-24	25-49	50-99	100-249
PLUGS with Snap-On Plastic Shells								
01QK2M	AA	Male plug, 2 cont.	8	.48	.36	.33	.30	.24

PIN ARRANGEMENTS



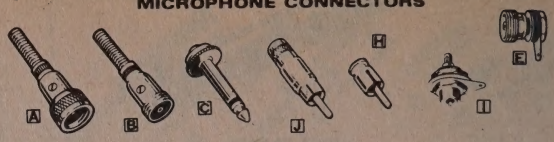
CONTACT ARRANGEMENTS

"MINI-CON" MINIATURE CONNECTORS

Popular "Mini-Con" microphone-type connectors used with miniaturized audio equipment, lapel microphones, musical instruments, etc. About ½ the size of standard microphone connectors. Accepts single conductor shielded cables up to ⅛" O.D. Nickel plated brass bodies. Coupling ring on 5501F removable for quick change of female to male type. Cable-braid spring clamped to body by hollow point set screw. 5501MP mounts back side of panel in ⅛" dia. hole.

Part No.	Fig.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
5501F	A	Female Cord Connector	.80	.60	.55	.50	.40
5501MP	D	Panel Connector, Male	.64	.48	.44	.40	.32

MICROPHONE CONNECTORS



Standard connectors with ⅝"-27 threads. Designed for use with single conductor microphone cable with .332" max. O.D. **Coupling ring** on 2501F removable for fast change of female to male type. Spring assembled into body, cable braid and spring clamped by hollow set screw. **No. 44** adapts 2501F to fit standard 2-cond. phone jack. No. 2501MP mounts in .385" dia. hole. *No. 2501MPC same as 2501MP except closed circuit type.

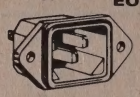
Part No.	Fig.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
2501F	A	Female Connector	.88	.66	.605	.55	.44
2501M	B	Male Connector	.72	.54	.495	.45	.36
44	C	Phone Plug Adapter	.64	.48	.44	.40	.32
2501MP	E	Panel Receptacle	.64	.48	.44	.40	.32
2501MPC	E	Panel Receptacle	.84	.63	.578	.525	.42

RF-JACKS AND RF-PLUGS

Standard phono jacks and plugs with nylon insulation. For use in radio frequency applications – low cost, max. insulation resistance. **No. 3505F** mounts front of panel in ⅜" hole – fits panel up to 1/64" thick. **No. 3507** has 13/32" O.D. shielded, screw-on handle with cable clamp.

3505F	I	Chassis jack	.64	.48	.44	.40	.32
3507	J	Plug	.84	.63	.578	.525	.42

EUROPEAN A.C. RECEPTACLE



New, Switchcraft A.C. receptacle designed to meet European I.E.C. standards. 3 pins, .078" x .157", **rated at 250V, 6 AMP., U.L. and C.S.A. approved.** Rugged molded plastic housing. Mates with Belden plug type SPH-386, or European A.C. cord sets. Mounts in a rectangular 1 1/16" x 3/4" hole and two #8 dia. holes for #5 screws (not furnished).

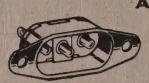
Switchcraft No.	Ea. 1-9	10-24	25-49	50-99	100-249
EAC-301	1.16	.87	.798	.725	.58

AC LINE CORD

Part No. P-2392 AC Line Cord has 3, #18 AWG cond., UL type SVT cordage. Length is 7½' with heavy black vinyl jacket. 3-contact receptacle mates with Part No. EAC-301 AC Power Receptacle and European equivalent. Male plug on other end is 3-pin type. Part No. P-2392 is U.L. and C.S.A. recognized. Female connector (3-contact) is designed to meet I.E.C. requirements. Federal Stock No. FSN-6150-3405 identifies Part No. P-2392 for government/military applications.

Part No.	Electrical Specifications	Ea. 1-9	10-24	25-49	50-99	100-249
P-2392	3-cond.; 7 amps DC 7 amps AC, 125V.	2.64	1.98	1.82	1.65	1.32

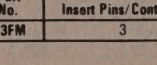
AC RECEPTACLES



Highly dependable 3-pin receptacles for use in all electrical/electronic equipment. "Chassis hugging" recessed type mounting. Brass contact pins are silver plated, chromate dipped. Part Nos. AC3 and LAC3 (ungrounded) and Part Nos. AC3G and LAC3G (grounded), include a self-aligning feature which allows movement of pins No. 1 and No. 3 in the shell to take up any slight off centering of the mating plug contacts. The center pin No. 2, is stationary and serves as a guide. Receptacles AC3 and AC3G have .122" dia. pins and mate with custom AC line cords such as **Belden Ph-243.** Part No. LAC3GD, same as LA3G, except center pin is ⅛" longer to permit ground circuit to "make" before power circuits "make". Receptacles LAC3, LAC3G and LAC3GD have .124" dia. pins and mate with std. A.C. line cords such as **Belden 17258.** All types are U.L. approved. Part No. LAC3GD is also C.S.A. approved. Rating: 115V., 7 amps.

Part No.	Ea. 1-9	10-24	25-49	50-99	100-249
AC3	.76	.57	.523	.475	.38
AC3G	.72	.54	.495	.45	.36
LAC3	.76	.57	.523	.475	.38
LAC3G	.72	.54	.495	.45	.36
LAC3GD	.76	.57	.523	.475	.38

S(*)FM AUDIO CONNECTOR ADAPTER



Male insert at one end, female insert other end. For use as a transformer, attenuator circuit, etc. **Overall length 4", 1½" space** for circuitry between terminals. Unwired.

Part No.	Insert Pins/Contacts	Ea. 1-9	10-24	25-49	50-99	100-249
S3FM	3	7.84	5.88	5.39	4.90	3.92

AUDIO CONNECTORS WITH COMPLETE GROUNDING PROVISIONS!

Switchcraft's "Quick-Ground" connectors feature a separate "Ground-Terminal" electrically integral with the connector shell. Ground continuity between mating plugs automatically accomplished through the exclusive "Ground Contactors". Possible loss of insert screw is eliminated by new "Captive Design" Insert Screw. Socket and pin assemblies utilize "wedge-action" to insure firm, reliable positioning in connector shell. Q-G® Series 3- and 4-contact audio connectors, offer 4- and 5-contact versatility when "Ground Terminal" is used. Used interchangeably with: 3- and 4-contact (Amphenol 91-850 and Excellite 91-450 Series, and Cannon XLR-3, XLR-4). ***Number of insert contacts or pins must be specified to complete Part No.**

A(*)F CORD PLUGS

Fresh, streamlined design includes rugged, die-cast zinc body, satin nickel finish, high-impact resistant thermosetting plastic socket insert, molded latchlock, dual pressure plates, keyed neoprene relief bushing. Features "Ground Terminal" and "Ground Contactors offers 4- and 5-contact versatility. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Overall length $1\frac{37}{32}$"; diameter $\frac{3}{4}$".

Part No.	Insert Contacts	Ea. 1-9	10-24	25-49	50-99	100-249
A3F	3	2.48	1.86	1.71	1.55	1.24
A4F	4	3.08	2.31	2.12	1.93	1.54

A(*)M CORD PLUGS

Has "Captive Design" insert screw, one-piece pin insert assembly easily removable for fast soldering. Polarizing groove. Die-cast zinc shell, satin nickel finish. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Brass, silver plated chromate dipped pins to resist tarnishing. Overall length $2\frac{25}{32}$"; dia. $\frac{3}{4}$".

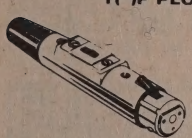
A3M	3	2.12	1.59	1.46	1.33	1.06
A4M	4	2.28	1.71	1.57	1.43	1.14

P(*)F PLUG

Female audio connector mounts directly to a flexible gooseneck and/or microphone stem. Diecast zinc housing has a $\frac{5}{8}$-27NS-2B internal thread, $\frac{9}{16}$" deep. Mate with all female receptacles with similar pin arrangements. Overall length $2\frac{1}{4}$"; dia. $\frac{3}{4}$".

P3F	3	2.40	1.80	1.65	1.50	1.20

T(*)F PLUG WITH ON-OFF SWITCH



Part Nos. T(*)F Cord Plugs connect directly to microphones. Built-in submin. slide switch permits instant on-off control of audio (ideal for entertainers, broadcasters). Switch provides in-line DPDT (2-C) switching—T(*)F has locking sw. Contacts rated 1 amp, 125V AC; 0.5 amp, 125V DC. Easy to operate with thumb. Incl. "Ground Contactor" & "Captive Design" insert screw features. Overall length $3\frac{61}{64}$", diameter $\frac{3}{4}$".

T3F	3	7.60	5.70	5.23	4.75	3.80

B(*)M RECEPTACLES

For panel or chassis mounting; locknut accommodates panels up to $\frac{1}{4}$" thick. Single hole mounting, can be keyed by using "D" shaped panel hole. Pin insert features "Captive Design" insert screw and "Ground Terminal". Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Diecast zinc shell, satin nickel finish. Dimensions: Flange $1\frac{7}{64}$" dia.; Barrel $1\frac{3}{16}$" overall; pin extensions $\frac{9}{32}$".

B3M	3	3.04	2.28	2.09	1.90	1.52
B4M	4	3.16	2.37	2.17	1.98	1.58

B(*)F AUDIO RECEPTACLE

New panel mount receptacle. Supplied with $1\frac{1}{4}$-18 UNEF spanner nut; mounts in $1\frac{1}{4}$" dia. hole, in panels up to $\frac{7}{16}$" thick. Mates with Switchcraft A(*)M, R(*)M, S(*)FM and other connectors with similar pin arrangements. Flange $1\frac{7}{16}$" dia.; Barrel $1\frac{7}{16}$" overall; pin extension $1\frac{1}{4}$".

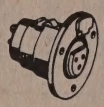
B3F	3	5.08	3.81	3.49	3.18	2.54
B4F	4	5.32	3.99	3.66	3.33	2.66

C(*)M RECEPTACLES

Mounts on wall, panel or chassis with three .136" dia. mounting holes. High impact thermosetting plastic pin insert. "Captive Design" insert screw. "Ground Terminal". Pins, brass, silver plated, chromate dipped; resists tarnishing. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Dimensions: Flange $1\frac{7}{16}$" dia.; Barrel $1\frac{3}{16}$" overall; pin extensions $\frac{9}{32}$".

Part No.	Insert Contacts	Ea. 1-9	10-24	25-49	50-99	100-249
C3M	3	1.64	1.23	1.13	1.03	.82
C4M	4	1.76	1.32	1.21	1.10	.88

C(*)F RECEPTACLES



For panel or chassis mounting; has socket insert, push-type latch locking device. Flange has three .136" holes for mounting screws. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Dimensions: Flange $1\frac{7}{16}$" dia.; Barrel $1\frac{13}{16}$" overall; pin extension $1\frac{1}{4}$".

C3F	3	3.28	2.46	2.26	1.05	1.64
C4F	4	3.40	2.55	2.34	2.13	1.70

D(*)M RECEPTACLES

Narrow, rectangular flange design receptacle for mounting on compact panel or chassis. Mates with Switchcraft A(*)F and other connectors with similar contact arrangements. Dimensions: Flange $\frac{7}{8}$" x $1\frac{7}{16}$"; Barrel $1\frac{3}{16}$" overall; pin extension $\frac{9}{32}$".

D3M	3	2.04	1.53	1.40	1.28	1.02

D(*)F RECEPTACLES

Rectangular flange design receptacle permits close mounting on crowded panel or chassis. Features "Captive Design loss-proof insert screw, positive latch locking device and high impact thermosetting socket insert. Mates with Switchcraft A(*)M and other connectors with similar contact arrangements. Dimensions: Flange $1\frac{1}{16}$" x $1\frac{7}{16}$"; Barrel $1\frac{13}{64}$" overall; pin extension $1\frac{1}{4}$".

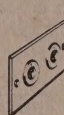
D3F	3	3.36	2.52	2.31	2.10	1.68

G(*)M TYPE WALL PLATES

Single gang wall plates with a B(*)M male receptacle. Fits standard electrical outlet box. Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: Wall Plate $4\frac{1}{2}$" H. x $2\frac{3}{4}$" W.

Part No.	Finish	Insert Pins	Ea. 1-9	10-24	25-49	50-99	100-249
G3MS	Stainless Steel	3	5.28	3.96	3.63	3.30	2.64

H(*)M TYPE WALL PLATES



Two gang wall plates with two B(*)M male receptacles. Mounts in standard electrical switch box (single). Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: Wall Plate $4\frac{1}{2}$" H. x $2\frac{3}{4}$" W. Six contacts.

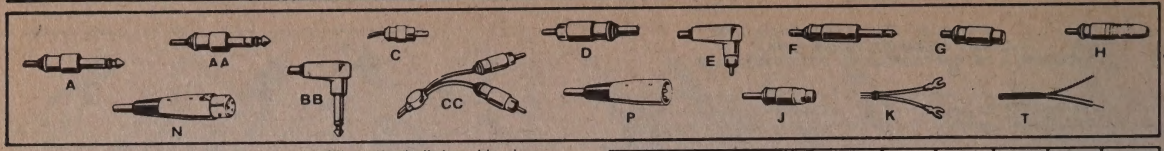
H3MS	Stainless Steel	3 ea.	7.40	5.55	5.09	4.63	3.70

J(*)F TYPE WALL PLATES

Single gang wall plates with a D(*)F female receptacle. Fits standard electrical outlet box. Wall plates available in brushed stainless steel as standard or brushed brass on special order. Dimensions: $4\frac{1}{2}$" H. x $2\frac{3}{4}$" W.

J3FS	Stainless Steel	3	5.52	4.14	3.80	3.45	2.76

SWITCHCRAFT® INC. Audio Cable Assemblies



Only Switchcraft quality molded cable assemblies offer built-in cable clamps to support cable and eliminate strain – functionally designed handles to provide an easy grip. Cable is chrome grey (unless otherwise specified) with matching plastic handles. Fig. N Switchcraft Q-G 3-Pin Audio Connector – Female. Fig. P Switchcraft Q-G 3-Pin Audio Connector. Part Nos. 25WN25, 25WT25, 25WN82, 25WT82 have molded brown handles and clear (low visibility rip cord cable).

Part No.	Terminations End No. 1 Fig.	Terminations End No. 2 Fig.	Length	Ea. 1-9	10-24	25-49	50-99	100-249
STRAIGHT 2-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS								
05AC05	A	A	18"	1.84	1.38	1.27	1.15	.92
05AD05	A	A	24"	2.08	1.56	1.43	1.30	1.04
05AK05	A	A	6'	3.08	2.31	2.12	1.93	1.54
05AN05	A	A	10'	4.24	3.18	2.92	2.65	2.12
05AU05	A	A	25'	5.60	4.20	3.85	3.50	2.80
05AK15	A	BB	6'	3.08	2.31	2.12	1.93	1.54
05AK25	A	C	6'	2.32	1.74	1.60	1.45	1.16
05AN25	A	C	10'	3.28	2.46	2.26	2.05	1.64
05AK80	A	H	6'	3.08	2.31	2.12	1.93	1.54
05AN80	A	H	10'	4.24	3.18	2.92	2.65	2.12
05AR80	A	H	15'	4.80	3.60	3.30	3.00	2.40
05AU80	A	H	25'	5.60	4.20	3.85	3.50	2.80
05AK84	A	T	6'	2.08	1.56	1.43	1.30	1.04
STRAIGHT 3-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS								
10BK10	AA	AA	6'	5.80	4.35	3.99	3.63	2.90
10BN10	AA	AA	10'	7.28	5.46	5.01	4.55	3.64
10BN81	AA	H	10'	7.28	5.46	5.01	4.55	3.64
10BU81	AA	H	25'	10.64	7.98	7.32	6.65	5.32
10FK25	AA	CC	6'	4.80	3.60	3.30	3.00	2.40

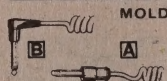
Stereo Cable Assembly for use with stereo tape recorders using 3-conductor dual microphone inputs – Norelco, Webcor, Revere, Wollensak.

Part No.	Terminations End No. 1 Fig.	Terminations End No. 2 Fig.	Length	Ea. 1-9	10-24	25-49	50-99	100-249
STRAIGHT PHONO PLUG TO VARIOUS CONNECTIONS								
25AC30	C	E	18"	1.24	.93	.853	.775	.62
25AK30	C	E	6'	1.72	1.29	1.18	1.08	.86
25AK80	C	H	6'	2.32	1.74	1.60	1.45	1.16
25AC82	C	G	18"	1.36	1.02	.935	.85	.68
25AF82	C	G	36"	1.52	1.14	1.05	.95	.76
25AH82	C	G	4'	1.84	1.38	1.27	1.15	.92
25AK82	C	G	6'	2.04	1.53	1.40	1.28	1.02
25AN82	C	G	10'	2.40	1.80	1.65	1.50	1.20
25AR82	C	G	15'	2.96	2.22	2.04	1.85	1.48
25AT82	C	G	20'	2.67	2.45	2.23	1.78	1.69
25AU82	C	G	25'	4.24	3.18	2.92	2.65	2.12
25WN82	C	G	10'	1.76	1.32	1.21	1.10	.88
25WT82	C	G	20'	1.92	1.44	1.32	1.20	.96
25AC84	C	T	18"	1.00	.75	.688	.625	.50
25AF84	C	T	36"	1.04	.78	.715	.65	.52
25AH84	C	T	4'	1.04	.78	.715	.65	.52
25AK84	C	T	6'	1.32	.99	.908	.825	.66
25AN84	C	T	10'	1.88	1.41	1.29	1.18	.94
25WN84	C	T	10'	1.24	.93	.853	.775	.62
25WT84	C	T	20'	1.68	1.26	1.16	1.05	.84
25CN85*	C	K	10'	1.68	1.26	1.16	1.05	.84
25CK86*	C	L	6'	2.08	1.56	1.43	1.30	1.04
25FF25	CC	CC	36"	3.88	2.91	2.67	2.43	1.94
25FK25	CC	CC	6'	4.48	3.36	3.08	2.80	2.24
25FN25	CC	CC	10'	5.40	4.05	3.71	3.38	2.70
25FF82	CC	G	36"	3.52	2.64	2.42	2.20	1.76
25FK82	CC	G	6'	4.16	3.12	2.86	2.60	2.08
25FN82	CC	G	10'	4.88	3.66	3.36	3.05	2.44
25FF84	CC	TT	36"	3.44	2.58	2.37	2.15	1.72
25FK84	CC	TT	6'	3.88	2.91	2.67	2.43	1.94

Special Stereo Cables. Two shielded insulated cables inside a common grey plastic jacket. Provides two isolated channels for all stereo applications. Phono plugs color coded.

25AC25	C	C	18"	1.24	.93	.853	.775	.62
25AF25	C	C	36"	1.36	1.02	.935	.85	.68
25AH25	C	C	4'	1.56	1.17	1.07	.975	.78
25AK25	C	C	6'	1.72	1.29	1.18	1.08	.86
25AN25	C	C	10'	2.40	1.80	1.65	1.50	1.20
25AR25	C	C	15'	2.96	2.22	2.04	1.85	1.48
25AT25	C	C	20'	3.56	2.67	2.45	2.23	1.78
25AU25	C	C	25'	4.24	3.18	2.92	2.65	2.12
25WN25	C	C	10'	1.56	1.17	1.07	.975	.78
25WT25	C	C	20'	1.76	1.32	1.21	1.10	.88
RIGHT ANGLE 2-CONDUCTOR PHONE PLUG TO VARIOUS CONNECTIONS								
15AK15	BB	BB	6'	3.08	2.31	2.12	1.93	1.54

Part Number	Terminations End No. 1 Fig.	Terminations End No. 2 Fig.	Length	Ea. 1-9	10-24	25-49	50-99	100-249
STRAIGHT PHONO PLUG (LONG HANDLE) TO VARIOUS CONNECTIONS								
26AF26	D	D	36"	1.52	1.14	1.05	.95	.76
26AK26	D	D	6'	1.84	1.38	1.27	1.15	.92
26AN82	D	G	10'	2.64	1.98	1.82	1.65	1.32
RIGHT ANGLE PHONO PLUG TO VARIOUS CONNECTIONS								
30AF30	E	E	36"	1.36	1.02	.935	.85	.68
30AK30	E	E	6'	1.68	1.26	1.16	1.05	.84
30AN30	E	E	10'	2.32	1.74	1.60	1.45	1.16
STRAIGHT TINI-PLUG TO VARIOUS CONNECTIONS								
40DF05	F	A	36"	2.76	2.07	1.90	1.73	1.38
40DK05	F	A	6'	3.28	2.46	2.26	2.05	1.64
40DF25	F	C	36"	2.48	1.86	1.71	1.55	1.24
40DK25	F	C	6'	2.96	2.22	2.04	1.85	1.48
40DN25	F	C	10'	3.40	2.55	2.34	2.13	1.70
40DK40	F	F	6'	2.24	1.68	1.54	1.40	1.12
40DK80	F	H	6'	3.28	2.46	2.26	2.05	1.64
40DK82	F	G	6'	2.96	2.22	2.04	1.85	1.48
40DK83	F	J	6'	3.28	2.46	2.26	2.05	1.64
40DN83	F	J	10'	3.88	2.91	2.67	2.43	1.94
40DF84	F	T	36"	2.08	1.56	1.43	1.30	1.04
40DK84	F	T	6'	2.32	1.74	1.60	1.45	1.16
40DN84	F	T	10'	2.96	2.22	2.04	1.85	1.48
40DN86	F	L	10'	2.96	2.22	2.04	1.85	1.48
EXTENSION JACK CORDS								
82AK82	G	G	6'	2.28	1.71	1.57	1.43	1.14
CORDS WITH SPADE LUGS, ALLIGATOR CLIPS								
85CT85*	K	K	20'	1.72	1.29	1.18	1.08	.86
85CU85*	K	K	25'	2.12	1.59	1.46	1.33	1.08
MICROPHONE CONNECTOR TO VARIOUS CONNECTIONS								
91BU92	N	P	25'	14.60	10.95	10.04	9.13	7.30

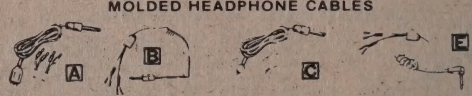


MOLDED COILED CORD ASSEMBLIES

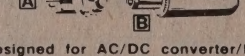
Shielded, coiled cord assemblies with molded terminations and/or stripped and tinned ends. 20 ft. extended lengths. Single conductor shielded cable with black neoprene jacket. Coiled cord flexes to maximum length and retracts positively each time it is used.

Part No.	Terminations End No. 1	Terminations End No. 2	Extended Length	Ea. 1-9	10-24	25-49	50-99	100-249
05LT05	A	A	20 ft.	8.92	6.69	6.13	5.58	4.46
05LT15	A	B	20 ft.	8.92	6.69	6.13	5.58	4.46

MOLDED HEADPHONE CABLES



Part No.	Fig.	Description	Ea. 1-9	10-24	25-49	50-99	100-249
05KJ88	A	Molded Headphone Cord. 4' 2-cond. cable from phone plug to "Y" junction. 1' cable from "Y" junction to eyelet plugs. Parallel wired.	3.80	2.85	2.61	2.38	1.90
05NJ88	B	Straight 2-cond. phone plug to eyelet lugs. 5' (extended) coiled cord.	4.44	3.33	3.05	2.78	2.22
10FJ84	C	Molded Stereo Headphone Cord. 4' cable from phone plug to "molded band" 1' cable from band to stripped and tinned leads.	3.52	2.64	2.42	2.20	1.76
13NJ88	E	Right angle 2-cond. phone plug to eyelet lugs. 5' (extended) coiled cord.	4.04	3.03	2.78	2.53	2.02



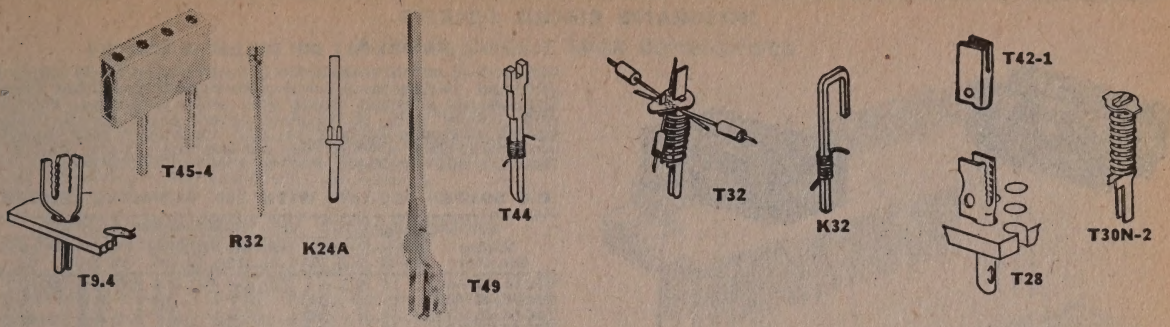
"POWER JAX," "POWER PLUG" JACKS AND PLUGS

Designed for AC/DC converter/battery charger connections. Jacks mount in 5/16" dia. hole in panels up to 1/8" thick.

Part No.	Fig.	Mating Plug	Pin Dia.	Ea. 1-9	10-24	25-49	50-99	100-249
712A	A	.760	.100"	.96	.72	.66	.60	.48
722A	A	S-760	.080"					
		Handle	**Center Hole Dia.**					
760	B	Blk. Plastic	.100"	.92	.69	.633	.575	.46
765	B	Red Plastic	.100"					
S-760	B	Blk. Plastic	.080"	.96	.72	.66	.60	.48
S-765	B	Red Plastic	.080"					

*Parallel unshielded cable.

Vector Terminals and Tools



PUSH-IN TERMINALS

Zip push-in terminals are fast and easy to use because they fit prepunched holes in Vectorbord®, Micro-Vectorbord® and Plugbords. Simple, listed hand tools firmly seat terminals to hold without staking. Slots or fingers in some models hold leads until soldered. Wire wrappable types have sharp-cornered, 0.025" square tails for reliable wire wrapping. Klip-Strip T45-4 accepts DIP leads or #22 gauge wire for solderless interconnections. T30 and T32 types hold up to 6 leads in solderless spring connection and are ideal for experimental terminals.

Installing Tools Vector No.	Fits Hole Size	Description	Material/ Plating	Overall Length Inches	Installing Tools: Manual	Installing Tools: P158 Die Point	Net /100	Net /1000
SOLDERABLE TYPES								
T9.4	.093"	Push-in	Brass/Tin	3/16	P122B	.....	$ 1.74	$ 12.43
T28	.062"	Push-in	Phr. Brz./Tin	.437	P91A	.....	1.77	12.61
T42-1	.042"	Push-in	Phr. Brz./Tin	.360	P149A	.....	2.01	12.90
K24A	.042"	Round pin	Phr. Brz./Gold	.375	.....	D7-2	2.66	37.00
K24C	.042"	Round pin	Phr. Brz./Tin	.375	.....	D7-2	1.49	16.99
WRAP-POST TYPES								
T44	.042"	.025" Sq.	Phr. Brz./Tin	.690	A13	D-11	$ 2.28	$ 19.10
K32	.042"	.025" Sq.	Phr. Brz./Tin	.690	.....	.....	1.46	10.89
T49	.042"	.025" Sq.	Phr. Brz./Tin	.625	P156	D-8	3.03	15.11
T49A	.042"	.025" Sq.	Phr. Brz./Gold	.625	P156	D-8	5.90	41.64
T46-A	.042"	.025" Sq.	Phr. Brz./Tin	.740	P133B	D-7	2.97	21.66
T46-3	.042"	.025" Sq.	Phr. Brz./Tin	1.000	P133B	D-7	2.45	17.18
R32	.042"	.025" Sq.	Phr. Brz./Gold	.745	.....	D-9	14.90	107.07
SOLDERLESS TYPES								
T30N-2	.093"	Spring	Brass/Nickel	.906	P92A	.....	$ 9.62	$ 67.13
T32A	.093"	Spring	Brass/Nickel	1.250	P136	.....	13.71	103.80
T45-4	.042"	Klip-Strip	Phr. Brz./Tin	.555	P154-1A	.....	2.69	12.60

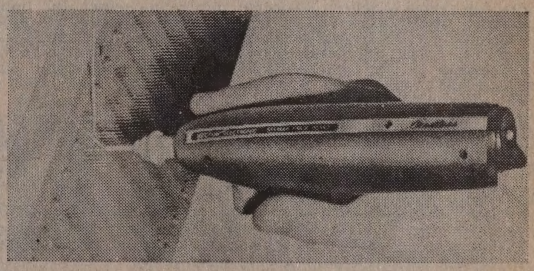
BATTERY OPERATED WIRE WRAPPING TOOL

The P160-4R electric, rechargeable wrapping tool makes reliable, low cost, gas tight, right-hand wraps with the listed wrapping bit, which must be ordered separately. Ideal for lab or bench use, tool is lightweight (9 oz.) and easy to use. Wraps for many hours without recharging, recharges in 14 to 16 hours with the recharger unit furnished.

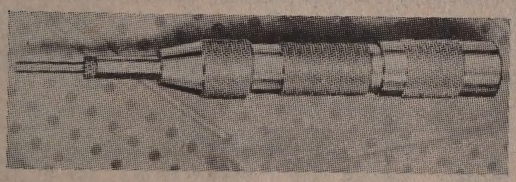
Vector No. P160-4R Wrapping Tool—Complete with recharging unit. Net Each..... **$45.68**

Vector No. P160-2A Wrapping Bit—For .025" sq. posts. Fits above tool or may be used by hand. Overall length, 5.81", with hardened wrapping section. Wraps #26 thru #30 gauge wire, with #28 gauge preferred. Net Each..... **$7.95**

Vector No. P160-1A Manual Unwrapping Tool—For .025" sq. posts. Unwraps left or right hand wraps. Overall length, 5.0", with insulated sleeve and handle grip. Unwraps #26 thru #30 gauge wire. Net Each..... **$9.50**



SPRING IMPACT TOOL FOR SEATING PUSH-IN TERMINALS



Model P158 spring impact tool delivers an adjustable blow to easily drive in and seat Zip Push-In Terminals. Interchangeable die points (listed with their appropriate terminals above) deliver the force to the terminals and make terminal installation fast and easy. Order **P158-1** adapter to use P158 Tool in drill press or arbor press.

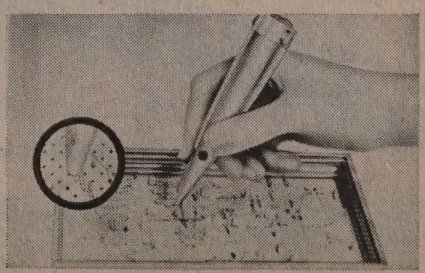
Vector No. P158-1 Press Adapter—Net Each..... **$9.19**
Vector No. D-7 Adapter—Net Each..... **6.35**
Vector No. D-7-2 Adapter—Net Each..... **7.30**
Vector No. D-8 Adapter—Net Each..... **3.86**
Vector No. D-9 Adapter—Net Each..... **3.86**
Vector No. D-11 Adapter—Net Each..... **3.86**

WIRING PENCIL

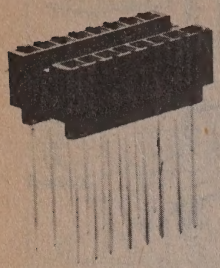
New P173 wiring pencil wires circuits three times faster than conventional soldering or manual wrapped wire connections. Tool consists of a hand-held featherweight (less than 1 oz.) unit which is used to guide and wrap heat-strippable insulated wire, fed off a self-contained replaceable bobbin, onto component leads or terminals installed on prepunched "P" pattern Micro-Vectorbord®. Connections between wrapped wire and component leads, pads or terminals are made by soldering. When heat is applied to junction points with soldering iron, the wire insulation melts, permitting the applied solder to bond the junction. Average time required to make a connection is only a few seconds.

Vector No. P173 Wiring Pencil—Complete with 250' spool of #36 gauge red wire and 250' spool of #36 gauge green wire, threading loop, instructions. Net Each..... **$9.50**

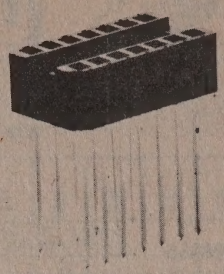
Replacement Wire—#36 gauge solder-thru insulation. No. W36-3-A, green; W36-3-B, red; W36-3-C, clear; W-363-D, blue. Package of three spools. Net Each Pkg..... **$2.40**



INTEGRATED CIRCUIT SOCKETS



Press-In Panel Mount



PC Board Mount

PRESS-IN PANEL MOUNT IC SOCKETS

IC sockets with 14 and 16 contacts and Wire-Wrap* terminals for dual inline packages. For steel or aluminum panel applications. Closed entry design. Contacts are replaceable from bottom of insulator. Insulator is glass-filled nylon. Contacts are phosphor bronze with choice of plating, .000030″ gold, .000010″ gold, or tin plate. Sockets available in black or white. Size: Pin diameter, .025″; terminal length, .600″. Size, less terminals: 14-pin, .760″ w. x .400″ d. x .335″ h.; 16-pin, .860″ w. x .400″ d. x .335″ h.

*Reg. Gardner-Denver Co. TM.

Viking Number†	No. of Contacts	Net Each, Lots of 1-9,999	10,000-24,999	25,000-49,999	50,000-99,000	100,000 Up
VIC14/4PNDB‡	14	$0.44	$0.39	$0.36	$0.32	$0.29
KIC14/4PNDB§	14	.38	.33	.31	.28	.25
TIC14/4PNDB#	14	.35	.31	.29	.26	.24
VIC16/4PNDB‡	16	.46	.41	.38	.34	.31
KIC16/4PNDB§	16	.41	.36	.34	.30	.27
TIC16/4PNDB#	16	.38	.33	.31	.28	.25

P/C BOARD MOUNT IC SOCKETS

Sockets with 14 and 16 contacts, Wire-Wrap terminals, for dual inline integrated circuits. Features minimum height PC board mounting, .250″ high. Closed entry design. Glass-filled nylon insulator. Phosphor bronze contacts with choice of plating, standard .000030″ gold, minimum .000010 gold, or electro-tin plating. Pin diameter is .025″. Sockets available in black or white. Size, less terminals, 14-pin, .760″ w. x .395″ d. x .250″ h.; 16-pin, .860″ w. x .395″ d. x .250″ h. Terminal length, .600″.

VIC14/4BNDB‡	14	$0.44	$0.39	$0.36	$0.32	$0.29
KIC14/4BNDB§	14	.38	.33	.31	.28	.25
TIC14/4BNDB#	14	.35	.31	.29	.26	.24
VIC16/4BNDB‡	16	.46	.41	.38	.34	.31
KIC16/4BNDB§	16	.41	.36	.34	.30	.27
TIC16/4BNDB#	16	.38	.33	.31	.28	.25

†Listed are black IC sockets. To order white, change last character in Viking Number from B to **W.**, e.g., VIC14/4PND**W.** ‡.000030″ gold plating. §.000010″ gold plating. #Tin plate.

LOW PROFILE DIP SOLDER IC SOCKETS

Choice of 14 and 16 contact sockets with dip solder terminals in .100″ and .150″ terminal lengths. Insulator is glass filled nylon. Contacts are phosphor bronze with choice of plating, .000030″ gold, .000010″ gold, or tin plate. Closed entry design. Center spacing between socket boards is .500″. Pin width is .034″. Sockets available in black or white. Size, less terminals, 14-pin, .760″ w. x .395″ d. x .175″ h.; 16-pin, .860″ w. x .395″ d. x .175″ h.

DIP SOLDER SOCKETS WITH .100″ TERMINAL LENGTH

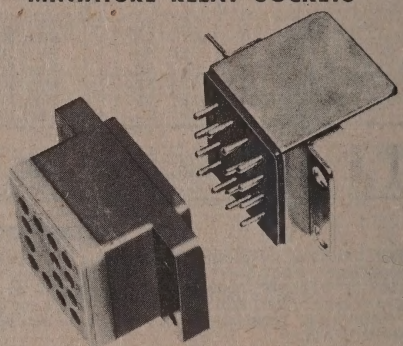
Viking Number†	No. of Contacts	Net Each, Lots of 1-9,999	10,000-24,999	25,000-49,999	50,000-99,000	100,000 Up
VIC14/4LVB‡	14	$0.41	$0.36	$0.34	$0.30	$0.27
KIC14/4LVB§	14	.35	.31	.29	.26	.24
TIC14/4LVB#	14	.33	.29	.27	.24	.22
VIC16/4LVB‡	16	.44	.39	.36	.32	.29
KIC16/4LVB§	16	.38	.33	.31	.28	.25
TIC16/4LVB#	16	.35	.31	.29	.26	.24

DIP SOLDER SOCKETS WITH .150″ TERMINAL LENGTH

VIC14/4LWB‡	14	$0.41	$0.36	$0.34	$0.30	$0.27
KIC14/4LWB§	14	.35	.31	.29	.26	.24
TIC14/4LWB#	14	.33	.29	.27	.24	.22
VIC16/4LWB‡	16	.44	.39	.36	.32	.29
KIC16/4LWB§	16	.38	.33	.31	.28	.25
TIC16/4LWB#	16	.35	.31	.29	.26	.24

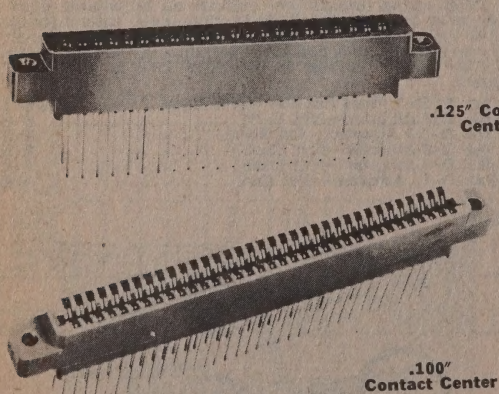
†Listed are black IC sockets. To order white, change last character in Viking Number from B to **W.**, e.g., VIC14/4PND**W.** ‡.000030″ gold plating. §.000010″ gold plating. #Tin plate.

MINIATURE RELAY SOCKETS



Military quality relay sockets are available in three mounting styles: Threaded insert for below-chassis mounting; thru-hole for below-chassis mounting; or molded-in threaded insert and stud for above-chassis mounting with flange-mounted relays. Diallyl phthalate insulator for use at voltages up to 180 VDC. Stainless steel hardware; solder pot terminals take #20 AWG thru #16 AWG wire. Available with 8, 10, 14, 16 and 24 contacts in a variety of patterns. Write or call for information and prices on relay sockets available in 5 contact terminations: solder pot, dip solder, pierced tab, turret lug and crimp removable.

NORSMAN™ SERIES PRINTED CIRCUIT CONNECTORS WITH WIRE-WRAP TERMINALS



Norsman series PC connectors for low cost, Wire-Wrap applications. Features Autac™ electro gold plating process which eliminates or reduces gold thickness on functionally non-critical areas of the contact, thereby minimizing cost. Meets MIL-G-45204, Type II, Grade C. Standard thickness is Class 1 (.000050″ gold thickness on head only). Contact material is phosphor bronze with gold over nickel. Insulator is thermosetting glass-reinforced plastic. Accepts .062″ printed circuit board. Polarized between contacts. Wire-Wrap terminals are .025″ sq. x .620″ long. **Mounting Hole:** .125″ dia. thru hole. **Operating Temperature:** To 250° F continuous. Polarizing key No. 091-0071-000 available.

NORSMAN SERIES WITH .100″ CONTACT CENTERS

Viking Number	No. of Terminals	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
3PN15/9JND5	30	$2.89	$2.61	$2.38	$2.16	$1.95
3PN18/9JND5	36	3.04	2.75	2.50	2.28	2.06
3PN22/9JND5	44	3.35	3.04	2.76	2.51	2.27
3PN25/9JND5	50	3.71	3.35	3.05	2.77	2.51
3PN28/9JND5	56	4.06	3.67	3.34	3.04	2.75
3PN36/9JND5	72	4.91	4.45	4.04	3.68	3.33
3PN40/9JND5	80	5.42	4.91	4.46	4.06	3.67
3PN43/9JND5	86	5.69	5.15	4.69	4.26	3.85
3PN50/9JND5	100	6.47	5.86	5.33	4.85	4.38

NORSMAN SERIES WITH .125″ CONTACT CENTERS

3PN15/9CND5	30	$2.89	$2.61	$2.38	$2.16	$1.95
3PN18/9CND5	36	3.04	2.75	2.50	2.28	2.06
3PN22/9CND5	44	3.35	3.04	2.76	2.51	2.27
3PN28/9CND5	56	3.71	3.35	3.05	2.77	2.51
3PN30/9CND5	60	4.06	3.67	3.34	3.04	2.75
3PN31/9CND5	62	4.02	3.64	3.31	3.01	2.72
3PN35/9CND5	70	4.88	4.41	4.01	3.65	3.30
3PN40/9CND5	80	5.42	4.91	4.46	4.06	3.67
3PN50/9CND5	100	6.47	5.86	5.33	4.85	4.38

Viking Printed Circuit Connectors

PRINTED CIRCUIT EDGE CONNECTORS

Military quality edge-board connectors for use with .062″ printed circuit boards. Bifurcated bellows type contacts of beryllium copper, plated .00003″ gold over nickel. Diallyl phthalate insulators per MIL-M-14. Available with choice of four contact spacings (.05″, .10″, .125″, .156″). **Operating Temperature:** To 400° F. **Mounting Holes:** Two .125″ dia. **Terminals:** Pierced solder type, Wire-Wrap or dip solder/weld, as indicated.

DOUBLE ROW WITH .100″ CONTACT CENTERS SOLDER/PIERCE TERMINALS (NOT ILLUSTRATED)

Double row of terminals on .100″ contact centers. Type N pierced terminals are .240″ long, take three #26 AWG wires. Type V dip solder terminals are .240″ long, fit .040″ min. dia. holes.

Viking Number	No. of Terminals	Terminal Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
3VH10/1JN5	20	Pierced	$ 4.36	$3.46	$3.11	$2.78	$2.59
3VH15/1JN5	30	Pierced	5.22	4.12	3.68	3.29	3.04
3VH25/1JN5	50	Pierced	7.04	5.51	4.89	4.35	4.00
3VH30/1JN5	60	Pierced	7.95	6.21	5.50	4.88	4.49
3VH40/1JN5	80	Pierced	9.72	7.56	6.68	5.91	5.43
3VH50/1JN5	100	Pierced	11.48	8.91	7.87	6.95	6.37
3VH10/1JV5	20	Solder	4.36	3.46	3.11	2.78	2.59
3VH15/1JV5	30	Solder	5.45	4.30	3.48	3.43	3.16
3VH25/1JV5	50	Solder	7.04	5.51	4.89	4.35	4.00
3VH30/1JV5	60	Solder	8.33	6.50	5.75	5.11	4.69
3VH40/1JV5	80	Solder	9.72	7.56	6.68	5.91	5.43
3VH50/1JV5	100	Solder	12.01	9.32	8.21	7.26	6.65

DOUBLE ROW WITH .125″ CONTACT CENTERS SOLDER/PIERCE TERMINALS (NOT ILLUSTRATED)

Double row of terminals with between-contact polarizing slots. Type N pierced terminals are .290″ long, take three #22 AWG wires; Type V dip solder terminals are .260″ long. Polarizing key, No. 091-0071-000, available.

3VH18/1CN5	36	Pierced	$ 6.84	$5.37	$4.76	$4.23	$3.91
3VH22/1CN5	44	Pierced	7.75	6.06	5.37	4.77	4.39
3VH28/1CN5	56	Pierced	9.04	7.05	6.23	5.52	5.07
3VH31/1CN5	62	Pierced	9.61	7.49	6.61	5.85	5.38
3VH36/1CN5	72	Pierced	11.25	8.73	7.71	6.81	6.24
3VH18/1CV5	36	Solder	7.37	5.77	5.12	4.54	4.19
3VH22/1CV5	44	Solder	8.33	6.50	5.75	5.11	4.69
3VH28/1CV5	56	Solder	9.76	7.60	6.72	5.95	5.45
3VH31/1CV5	62	Solder	10.43	8.11	7.16	6.34	5.81
3VH36/1CV5	72	Solder	11.63	9.03	7.96	7.03	6.45

.100″ CENTERS WITH WIRE-WRAP TERMINALS

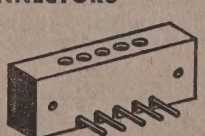
Double row of terminals on .100″ contact centers with between-contact polarizing slots. Wire-Wrap* terminals are .025″ square, .660″ long. Polarizing key part number, 091-0071-000, available.

Viking Number	No. of Terminals	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
3VH15/1JND5	30	$3.39	$3.07	$2.79	$2.54	$2.30
3VH18/1JND5	36	3.59	3.25	2.95	2.69	2.43
3VH22/1JND5	44	4.06	3.67	3.34	3.04	2.75
3VH25/1JND5	50	4.41	3.99	3.63	3.30	2.98
3VH28/1JND5	56	4.99	4.52	4.11	3.74	3.38
3VH30/1JND5	60	5.23	4.73	4.30	3.91	3.54
3VH36/1JND5	72	5.97	5.40	4.91	4.47	4.04
3VH40/1JND5	80	6.47	5.86	5.33	4.85	4.38
3VH43/1JND5	86	6.71	6.07	5.52	5.02	4.54
3VH50/1JND5	100	7.80	7.06	6.42	5.84	5.28

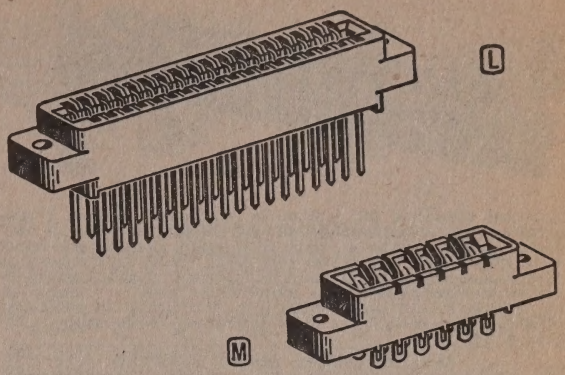
*Trademark of Gardner-Denver Company.

TEST POINT CONNECTORS

For .080″ dia. printed circuit test probes. Copper alloy contacts plated with .00003″ gold. Diallyl phthalate insulators per MIL-M-14.



Viking Number	No. of Contacts	Contact Center Spacing	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
000400-0070	4	.156″	$2.63	$2.01	$1.76	$1.54	$1.40
000400-0078	5	.150″	3.83	2.92	2.55	2.23	2.04
000400-0080	1	. . . . .	1.82	1.39	1.22	1.06	.97
000400-0087	5	.156″	3.35	2.56	2.24	1.96	1.78
000400-0100	8	.156″	3.88	2.97	2.59	2.27	2.06



.125″ CENTERS WITH WIRE-WRAP TERMINALS (FIG. L)

Double row of terminals on .125″ contact centers with between-contact polarizing slots. Wire-Wrap terminals are .025″ square, .560″ long. Polarizing key part number, 091-0071-000, available.

Viking Number	No. of Terminals	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
3VH15/1CND5	30	$3.29	$3.07	$2.79	$2.54	$2.30
3VH18/1CND5	36	3.59	3.25	2.95	2.69	2.43
3VH22/1CND5	44	4.06	3.67	3.34	3.04	2.75
3VH28/1CND5	56	4.99	4.52	4.11	3.74	3.38
3VH30/1CND5	60	5.23	4.73	4.30	3.91	3.54
3VH31/1CND5	62	5.42	4.91	4.46	4.06	3.67
3VH35/1CND5	70	5.89	5.33	4.85	4.41	3.99
3VH40/1CND5	80	6.47	5.86	5.33	4.85	4.38
3VH50/1CND5	100	7.80	7.06	6.42	5.84	5.28

SINGLE ROW WITH .156″ CONTACT CENTERS SOLDER/PIERCE TERMINALS (NOT ILLUSTRATED)

Single row of terminals on .156″ centers with between-contact polarizing slots. Type B pierced terminals are .220″ long, take three #22 AWG wires. Type K dip solder terminals are .220″ long, fit .051″ min. dia. holes. Polarizing key, No. 091-0024-000, available.

Viking Number	No. of Terminals	Terminal Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
2VH6/1AB5	6	Pierced	$3.35	$2.56	$2.24	$1.96	$1.78
2VH10/1AB5	10	Pierced	3.45	2.63	2.30	2.01	1.83
2VH15/1AB5	15	Pierced	3.97	3.04	2.66	2.32	2.10
2VH18/1AB5	18	Pierced	5.12	3.91	3.42	2.99	2.71
2VH22/1AB5	22	Pierced	5.65	4.31	3.77	3.30	3.00
2VH6/1AK5	6	Solder	3.45	2.63	2.30	2.01	1.83
2VH10/1AK5	10	Solder	3.78	2.89	2.53	2.21	2.01
2VH15/1AK5	15	Solder	4.36	3.32	2.91	2.54	2.31
2VH18/1AK5	18	Solder	5.36	4.09	3.58	3.13	2.85
2VH22/1AK5	22	Solder	5.93	4.53	3.97	3.46	3.15

DOUBLE ROW WITH .156″ CONTACT CENTERS SOLDER/PIERCE TERMINALS (FIG. M)

Double row of terminals on .156″ contact centers, with between-contact polarizing slots. Type N pierced terminals are .220″ long, hold three #22 AWG wires; Type V dip solder terminals are .375″ long, fit .051″ minimum diameter holes. Polarizing key, No. 091-0024-000, available.

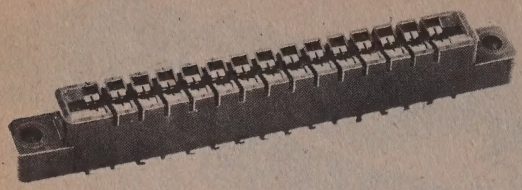
2VH6/1AN5	12	Pierced	$ 2.16	$1.65	$1.45	$1.26	$1.15
2VH10/1AN5	20	Pierced	2.75	2.10	1.83	1.60	1.46
2VH15/1AN5	30	Pierced	3.70	2.83	2.47	2.16	1.97
2VH18/1AN5	36	Pierced	4.28	3.28	2.86	2.50	2.28
2VH22/1AN5	44	Pierced	5.08	3.88	3.33	2.96	2.70
2VH28/1AN5	56	Pierced	7.03	5.37	4.70	4.11	3.73
2VH36/1AN5	72	Pierced	9.19	7.03	6.14	5.37	4.88
2VH6/1AV5	12	Solder	2.73	2.08	1.82	1.60	1.45
2VH10/1AV5	20	Solder	3.35	2.56	2.24	1.96	1.78
2VH15/1AV5	30	Solder	4.26	3.25	2.84	2.48	2.27
2VH18/1AV5	36	Solder	5.27	4.03	3.52	3.07	2.79
2VH22/1AV5	44	Solder	5.74	4.39	3.84	3.36	3.05
2VH28/1AV5	56	Solder	8.95	6.84	5.98	5.22	4.75
2VH36/1AV5	72	Solder	11.05	8.45	7.38	6.45	5.88

86-TERMINAL TYPE WITH .156″ CENTERS SOLDER/PIERCE TERMINALS (NOT ILLUSTRATED)

Double row of terminals on .156″ contact centers. Type N pierced terminals are .220″ long, take three #22 AWG wires. Type V dip solder terminals are .375″ long, fit .051″ min. dia. holes.

2VH43/1AN5	86	Pierced	$10.15	$7.76	$6.78	$5.93	$5.39
2VH43/1AV5	86	Solder	12.96	9.91	8.66	7.58	6.89

VIKOM™ SERIES PRINTED CIRCUIT CONNECTORS
SOLDER/PIERCE TERMINALS



Low-cost connector for commercial equipment. Vikom I connectors available in single or dual read-out configurations on .156″ contact centers. Insulator is glass-filled alkyd. Contacts are copper alloy with .000010″ minimum gold flash. Vikom II, available in dual read-out configuration only, is identical to Vikom I except for the contact design. Contacts are of the "cantilever" design for applications where a long contacting interface is not necessary. **Mounting Holes:** .125″ dia. holes. **Operating Temperature:** −55° C to +105° C.

VIKOM I SERIES, SINGLE READOUT

Viking Number	No. of Terminals	Terminal Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
2VK6S/1-2	6	Pierced	$2.20	$1.47	$1.29	$1.17	$1.05
2VK10S/1-2	10	Pierced	2.15	1.64	1.44	1.25	1.14
2VK15S/1-2	15	Pierced	2.73	2.08	1.82	1.60	1.45
2VK18S/1-2	18	Pierced	4.21	3.22	2.82	2.46	2.23
2VK22S/1-2	22	Pierced	3.97	3.04	2.66	2.32	2.10
2VK36S/1-2	36	Pierced	4.98	3.81	3.32	2.91	2.65
2VK6S/2-2	6	Solder	2.48	1.90	1.67	1.45	1.32
2VK10S/2-2	10	Solder	2.97	2.27	1.98	1.74	1.58
2VK15S/2-2	15	Solder	4.16	3.19	2.78	2.43	2.21
2VK18S/2-2	18	Solder	4.45	3.40	2.98	2.60	2.37
2VK22S/2-2	22	Solder	4.50	3.44	3.00	2.62	2.39
2VK36S/2-2	36	Solder	5.93	4.53	3.97	3.46	3.15

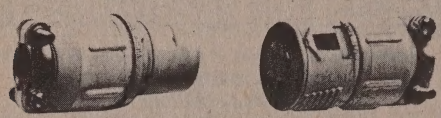
VIKOM I SERIES, DUAL READOUT

Viking Number	No. of Terminals	Terminal Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
2VK6D/1-2	12	Pierced	$1.91	$1.46	$1.28	$1.12	$1.01
2VK10D/1-2	20	Pierced	2.44	1.86	1.63	1.43	1.30
2VK15D/1-2	30	Pierced	2.63	2.01	1.76	1.54	1.40
2VK18D/1-2	36	Pierced	3.45	2.63	2.30	2.01	1.83
2VK22D/1-2	44	Pierced	3.59	2.75	2.40	2.09	1.91
2VK28D/1-2	56	Pierced	4.01	3.07	2.69	2.35	2.14
2VK36D/1-2	72	Pierced	5.07	3.88	3.39	2.97	2.69
2VK43D/1-2	86	Pierced	5.60	4.28	3.74	3.27	2.98
2VK6D/2-2	12	Solder	2.06	1.58	1.38	1.20	1.09
2VK10D/2-2	20	Solder	2.63	2.01	1.76	1.54	1.40
2VK15D/2-2	30	Solder	2.88	2.20	1.92	1.68	1.53
2VK18D/2-2	36	Solder	3.83	2.92	2.55	2.23	2.04
2VK22D/2-2	44	Solder	4.30	3.29	2.88	2.52	2.29
2VK28D/2-2	56	Solder	4.16	3.19	2.78	2.43	2.21
2VK36D/2-2	72	Solder	5.60	4.27	3.74	3.27	2.98
2VK43D/2-2	86	Solder	5.60	4.27	3.74	3.27	2.98

VIKOM II SERIES, DUAL READOUT

Viking Number	No. of Terminals	Terminal Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
2VK6D2/1-2	12	Pierced	$1.73	$1.31	$1.15	$1.00	$ .92
2VK10D2/1-2	20	Pierced	2.20	1.68	1.47	1.29	1.17
2VK15D2/1-2	30	Pierced	2.39	1.83	1.60	1.40	1.28
2VK18D2/1-2	36	Pierced	3.16	2.42	2.10	1.84	1.68
2VK22D2/1-2	44	Pierced	3.30	2.52	2.21	1.93	1.75
2VK28D2/1-2	56	Pierced	3.68	2.82	2.46	2.15	1.96
2VK36D2/1-2	72	Pierced	4.65	3.54	3.11	2.71	2.46
2VK43D2/1-2	86	Pierced	5.12	3.91	3.42	2.99	2.71
2VK6D2/4-2	12	Solder	2.06	1.58	1.38	1.20	1.09
2VK10D2/4-2	20	Solder	2.63	2.01	1.76	1.54	1.40
2VK15D2/4-2	30	Solder	2.92	2.23	1.96	1.70	1.55
2VK18D2/4-2	36	Solder	3.88	2.97	2.59	2.27	2.06
2VK22D2/4-2	44	Solder	3.63	2.78	2.43	2.13	1.93
2VK28D2/4-2	56	Solder	4.21	3.22	2.82	2.46	2.23
2VK36D2/4-2	72	Solder	5.12	3.91	3.42	2.99	2.71
2VK43D2/4-2	86	Solder	5.65	4.31	3.77	3.30	3.00

THORKOM™ SERIES LOW-COST MINIATURE CIRCULAR CONNECTORS AND RECEPTACLES



Receptacle and Plug with Cable Clamp Backshell

Receptacle and Plug with Low-Cost Backshell

Thorkom Family of Parts

Plastic molded circular connector withstands 50G shock. Cable clamps are nickel-plated aluminum. Choice of screw machined or die formed contacts, copper alloy with .000030″ gold plating. Neoprene sealing gaskets. **Current Rating:** 5.0 amps. **Operating Voltage:** 1500 V rms at sea level. **Operating Temperature:** −55° C to +125° C. UL Approved plastic.

PLUGS

Contacts are not included; order separately.

Viking Number	No. of Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
TKP07-100*	7	$2.27	$1.73	$1.49	$1.35	$1.24
TKP12-100*	12	2.98	2.27	1.95	1.78	1.63
TKP24-100*	24	3.32	2.53	2.17	1.98	1.82
TKP07-101†	7	.71	.54	.47	.43	.39
TKP12-101†	12	1.09	.83	.72	.65	.60
TKP24-101†	24	1.39	1.06	.91	.83	.76
TKP07-102‡	7	.92	.70	.61	.55	.51
TKP12-102‡	12	1.34	1.02	.88	.80	.74
TKP24-102‡	24	1.76	1.34	1.16	1.05	.97

RECEPTACLES WITH "C" RING MOUNTING

TKR07-100*	7	$2.27	$1.73	$1.49	$1.35	$1.24
TKR12-100*	12	2.98	2.27	1.95	1.78	1.63
TKR24-100*	24	3.32	2.53	2.17	1.98	1.82
TKR07-101†	7	.71	.54	.47	.43	.39
TKR12-101†	12	1.09	.83	.72	.65	.60
TKR24-101†	24	1.39	1.06	.91	.83	.76
TKR07-102‡	7	.92	.70	.61	.55	.51
TKR12-102‡	12	1.34	1.02	.88	.80	.74
TKR24-102‡	24	1.76	1.34	1.16	1.05	.97

*Plug assembly with backshell and cable clamp. †Plug without backshell. ‡Plug with low cost backshell.

RECEPTACLES WITH SQUARE FLANGE MOUNTING

Viking Number	No. of Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
TFR07-100*	7	$2.48	$1.89	$1.62	$1.48	$1.36
TFR12-100*	12	3.32	2.53	2.17	1.98	1.82
TFR07-101†	7	.92	.70	.61	.55	.51
TFR12-101†	12	1.43	1.09	.94	.85	.78
TFR07-102‡	7	1.13	.86	.74	.68	.62
TFR12-102‡	12	1.68	1.28	1.10	1.00	.92

*Plug assembly with backshell and cable clamp. †Plug without backshell. ‡Plug with low cost backshell.

CONTACTS

Viking Number	Contact Type	Net Each, Lots of 1-9	10-49	50-99	100-249
TP-100	Pin, screw machine	$0.17	$0.13	$0.11	$0.10
TS-100	Socket, screw machine	.34	.26	.22	.20
SP-100	Pin, die formed	.13	.10	.08	.08
SS-100	Socket, die formed	.17	.13	.11	.10
TD-100	Dummy	.17	.13	.11	.10

BACKSHELLS (ONLY) WITH CABLE CLAMP

Viking Number	No. of Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
TKH07-100	7	$1.15	$0.93	$0.74	$0.68	$0.63
TKH12-100	12	1.40	1.13	.90	.83	.77
TKH24-100	24	1.43	1.15	.92	.85	.78

LOW-COST BACKSHELLS

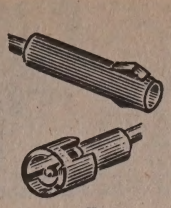
TPS07-102	7	$0.21	$0.16	$0.14	$0.13	$0.12
TPS12-102	12	.25	.19	.17	.15	.14
TPS24-102	24	.38	.29	.25	.23	.21

CONTACT INSERTION/EXTRACTION TOOL

Viking No. TIE-100—Crimp tool #422D, has tips stored in tool handle. Net Each, Lots of 1–99.....**$11.60**

NYLON CABLE CONNECTORS

Highly reliable, versatile connectors rated 250 volts per circuit. Nylon housings are available in miniature size for .062″ pin terminals, or standard size for .093″ pin terminals (supplied less terminals). Ideal for use in business machines, appliances, communications, instrumentation, and other demanding applications. Available with integrally molded ears for easy panel mounting. All types (except single circuit) are polarized. Both male and female pin terminals of the same mating diameters can be intermixed in the same housing. Terminals can be extracted and easily replaced, using ejector tools. Housings are UL Recognized.



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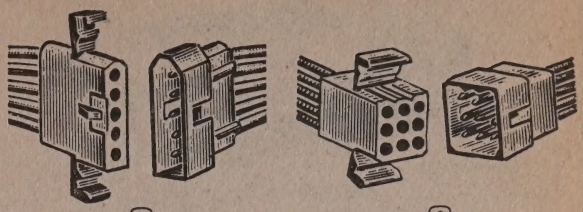

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MINIATURE NYLON PLUG HOUSINGS

Accept .062″ pin terminals, listed at right.

Waldom/ Molex Number	Fig.	No.of Circuits	Amps per Circ.	Std. Pkg. Qty.	Net/ Pkg.	Net per 100 100-499	500-999	1000 Up
03-06-2011	A	1	5	10	$1.00	$ 6.90	$ 4.75	$ 3.70
03-06-2031	B	3	5*	10	1.70	11.60	8.60	6.15
03-06-2041	B	4	5*	10	3.85	25.80	19.20	13.35
03-06-2054	B	5	5*	5	1.25	17.15	12.70	9.20
03-06-2062	C	6	5*	5	1.20	16.45	11.95	9.00
03-06-2081	B	8	5	5	1.00	14.05	9.75	7.55
03-06-2091	C	9	5*	5	1.30	17.75	12.70	9.65
03-06-2121	C	12	5*	5	1.35	18.50	13.70	10.10
03-06-2151	C	15	5*	5	2.20	30.00	21.00	16.25
03-06-2241	C	24	4*	5	3.30	44.60	31.00	24.00
03-06-2361	C	36	4*	5	3.75	50.40	34.95	27.05

STANDARD NYLON PLUG HOUSINGS

Accept .093″ terminals, listed at right.

03-09-2011	A	1	12	10	$1.00	$ 6.75	$ 4.65	$ 3.60
03-09-2021	B	2	12*	10	1.95	13.30	9.85	6.80
03-09-2031	B	3	12*	10	1.70	11.50	7.95	6.15
03-09-2041	B	4	9*	10	2.40	16.05	11.10	8.60
03-09-2052	B	5	9	5	1.40	18.85	13.15	10.25
03-09-2061	C	6	9*	5	1.55	20.75	13.75	10.50
03-09-2091	C	9	9*	5	1.65	22.20	15.40	11.90
03-09-2121	C	12	7.5	5	1.65	22.55	15.70	12.15
03-09-2151	C	15	7.5	5	2.60	34.50	24.10	18.60

*With integrally molded mounting ears.

MINIATURE NYLON RECEPTACLE HOUSINGS

Accept .062″ terminals. With holding tabs and mounting ears.

03-06-1011	A	1	5†	10	$0.85	$ 5.95	$ 4.10	$ 3.15
03-06-1031	B	3	5	10	1.95	13.00	9.65	7.05
03-06-1041	B	4	5	10	3.80	25.50	18.90	13.10
03-06-1055	B	5	5	5	1.65	22.15	16.15	11.80
03-06-1061	C	6	5	5	1.40	19.15	13.50	10.40
03-06-1081	B	8	5	5	1.25	17.25	12.00	9.30
03-06-1091	C	9	5	5	1.50	20.30	14.40	11.05
03-06-1121	C	12	5	5	1.55	21.20	15.45	11.60
03-06-1151	C	15	5	5	2.55	34.25	23.85	18.50
03-06-1241	C	24	5	5	3.45	46.80	32.50	25.20
03-06-1361	C	36	4	5	3.90	52.65	36.50	28.20

STANDARD NYLON RECEPTACLE HOUSINGS

Accept .093″ terminals. With holding tabs and mounting ears.

03-09-1011	A	1	12†	10	$0.85	$ 5.85	$ 4.05	$ 3.10
03-09-1021	B	2	12	10	2.00	13.40	9.95	6.90
03-09-1031	B	3	12	10	1.70	11.60	8.05	6.25
03-09-1041	B	4	9	10	2.45	16.40	11.35	8.75
03-09-1052	B	5	9†	5	1.75	23.85	17.10	12.90
03-09-1061	C	6	9	5	1.60	21.75	14.40	10.90
03-09-1091	C	9	9	5	1.70	23.10	15.60	12.05
03-09-1121	C	12	7.5	5	1.85	25.20	17.50	13.60
03-09-1151	C	15	7.5	5	2.95	39.40	27.30	21.05

†Holding tabs only.

CABLE CONNECTOR DESIGNER KITS

WM-50

Ideal for the creative designer, repairman and experimenter. Eliminates need of searching for proper connectors or tools; everything under one lid, covering all circuit capacities with male and female housings, terminals and crimping tool. Separate compartments for connector elements, numbered and described for easy part reordering. **Lightweight, unbreakable case** has snap-lock to avoid spills and mix-ups.

Manual, prototype crimping tool is specially balanced and weighted for easy operation; made of hardened steel, it provides excellent, uniform crimps every time. Also strips and cuts wire. **An extractor tool** is also provided with each crimping tool to assist in circuit changes or corrections.

Waldom No. WM-50 Designer Kit—Same as WM-72, but parts cover from single circuit to 15-circuit designs (250 V and up to 12 amps per circuit); and, totals 45 complete connectors only. All have pin terminal size 0.093″ dia. With crimping tool, pin terminal ejector tool and case. Net Each.....**$29.95**

Waldom No. WM-72 Designer Kit—Contains all parts needed to assemble male and female connectors from single circuit to 36-circuit designs (250 V and up to 5 amps per circuit); totals 56 connectors. All have pin terminal size 0.062″ dia. With crimping tool, pin terminal ejector tool and case. Net Each.....**$34.95**

HOUSING DIMENSIONS

MINIATURE HOUSINGS FOR .062″ TERMINALS

Plugs are .750″ deep; receptacles, .781″ deep.

Waldom/ Molex No. 03-06-	Plug Dimensions Overall W.	Overall H.	Mounting Hole, In.	Receptacle Dimensions Overall W.	Overall H.	Mounting Hole, In.
2011, 1011	.296″	dia.	.....	.203″	dia.	.....
2031, 1031	.281″	.578″	.318 x .754	.203″	.484″	.265 x .650
2041, 1041	.296″	.734″	.....	.203″	.625″	.....
2054, 1055	.296″	.875″	.....	.203″	.781″	.265 x .940
2062, 1061	.578″	.453″	.....	.484″	.343″	.552 x .505
2081, 1081	.312″	1.593″	.....	.310″	1.500″	.330 x 1.715
2091, 1091	.578″	.578″	.615 x .752	.531″	.484″	.552 x .650
2121, 1121	.578″	.718″	.614 x .903	.531″	.625″	.563 x .795
2151, 1151	.593″	.859″	.614 x 1.042	.531″	.765″	.563 x .934
2241, 1241	.750″	.930″	.765 x 1.182	.750″	.920″	.715 x 1.0719
2361, 1361	.812″	1.640″	.825 x 1.795	.859″	1.515″	.707 x 1.677

STANDARD HOUSINGS FOR .093″ TERMINALS

Plugs are .968″ deep; receptacles, 1.000″ deep except 03-09-1031, 03-09-1061 thru 03-09-1151, 1.031″ deep.

Waldom/ Molex No. 03-09-	Plug Dimensions Overall W.	Overall H.	Mounting Hole, In.	Receptacle Dimensions Overall W.	Overall H.	Mounting Hole, In.
2011, 1011	.358″	dia.	.....	.234″	dia.	.....
2021, 1021	.352″	.640″	.800 x .375	.250″	.531″	.705 x .312
2031, 1031	.338″	.773″	.933 x .375	.234″	.671″	.840 x .312
2041, 1041	.338″	.968″	1.131 x .375	.236″	.875″	1.038 x .312
2052, 1052	.343″	1.171″	.....	.234″	1.062″	.....
2061, 1061	.640″	.531″	.750 x .695	.632″	.437″	.718 x .600
2091, 1091	.734″	.756″	.937 x .725	.625″	.671″	.828 x .725
2121, 1121	.734″	.975″	1.155 x .760	.640″	.870″	1.050 x .655
2151, 1151	.734″	1.169″	1.343 x .760	.632″	1.067″	1.240 x .655

PIN TERMINALS FOR NYLON HOUSINGS

Spring tempered tin-plated brass. .093″ dia. types fit standard housings; .062″ dia. types(*) fit miniature housings. Std. pkg., 100. Style **C** in table below is for crimp, **S** for solder, **PC** for printed circuit and **BC** for bead chain.

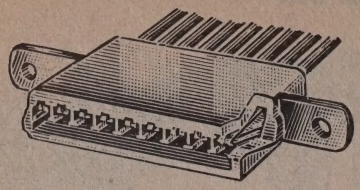
Waldom/Molex Number Male	Female	Style	For Wire Size	Net per 100	Net per 1000 1000-3999	4000-11999	12000 Up
02-09-2103	02-09-1103	C	14–18	$4.20	$26.60	$19.50	$15.30
02-09-2118	02-09-1118	C	18–24	4.20	26.60	19.50	15.30
02-09-2143	02-09-1143	C	22–30	4.20	26.60	19.50	15.30
					1000-4999	5000-9999	10000 Up
02-09-2133	02-09-1133	PC	.....	$3.25	$22.50	$17.35	$13.90
R-93-12	.....	BC	.....	1.80	11.00	7.70	6.30
.....	M-93-102	BC	.....	1.80	11.15	7.75	6.95
R-93-31	.....	BC	.....	1.80	11.40	7.90	6.45
.....	M-118-95A	BC	.....	1.85	11.80	8.20	6.70
R-62-3	.....	BC*	.....	1.80	11.50	8.10	6.65
R-62-4	.....	BC*	.....	1.85	11.90	8.45	6.90
R-62-5	.....	BC*	.....	1.80	11.50	8.10	6.65
					1000-2999	3000-5999	6000-11999
02-06-2103	02-06-1103	C*	18–22	$4.65	$40.25	$31.80	$19.20
02-06-2132	02-06-1132	C*	22–30	4.65	40.25	31.80	19.20
					4000-7999	8000 Up	
.....	02-08-1102	C	16–28	$4.60	$26.40	$21.10	.....
.....	02-05-1105	C*	18–22	4.00	24.80	18.45	.....

CRIMPING TOOLS

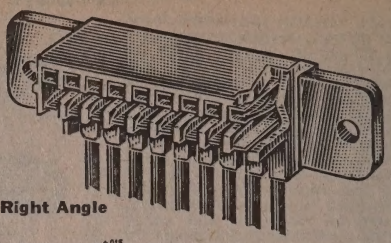
Waldom/ Molex Number	For Pin Size	Description	Net Each
HT-1919	.093″	Prototype hand tool for prototype use	$ 7.95
HT-1921	.062″	Prototype hand tool for prototype use	7.95
HTR-1031-C	.093″	Production hand tool with ratchet	75.00
HTR-2262	.062″	Production hand tool with ratchet	75.00
HT-2038	.093″	Deluxe ejector tool for extracting pins	6.70
HT-1010-2B2	.....	Replacement tip for HT-2038	2.50
HT-2285	.062″	Deluxe ejector tool for extracting pins	6.70
HT-1672-3	.....	Replacement tip for HT-2285	2.50
HT-2054	.093″	Econo-extractor tool for extracting pins	2.25
HT-2023	.062″	Econo-extractor tool for extracting pins	2.25
HT-1353	.093″	Insertion tool for inserting pins	7.50
HT-1807	.062″	Insertion tool for inserting pins	7.50

Manufactured by Molex Products, these items are made available from electronic distributors through Waldom Electronics, Inc.

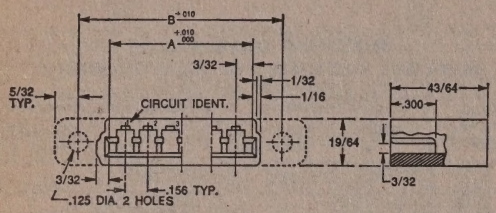
waldom / molex Connectors

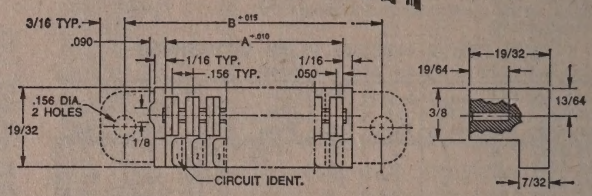


Straight-on



Right Angle





PC EDGE CONNECTORS

Straight-on: Edge connectors are available in 6, 9, 12, 15, 18, 21, 22 and 24 circuit configurations. Bifurcated terminals provide a really solid contact with excellent reliability. Connector can be slipped on and off, time after time, without any damage to the printed circuit. Use of polarizing key when necessary, guarantees positive polarity. Comes with or without mounting flange. **Right Angle:** Edge connectors are available in 6, 9, 12, 15, 18, 21 and 22 circuit configurations and offer all the advantages of "Straight-on" Series plus the added feature of mounting the printed circuit board at a right angle, requiring minimum space.

STRAIGHT-ON CONNECTORS

Waldom / Molex Number	No. of Circuits	A In.	B* In.	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 100 100-499	Net per 100 500 Up
09-01-1061	6	0.966	.....	5	$2.00	$31.05	$23.00
09-01-2061	6	.....	1.392	5	2.00	31.05	23.00
09-01-1091	9	1.434	.....	5	2.05	31.95	23.65
09-01-2091	9	.....	1.860	5	2.05	31.95	23.65
09-01-1121	12	1.902	.....	5	2.10	32.85	24.35
09-01-2121	12	.....	2.328	5	2.10	32.85	24.35
09-01-1151	15	2.370	.....	5	2.20	33.75	25.00
09-01-2151	15	.....	2.796	5	2.20	33.75	25.00
09-01-1181	18	2.838	.....	5	2.25	34.65	25.65
09-01-2181	18	.....	3.264	5	2.25	34.65	25.65
09-01-1211	21	3.306	.....	5	2.30	35.55	26.35
09-01-2211	21	.....	3.732	5	2.30	35.55	26.35
09-01-1221	22	3.462	.....	5	2.35	35.85	26.55
09-01-2221	22	.....	3.888	5	2.35	35.85	26.55
09-01-1241	24	3.774	.....	5	2.40	36.05	26.70
09-01-2241	24	.....	4.200	5	2.40	36.05	26.70
15-04-0215	Polarizing Key			10	1.35	9.10	6.30

*With mounting flange. Flange 15/64" from front and .070" thick.

TERMINALS

Waldom / Molex Number	Wire Range	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 1000 2500-4999	Net per 1000 5000-9999	Net per 1000 10,000 Up
08-01-0102	18–24	100	$5.05	$32.10	$24.10	$19.10
08-01-0106	24–30	100	5.05	32.10	24.10	19.10

RIGHT ANGLE CONNECTORS

Waldom / Molex Number	No. of Circuits	A In.	B* In.	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 100 100-499	Net per 100 500-999
09-02-1062	6†	0.882	.....	5	$2.75	$49.10	$36.40
09-02-2062	6†	.....	1.472	5	2.75	49.10	36.40
09-02-1092	9†	1.350	.....	5	2.80	50.00	37.00
09-02-2092	9	.....	1.940	5	2.80	50.00	37.00
09-02-1122	12†	1.818	.....	5	2.85	50.90	37.75
09-02-2122	12†	.....	2.408	5	2.85	50.90	37.75
09-02-1152	15†	2.286	.....	5	2.90	51.70	38.25
09-02-2152	15	.....	2.876	5	2.90	51.70	38.25
09-02-1182	18†	2.754	.....	5	2.95	52.55	38.95
09-02-2182	18	.....	3.344	5	2.95	52.55	38.95
09-02-1212	21†	3.222	.....	5	3.05	53.45	39.55
09-02-2212	21	.....	3.812	5	3.05	53.45	39.55
09-02-1222	22†	3.378	.....	5	3.10	53.65	39.70
09-02-2222	22	.....	3.968	5	3.10	53.65	39.70
15-04-0216	Polarizing Key			10	1.25	8.40	6.15

*With mounting flange. Flange .070" thick at the end. †Contact us for availability.

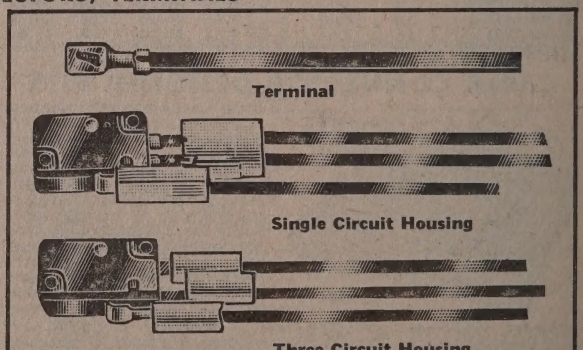
TERMINALS

Waldom / Molex Number	Wire Range	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 1000 2500-4999	Net per 1000 5000-9999	Net per 1000 10,000 Up
08-30-0110	18–24	100	$6.35	$40.70	$30.65	$24.30
08-30-0104*	24–30	100				

*Not yet available.

MICRO SWITCH CONNECTORS, TERMINALS

Single and three circuit series nylon connectors offer low cost and especially the three circuit, a full proof method of making quick connections on micro type switches. Housing accepts crimp-on, snap-in quick disconnect female terminal type No. 05-06-0302, for 14–22 wire range of 05-06-0403 for 22–30 wire range, which fit a standard 3/16" male tab, .020" thick. Female quick disconnect terminals are vastly different than the conventional type female quick disconnects. Average insertion force of 2 per term is much lower and smoother, and does not force the switch out of proper adjustment. **Single Circuit:** Single circuit micro switch connector fits any standard 3/16" (.020") switch male tab. **Three Circuit:** Single circuit portion is a unique feature of the three-circuit micro switch connector. Purposely sprung to allow easy connections to all micro switches of various manufacturers as their tab locations do vary slightly.



SINGLE CIRCUIT NYLON HOUSING

Waldom / Molex Number	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 100 100-499	Net per 100 500-999	Net per 100 1000 Up
06-02-3011	10	$0.85	$5.75	$4.00	$3.10

THREE CIRCUIT NYLON HOUSING

06-02-3031	5	$1.30	$18.20	$12.95	$10.25

TERMINALS

Waldom / Molex Number	Wire Range	Std. Pkg. Qty.	Std. Pkg. Net / Pkg.	Net per 1000 1500-5999	Net per 1000 6000-11,999	Net per 1000 12,000 Up
05-06-0302	14–22	100	$5.50	$31.95	$26.40	$20.90
05-06-0403	22–30	100	5.50	31.95	26.40	20.90

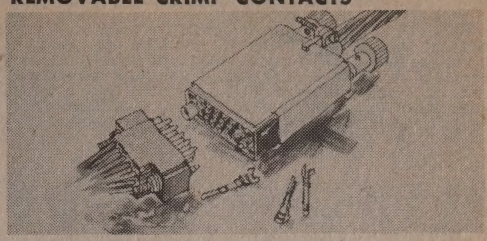
PC EDGE AND MICRO SWITCH CONNECTOR TOOLS

Waldom / Molex No.	Tool Description	For Use With	Net Each
HTR-2262	Manual production crimp	PC Edge conn., Relay skt.	$75.00
HTR-2090		Micro Switch connectors	75.00
HT-1921	Prototype crimp	PC Edge conn., Relay skt.	7.95
HT-1919		Micro Switch connectors	7.95
HT-1884	Extractor	Same as HTR-2262, -2090	1.75

Manufactured by Molex Products, these items are made available from electronic distributors through Waldom Electronics, Inc.

MAC-COM™ SERIES CONNECTORS WITH REMOVABLE CRIMP CONTACTS

Designed to fill the gap between sophisticated MIL connectors and the minimum cost type, the MAC-COM series provides a broad line of rack and panel connectors at moderate prices. The series handles moderate, but critical, signal functions and provides high reliability in high humidity environments and fairly intense temperatures. A complete line of hardware and special options is available. **Dielectric Material:** Black phenolic type MFH per MIL-M-14. Contact identification is alphabetical; to order numerical identification, substitute **XNAFC** for **XAFC** or **MNAFC** for **MRAFC. Contacts:** Must be ordered separately. Gold plated over nickel over phosphor bronze. Available in two sizes to accept wire sizes from #18 to #30 AWG. **Insulation Resistance:** 500 volts, per MIL-C-28748. **Full Specifications and Pricing Information on Request.**



XAFC TYPE WITH MOUNTING PLATE AND SHELLS

XAFC	9	P	M	1	A	3	00	G
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)

(A) Series Identification.

(B) Number of Contacts:
9, 14, 18, 20, 26, 34, 42, 50

(C) Contact Style:
P—Pin.
S—Socket.

(D) Guides:
O—None required.
G—Phosphor bronze cylindrical.
K—Beryllium copper cylindrical.
N—Brass cylindrical.
Add: **SS** for stainless steel guides, i.e. **NSS.**
P for two guide pins, i.e. **NP.**
S for two guide sockets, i.e. **GS.**
Jackscrews:
O—None required.
M—Polarized short turnable jackscrew and jacksocket with standard knobs. Cannot be used with hood.
C—Polarized long turnable jackscrew and jacksocket with standard knobs. Used with hood.
W—Polarized long turnable jackscrew and jacksocket with straight knob. Used with hood.
D—Polarized one-piece mono-jackscrew and mono-jacksocket (no separate knob). Used with hood on sizes 34, 42, 50.
F—Polarized fixed jackscrew and jacksocket. Used with or without hood. No knob required.
J—Non-polarized short turnable jackscrews with standard knobs. Cannot be used with hood.
L—Non-polarized long turning jackscrews with standard knob. Used with hood.
R—Non-polarized fixed jacksockets. No knob. Used with or without hood.
FZ—Same as **F** but with 6-32 thd.
MW—Same as **M** but with knurled round knob with internal hex.*
MU—Same as **M** but with knurled round knob with screwdriver slot.
MX—Same as **M** but with hex knob.
CW—Same as **C** but with knurled round knob with internal hex.
CU—Same as **C** but with knurled round knob with screwdriver slot.
CX—Same as **C** but with hex knob.
CZ—Same as **C** but with prybar knob.
*Consult factory for availability.

(E) Shell Type:
0—No shell.
1—Plug shell.
2—Receptacle shell.
3—Plug shell used with mono-jacks.
4—Receptacle shell used with mono-jacks.
6—Flanged receptacle shell.*
7—Plug shell, stainless steel.*
8—Receptacle shell, stainless steel.*
*Consult factory for availability.

(F) Polarization Position:
A, B, C, D, E, F, G
Omit letter when polarization is not required.

(G) Hoods:
0—No hood.
3—Hood, top opening, use with type **C, D,** or **L** jackscrews.
4—Hood, side opening, use with type **C, D,** or **L** jackscrews.
5—Hood, top opening, use with type **F** jackscrews and all guides.
6—Hood, side opening, use with type **F** jackscrews and all guides.

(H) Mounting Plates:
Mounting plates not used with type **M, C, J, L,** or **D** jackscrews.
00—No plate required.
10—Standard mounting plate.
20—Narrow mounting plate.*
30—Stainless steel plate.*
*Consult factory for availability.

(I) Special Features:*
Omit letter when none required.
G—Bulkhead gasket, use only with mounting plate.
F—Face gasket, use only with male insert.
B—Both bulkhead and face gaskets.
X—Large cable opening for hood.
*Consult factory for availability.

MRAFC TYPE WITH VIBRATION LOCKS

Same as the XAFC series, but with vibration locks and without mounting plates or shells.

MRAFC	34	S	G	H	VL
(A)	(B)	(C)	(D)	(E)	(F)

(A) Series Identification.

(B) Number of Contacts:
9, 14, 18, 20, 26, 34, 42, 50

(C) Contact Style:
P—Pin
S—Socket

(D) Guides:
G—Phosphor bronze cylindrical.
K—Beryllium copper cylindrical.
N—Brass cylindrical.
Add: **SS** for stainless steel guides, i.e. **NSS.**
P for two guide pins, i.e. **JTCP.**
S for two guide sockets, i.e. **GS.**
Jackscrew Locks:
J—Polarized fixed jackscrew and jacksocket.
JT—Polarized short turning jackscrew and jacksocket.
JTC—Polarized long turning jackscrew and jacksocket.
JTD—Polarized long turning mono-jackscrew and mono-jacksocket for sizes 34, 42, 50 only.
JZ—Same as **J** but with 6-32 thd.
JTW—Same as **JT** but with knurled round knob with internal hex.*
JTU—Same as **JT** but with knurled round knob with screwdriver slot.
JTX—Same as **JT** but with hex knob.
JTCW—Same as **JTC** but with knurled round knob with internal hex.
JTCU—Same as **JTC** but with knurled round knob with screwdriver slot.
JTCX—Same as **JTC** but with hex knob.
JTCZ—Same as **JTC** but with prybar knob.
*Consult factory for availability.

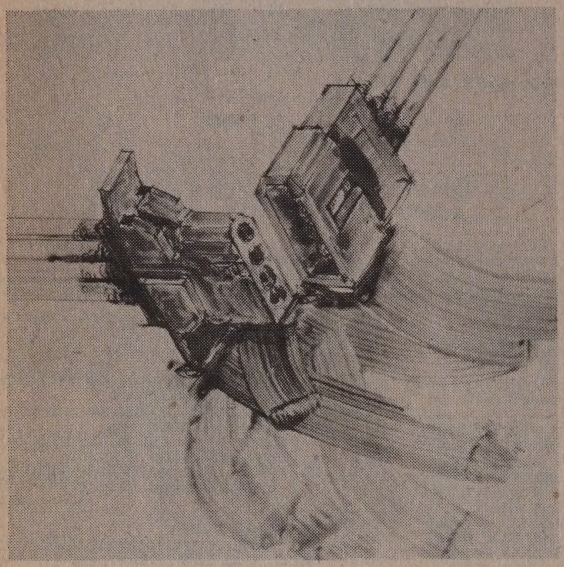
(E) Hoods:
H—Standard top opening. For 26, 34, and 42 sizes only.
H1—Standard side opening.
H8—Large top opening. For 26, 34, 42, 50 sizes only.
H9—Large side opening.
H13—Large top opening, high hood. For 9, 14, 18, 20 sizes only.

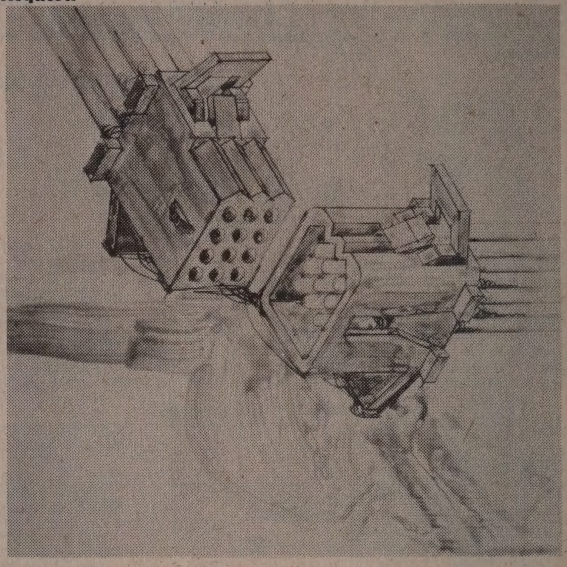
(F) Vibration Locks:
V—Lock tab.
VL—Lever and pivot assembly.

WIN-COM™ 56 AND 59 SERIES LOW COST RACK AND PANEL CONNECTORS

The WIN-COM series crimp removable contact rack and panel connectors are especially suited for the high component density, high volumetric efficiency requirements of today's consumer and commercial electronic equipment. These general purpose nylon connectors resemble those of other competitive manufacturers and will intermate with most. The wide range of options in the WIN-COM series give the design engineer greater freedom and more solutions to the design problem.

Dielectric Material: General purpose Nylon, usable to +105° C. Standard color is natural white. Other colors available at extra cost. **Contacts:** Type 56, .062″ dia.; Type 59, .093″ dia. Tin plate on brass. Also available as gold plated phosphor bronze or gold plated CA-725 alloy. **Current Rating:** Type 56, 5 amps per circuit for 1 to 15 circuits, 4 amps per circuit for 24 to 36 circuits; Type 59, 12 amps per circuit for 1 to 3 circuits, 9 amps per circuit for 4 to 9 circuits, 7.5 amps per circuit for 21 to 15 circuits. **Voltage Rating:** 250 volts max. **Full Specifications and Pricing Information on Request.**





TYPE 56 WITH .062″ DIA. CONTACTS

56	04	S	2	0	0	0
A	B	C	D	E	F	G

A Series Identification.

B Number of Circuits
01, 03, 04, 05, 06, 08, 09, 12, 15, 24, 36

C Molding Type
P—Plug molding
S—Receptacle molding

D Mounting Feature:
1—No panel mounts. Plug only.
2—With panel mounts. Receptacle only.

E Colors:
0—Natural white—standard.
1—Amber
2—Blue
3—Red
4—Brown
5—Yellow
6—Green
7—Orange
8—Gray
9—Black

F Strain Relief:
0—No strain relief.
R—With strain relief. Sizes 15, 24, 36 only.*
*Consult factory for availability.

G Holding Tabs:
0—Standard tabs.
1—Without tabs.

TYPE 59 WITH .093″ CONTACTS

59	04	S	2	0	0	0
A	B	C	D	E	F	G

A Series Identification.

B Number of Circuits.
01, 02, 03, 04, 05, 06, 09, 12, 15

C Molding Type:
P—Plug molding.
S—Receptacle molding.

D Mounting Features:
1—No panel mount.
2—With panel mount, except on 1 circuit receptacle and 1 and 3 circuit plugs.

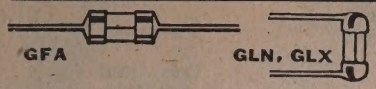
E Colors:
0—Natural white—standard.
1—Amber
2—Blue
3—Red
4—Brown
5—Yellow
6—Green
7—Orange
8—Gray
9—Black

F Strain Relief:
0—No strain relief.
1—With strain relief. Size 15 only.*
*Consult factory for availability.

G Holding Tabs:
0—Standard, tabs.
1—Without tabs.

Buss® and Fusetron® Fuses, Holders

TRON® SUBMINIATURE PIG-TAIL FUSES



Glass-tube construction with 1½″ leads of #24 tinned copper for 1/100–5 amp ratings, #18 tinned copper for 7–15 amp ratings. Hermetically sealed. Color coded to indicate amp ratings. For circuits with fault current of 50 amps or less (1/100–5 amps for 125 V or less, 7–15 amps for 32 V or less). GLN, GLX body size, .140″ x .3″; GFA body size, .145″ x .3″.

Buss No.	Amperes	Net Price For Ten	100
GLN	1/100	$19.30	$161.00
GLN	1/32, 1/20, 1/16, 1/10, 1/8, 3/10, 4/10, 7, 8, 15	16.10	135.00
GLX	15/100, 2/10, 1/4, 1/2, 6/10, 3/4, 1, 1½, 2, 3, 4, 5	21.00	175.00
GFA	1/100, 1/32, 1/20, 1/16, 1/10, 1/8, 15/100, 2/10, 1/4, 3/10, 4/10, 1/2, 6/10	6.90	58.00
GFA	3/4, 1, 1½, 2, 3, 4, 5, 7, 8, 15	6.20	52.00

SUBMINIATURE PRONG TYPE UNIT

HWA Holder GMW Fuse AF Knob

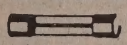
Rated 125 V or less, faulty current not over 300 amps; open at 200% within 10 sec. or less. Use AF knob for waterproof. Size, .27″ dia., ¼″ lg. (body).

Buss No.	Amperes	Net Price for Ten	100
GMW	1/200,1/100, 1/64, 1/32, 1/16	$11.60	$97.00
GMW	1/10, 2/10, ¼, 3/10, 4/10, ½, 6/10, ¾, 1, 1½, 2, 3, 4, 5	8.80	74.00
HWA*	Holder, fits all GMW	11.50	95.00
HWA†	Holder, fits all GMW	10.00	83.00
AF	Knob only, fits HWA	1.50	12.00

*With AF knob. †Without AF knob.

13/64 x 45/64 inch FUSES

(5 mm X 20 mm)

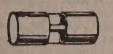


Protection of miniaturized circuits commonly used in foreign equipment. Carry 100% open at 200% in 10 sec.

Buss No.	Amperes	Net Price for Five	100
GMA	⅛, 1/10, 2/10	$3.25	$55.00
GMA	¼, 3/10, 4/10, ½, 6/10, 7/10	2.90	49.00
GMA	1, 1-2/10, 1½, 2, 2½, 3, 4, 5, 7, 8, 10	2.45	41.00
		1.90	32.00
		1.60	27.00

1/4 x 5/8 inch FUSES

FAST ACTING FUSES

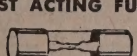


Glass tube, ¼″ x ⅝″. Rated 32 V, carry 110%, open at 135% in 1 hour.

AGA	1, 1½, 2, 2½, 3	$1.20	$10.00
AGA	5, 6, 7½, 10, 15, 20, 25, 30	.88	7.40

1/4 x 7/8 inch FUSES

FAST ACTING FUSES

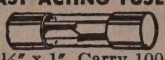


Glass tube, rated 32 V; carry 110%, open at 135% in 1 hour.

AGW	1, 2½, 3, 4	$1.20	$10.00
AGW	5, 6, 7½, 15, 20, 30	.88	7.40

1/4 x 1 inch FUSES

FAST ACTING FUSES



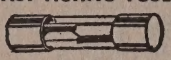
Glass tube, ¼″ x 1″. Carry 100%, open at 200% in 5 seconds. 1/500 to ⅛ amp sizes have bridge construction; all others straight-through element. UL Recognized.

Buss No.	Amperes	Volts	Net Price For Five	100
AGX	1/500	250	$9.10	$152.00
AGX	1/200	250	4.05	67.00
AGX	1/100	250	3.40	56.00
AGX	1/32	250	2.90	48.00
AGX	1/16	250	1.90	31.00
AGX	1/10, ⅛, 2/10	250	1.50	25.00
AGX	¼, ⅜, 4/10, ½, ¾	250	.85	14.00
AGX	1, 1½, 2, 3, 4	125*	.60	10.00
AGX	5, 8, 10, 15, 20	32†	.44	7.40
AGX	25, 30	32	.44	7.40
AGX	35	32	.60	10.00

*1A, 250. †5A, 125.

1/4 x 1-1/4 inch FUSES

FAST ACTING FUSES



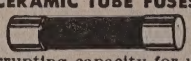
Glass tube, ¼″ x 1¼″. Carry 110%, open at 135% in 1 hour or less. 1/500 to 2 amp sizes will open at 200% in 5 seconds or less. 1/500 to 1/32 amp have bridge construction; all others straight-through element. UL Recognized.

AGC	1/500	250	$9.10	$152.00
AGC	1/200	250	4.05	67.00
AGC	1/100	250	3.40	56.00
AGC	1/32	250	2.90	48.00
AGC	⅛, ⅛, 15/100, 175/1000, 3/16, 1/10, 2/10	250	1.50	25.00
AGC	¼, 3/10, ⅜, 45/100, ½, 6/10, ¾	250	.85	14.00
AGC	1, 1¼, 1½, 1-6/10, 2	250	.60	10.00
AGC	2½, 3	250	.60	10.00
AGC	4	32‡	.60	10.00
MTH	4, 5, 6	250	.75	13.00
AGC	5, 6, 7½, 8, 10, 15	32‡	.44	7.40
AGC	20, 25, 30	32‡	.44	7.40
AGC	35	32‡	.60	10.00

‡Not UL Recognized.

1/4 x 1-1/4 inch FUSES

CERAMIC TUBE FUSES

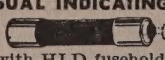


High interrupting capacity for use on circuit delivering as high as 25,000 amps at 125 V, or 10,000 amps at 250 V. ¼″ x 1¼″. Carry 110%, open at 135% in 1 hour. Up to 15 amp size. UL Recognized.

ABC	¼	250	$1.20	$20.00
ABC	1, 2, 3	250	1.20	20.00
ABC	5, 6, 8, 10	250	1.05	17.00
ABC	12, 15, 20	250	1.05	17.00
ABC	25, 30	125	1.60	27.00

1/4 x 1-1/4 inch FUSES

VISUAL INDICATING FUSES



For use with HLD fuseholder. Bright red dot on indicating pin extends from end of fuse when fuse is open even after power is off. Rated 125 V or less, carries 110%, opens at 135% in 1 hour or less. Only ¼″ x 1¼″.

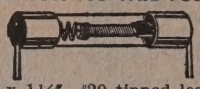
Buss No.	Amperes	Net Price For Five	100
GBA	¾	$4.15	$69.00
GBA	1, 1½, 2, 3, 4, 5	3.00	50.00

Fiber tube with silver plated indicating pin which extends when fuse is blown. May be used to actuate a signal when used in HKA fuseholder or Signal Fuse Block. Dual tube construction in sizes larger than 5 amps (cannot be used in HKA fuseholder). Voltage, 125 volts, except 8 amp and over which are 32 volts. Size, ¼″ x 1¼″.

GLD	¾	$3.65	$61.00
	1, 1½, 2, 3, 4, 5	2.80	47.00
	6, 8, 10, 12, 15, 20	4.00	67.00

1/4 x 1-1/4 inch FUSES

FUSETRON PIG-TAIL FUSES



Body ¼″ x 1¼″, #20 tinned leads, 1¼″; 1/100 to 2-8/10 same as MDL type; 3 to 7 amps same as MDX type. UL Recognized.

Buss No.	Amperes	Volts	Net Price For Five	100
MDV	1/100, 1/32	250	$3.00	$50.00
MDV	⅛, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, ¾, 8/10, 1	250	2.35	39.00
MDV	1¼, 1½, 1-6/10, 1-8/10, 2, 2¼	125	2.25	38.00
MDV	2½, 2-8/10, 3, 3-2/10, 4, 5, 6¼, 7	125	1.90	32.00

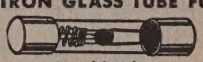
PIG-TAIL FUSES

Glass tube ¼″ x 1¼″ with 1¼″ leads of #20 tinned wire. Carry 110%, open 135% in 1 hour. 250 V. UL Recognized.

Buss No.	Amperes	Net Price For Five	100
GJV	1/32	$2.35	$39.00
GJV	⅛	2.35	39.00
GJV	¼, 3/10, ⅜, ½, ¾	1.50	25.00
GJV	1, 1½, 1¾, 2, 3	1.15	19.00
GJV	4, 5, 6, 7	1.20	20.00

1/4 x 1-1/4 inch FUSES

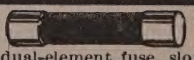
FUSETRON GLASS TUBE FUSES



Dual-element slow-blowing type, ¼″ x 1¼″. Fuse link operates only on very high overloads or short-circuits; thermal cutout functions on low overloads (cannot operate quickly on any load, thus providing long time-lag). Carry 110%, open at 135% in 1 hour. MDL 1/100 to 2-8/10 amp and MDX 3 to 7 amp sizes, UL Recognized. MDL type has longer time-lag than MDX type.

Buss No.	Amperes	Volts	Net Price For Five	100
MDL	1/100, 1/32	250	$2.50	$42.00
MDL	⅛, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, 7/10, ¾, 8/10, 1	250	1.90	32.00
MDX	1¼, 1½, 1-6/10, 2	250	2.00	33.00
MDL	1-2/10, 1¼, 1½, 1-6/10, 1-8/10, 2	125	1.75	30.00
MDL	2½, 2-8/10	125	1.50	25.00
MDX	3, 3-2/10, 4, 5	125	1.50	25.00
MDX	6¼, 7	125	1.70	28.00
MDL	3, 3-2/10, 4, 5, 6¼, 8, 10, 15, 20, 25, 30	32	1.50	25.00

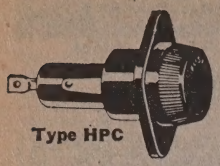
1/4 x 1-1/4 inch FUSES



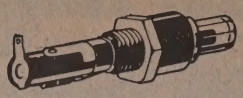
Fusetron dual-element fuse, slow-blowing type, ceramic tube. Carry 110%, open at 135% in one hour.

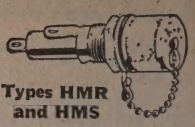
MDA	1/100, 1/32	250	$3.20	$53.00
MDA	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, ¾, 8/10, 1, 1¼, 1½, 1-6/10, 2	250	2.65	44.00
MDA	2½, 2-8/10, 3, 3-2/10, 4, 5, 6¼, 7, 8, 10, 15, 20	250	1.90	32.00
MDA	25, 30	125	1.90	32.00

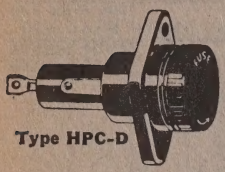
Buss® Fuseholders


Type HPC

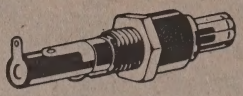
Types HC and HN


Type HKL


Types HMR and HMS


Type HPC-D

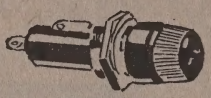
Series HJ and HK


Type HKA

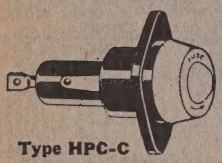
Series HR

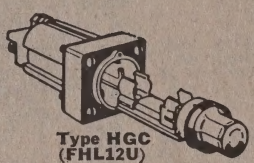
Series HH and HI

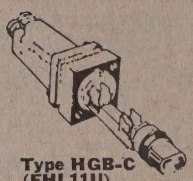
Types HLQ and HLR

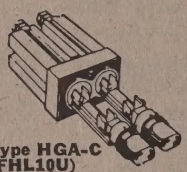

Series HCM

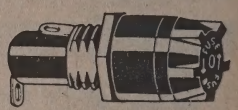
Type HLD No. 5487


Type HPC-C


Type HGC (FHL12U)


Type HGB-C (FHL11U)


Type HGA-C (FHL10U)


Type HTA

Fuse voltage on lamp indicating holders shows operating range for lamp indication.

Fuse voltage on non-indicating holders shows maximum voltage of fuses commercially available that will fit holders.

LAMP-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HJL	Panel	100–250	20 A	$2.68

SIGNAL ACTIVATING-LAMP INDICATING FOR 1/4 x 1-1/4 inch INDICATING FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HKA	Panel	125 or less	5 A	$5.81

LAMP INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HGA	Panel	100–250	30 A	$7.00
HGA-C	Panel	100–250	30 A	7.70
HGB	Panel	100–250	30 A	5.88
HGB-C	Panel	100–250	30 A	6.46
HKL	Panel	100–250	20 A	2.60
HKL-X	Panel	100–250	20 A	2.60
HKR	Panel	24–32	20 A	4.20
HKT	Panel	10–14	20 A	4.20
HKU	Panel	4–6	20 A	4.20
HKX	Panel	24–32	20 A	4.20

VISUAL INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HLD	Panel	125 or less	30 A	$0.70
5487	Knob assembly for HLD			.35

SHIELDED NON-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HMS	Panel	250 or less	30 A	$6.98

NON-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HDI	Inline	250 or less	15 A	$0.25
HHI	Inline	250 or less	15 A	.38
HJM	Panel	125 or less	30 A	.58
HJM-CC	Panel	125 or less	30 A	.58
HJM-H	Panel	125 or less	30 A	.64
9969	Spring nut for panel mounting inline holder			.049

SHIELDED NON-INDICATING FOR 1/4 x 1-1/4 INCH FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HMR	Panel	250 or less	30 A	$6.98

NON-INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HCM	Panel	250 or less	18 A	$0.91
HCM-H	Panel	250 or less	18 A	.98
HDJ	Inline	250 or less	15 A	.25
HHJ	Inline	250 or less	15 A	.38
HKP	Panel	250 or less	30 A	.58
HKP-CC	Panel	250 or less	30 A	.58
HKP-H	Panel	250 or less	30 A	.64
HLF	Panel	250 or less	30 A	.58
HMB	Panel	250 or less	30 A	.58
HTA	Panel	250 or less	15 A	.58
9969	Spring nut for panel mounting inline holders			.049
HMJ	HDJ holder w/SFE-20 fuse and wire leads			.49
HRJ	HHJ holder w/SFE-20 fuse and wire leads			.60

NON-INDICATING FOR 9/32 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HCM	Panel	250 or less	18 A	$0.91
HCM-H	Panel	250 or less	18 A	.98

VISUAL INDICATING FOR 13/32 x 1-1/2 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC-C	Panel	250 or less	30 A	$1.24

LAMP INDICATING FOR 13/32 x 1-1/2 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HGC	Panel	200–500	30 A	$7.40

NON-INDICATING FOR 13/32 x 1-3/8 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC-L	Panel	600 or less	5 A	$1.00

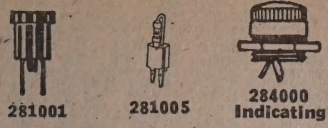
NON-INDICATING FOR 13/32 x 1-1/2 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC	Panel	250 or less	30 A	$1.00
HPC-D	Panel	250 or less	30 A	2.03

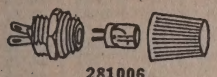
OTHER STANDARD AND SPECIAL FUSES, BLOCKS AND HOLDERS

If the fuses, fuse blocks and holders shown do not fit your requirements ask for information on other types. Fuses and fuse mountings to meet JAN and Military specifications also available. If you have a special problem in protection, send description or sketch giving number of circuits, type of fuse, terminals, etc., desired. We welcome such inquiries.

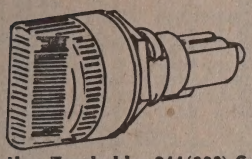
Microfuse Holders



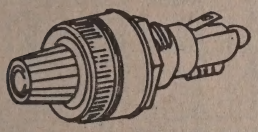
281001 281005 284000 Indicating



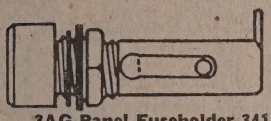
281006



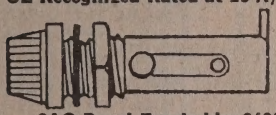
Indicating Fuseholder 344(000) Series



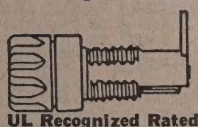
Indicating Fuseholder 344(400) Series



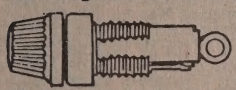
3AG Panel Fuseholder 341001
UL Recognized Rated at 15 A/250 V



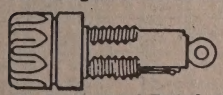
3AG Panel Fuseholder 342001
UL Recognized Rated at 15 A/250 V



3AG Panel Fuseholder 342004
UL Recognized Rated at 20 A/250 V



3AG Panel Fuseholder 342012
UL Recognized Rated at 20 A/250 V



3AG Panel Fuseholder 342014
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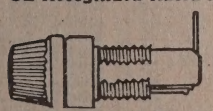
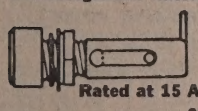
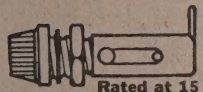


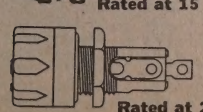
3AG Panel Fuseholder 342022
UL Recognized Rated at 20 A/250 V



8AG Panel Fuseholder 371001
Rated at 15 A/250 V



8AG Panel Fuseholder 372001
Rated at 15 A/250 V



4AG Panel Fuseholder 442006
Rated at 20 A/250 V

FUSE HOLDERS, RETAINERS

MICROFUSE HOLDERS

For mounting of 273000 Series Microfuse. Type 281006 is front panel mounting; 281005 ideal PC board mtg.; 284000 Series front panel mtg. with indicator bulb.

L.F. No.	Voltage Range	Net Each	Net per 100	
			100	500
280021	.....	$1.53	$127.50	$102.00
281001	.....	.44	37.00	29.60
281005	.....	.40	33.50	26.80
281006	.....	1.20	100.00	80.00
281007	.....	.40	33.50	26.80
282001	.....	2.02	169.00	135.20
282002	.....	1.91	159.50	127.60
282007	.....	3.52	293.50	234.80
282008	.....	3.45	287.50	230.00
284004	2½–7	3.23	269.50	215.60
284005	7–16	3.23	269.50	215.60
284006	16–32	3.23	269.50	215.60
284003	100–125	2.40	200.00	160.00

MICROFUSE INDICATING HOLDERS—RF SHIELDED

284121	2½–7 V	$16.07	1339.50	1071.60
284122	7–16 V	12.14	1011.50	809.20
284107	12–22 V	12.14	1011.50	809.20
284108	23–33 V	13.68	1140.00	912.00
284109	34–45 V	13.68	1140.00	912.00
284110	46–60 V	13.68	1140.00	912.00
284111	61–80 V	13.68	1140.00	912.00
284112	81–90 V	13.68	1140.00	912.00
284113	91–125 V	9.40	783.50	626.80

3AG PANEL FUSEHOLDERS

L.F. No.	Type	Net Each	Net per 100	
			100	500
340255A	R/F shld'd (FHN26G2)	$7.33	$611.00	$488.00
340256A	R/F shld'd (FHN20G)	7.33	611.00	488.00
340276A	Hi V knob	1.03	86.00	68.80
341001A	Screw	.87	72.50	58.00
342004A	Miniature	.62	51.50	41.20
342005A	Miniature*	.73	60.50	48.40
342006	Watertight	3.54	295.00	236.00
342012A	Miniature	.62	51.50	41.20
342013A	Miniature*	.73	60.50	48.40
342014A	Miniature	.62	51.50	41.20
342015A	Miniature*	.73	60.50	48.40
342021A	FHN 26W	4.85	382.00	305.60
342022A	Miniature	.62	51.50	41.20
342023A	Miniature*	.73	60.50	48.40
342024A	FHN 26G2	1.81	150.50	120.40
342025A	FHN 20G	1.87	156.00	124.80

*Dust-proof.

8AG PANEL FUSEHOLDERS

370011	R/F shld'd	$8.22	$685.00	$548.00
371001A	Screw	.86	72.00	57.60
372001A	Finger	.86	72.00	57.60

3AG QUICK-CONNECT FUSEHOLDERS

L.F. No.	Description	Net Each	Net per 100	
			100	500
342028A	3/16" terminals	$0.73	$61.00	$48.80
342038A	3/16" terminals	.73	61.00	48.80
342048A	3/16" terminals	.73	61.00	48.80
342058A	3/16" terminals	.73	61.00	48.80

3AG INDICATING FUSEHOLDERS 344(000) SERIES

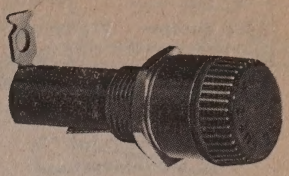
L.F. No.	Voltage	Net Each	Net per 100	
			100	500
344006A	2½–7 V	$4.40	$367.00	$293.60
344012A	7–16 V	4.40	367.00	293.60
344024A	16–32 V	4.40	367.00	293.60
344125A	100–125 V	2.74	228.00	182.40
344250A	200–250 V	2.74	228.00	182.40

3AG INDICATING FUSEHOLDERS 344(400) SERIES

Same as 344(000) Series but with different lens style.

L.F. No.	Voltage	Net Each	Net per 100	
			100	500
344401A	2½–7 V	$4.41	$367.50	$294.00
344402A	7–16 V	4.41	367.50	294.00
344403A	16–32 V	4.41	367.50	294.00
344404A	100–125 V	2.74	228.00	182.40
344405A	200–250 V	2.74	228.00	182.40

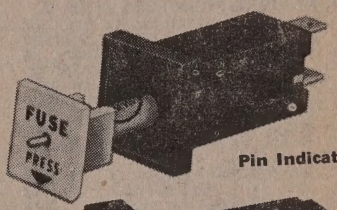
SHOCK-SAFE 3AG HOLDER



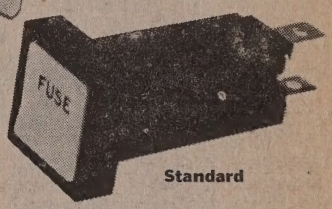
Designed to meet IEC Standards. Electrical insulating shield prevents any possibility of electric shock. Rated at 20 amps to 300 volts. UL Recognized.

L.F. No.	Type	Net Ea.	Net per 100	
			100	500
345001	Rt. angle Rear Term.	$1.67	$100.20	$83.50
345002	Straight Rear Term.	1.67	100.20	83.50

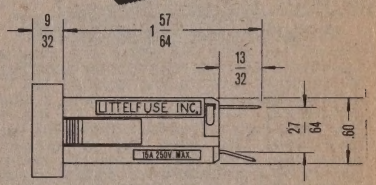
LOW PROFILE FUSE HOLDERS



Pin Indicating



Standard



Low profile fuseholders ideal for front or rear panel installation on computers, photocopying and business equipment, aircraft and marine equipment. No mounting hardware required, snap-on the terminals and snap-in the holder. Available for 3AG standard or pin indicating fuses. Molded phenolic resin body with high temperature thermo-plastic color-coded caps. Quick-connect solder type terminals are one piece brass electrotin plated; available in two widths. Dielectric withstanding voltage between terminals and terminals to ground at room temperature and 90% R.H. exceeds 1500 volts. Withstands 10–55 Hz at 0.06" double amplitude vibrations; withstands 50G for 11 millisec vibration. Rated 15 amps at any voltage to 250 volts. Mounts in 0.625" sq. hole 1/32"—1/8" thick chassis panel. UL Recognized.

BODY ASSEMBLY FOR 3AG FUSE

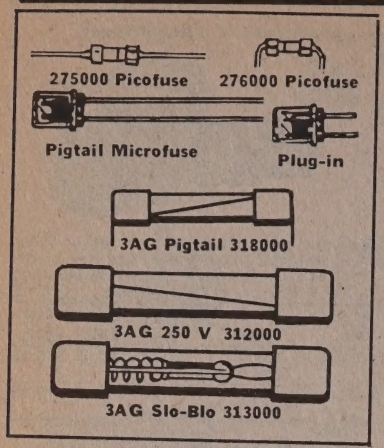
L.F. No.	Terminal	Net Each	Net per 100	
			100	500
3486*0	3/16"	$0.92	$55.20	$46.00
3488*0	1/4"	.92	55.20	46.00

*Body color, black. Bezel color specify—1, red; 2, green; 3, yellow; 4, blue; 5, white; 7, black; 9, gray. (348630 for yellow bezel.)

CAPS

L.F. No.	Description	Net Each	Net per 100	
			100	500
34800*	Standard	$0.33	$19.80	$16.50
34700*	Pin ind.	.39	23.40	19.50

*Specify cap color—1, red; 2, green; 3, yellow; 4, blue; 5, white; 7, black; 9, gray (e.g., 347004 for blue cap).



SUBMINIATURE PICOFUSES (125 V)

Blow time 4 hours minimum at 100% of rating; 5 secs. max. at 200%. Amperage printed on body; can be color-coded at additional cost. Ceramic body only 7/32" lg. x 5/64" dia.; tin-coated copper leads .025" dia. Order **275** (prefix) for axial leads 1 3/16" long for diode clip or in-circuit mounting; **276** for radial leads 1 3/8" long for use in printed circuits or receptacles. UL Recognized thru 10 amps.

275.062 thru 275.500—Net per 5 . . . **$ 3.10**
Net per 100: 100 . . . **$52.00**; 500 . . . **41.60**
275.750 thru 275010—Net per 5 . . . . **2.70**
Net per 100: 100 . . . **$45.00**; 500 . . . **36.00**
275015—Net per 5 . . . . . **3.25**
Net per 100: 100 . . . **$54.00**; 500 . . . **43.00**

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
275.062	1/16	275001	1	275004	4
275.125	1/8	27501.5	1-1/2	275005	5
275.250	1/4	275002	2	275007	7
275.375	3/8	27502.5	2-1/2	275010	10
275.500	1/2	275003	3	275015	15
275.750	3/4	27503.5	3-1/2		

MICROFUSE SUBMINIATURE FUSES

For PC and other min. space uses. Plug-in types use holder; pigtail types for soldering. Short circuit interrupting capacity 125 V, 10,000 amps DC. **Blow Specs:** 100%, 4-hour min.; 200%, 5-sec. max. **Size:** 1/4" dia. x 1 1/32" (fuse body). Plug-in, transparent cap type listed. Use prefix **272** for plug-in, metal cap; prefix **279** for pigtail, transparent cap; prefix **278** for pigtail, metal cap. UL Recognized.

Plug-In L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
273.002	1/500	$7.59	$126.50	$101.20
273.005	1/200	7.59	126.50	101.20
273.010	1/100	7.59	126.50	101.20
273.015	1/64	7.59	126.50	101.20
273.031	1/32	7.59	126.50	101.20
273.050	1/20	6.39	106.50	85.20
273.062	1/16	6.39	106.50	85.20
273.100	1/10	6.39	106.50	85.20
273.125	1/8	6.39	106.50	85.20
273.200	2/10	6.39	106.50	85.20
273.250	1/4	6.39	106.50	85.20
273.300	3/10	6.39	106.50	85.20
273.400	4/10	6.39	106.50	85.20
273.500	1/2	6.39	106.50	85.20
273.600	6/10	6.39	106.50	85.20
273.700	7/10	6.39	106.50	85.20
273.750	3/4	6.39	106.50	85.20
273.800	8/10	6.39	106.50	85.20
273001	1	6.39	106.50	85.20
27301.5	1-1/2	6.39	106.50	85.20
273002	2	6.39	106.50	85.20
273003	3	6.39	106.50	85.20
273004	4	6.39	106.50	85.20
273005	5	6.39	106.50	85.20

3AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 20-sec. max. Length 1 1/4", dia. 1/4".

311004	4	$0.66	$11.00	$8.80
311005	5	.48	8.00	6.40
311006	6	.48	8.00	6.40
31107.5	7-1/2	.48	8.00	6.40
311008	8	.48	8.00	6.40
311010	10	.48	8.00	6.40
311015	15	.48	8.00	6.40
311025	25	.48	8.00	6.40
311030	30	.48	8.00	6.40
311035	35	.66	11.00	8.80

3AG FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1 1/4", dia. 1/4". UL Listed thru 8 amps.

312.010	1/100	$3.57	$59.50	$47.60
312.031	1/32	3.09	51.50	41.20
312.062	1/16	1.59	26.50	21.20
312.100	1/10	1.59	26.50	21.20
312.125	1/8	1.59	26.50	21.20
312.150	15/100	1.59	26.50	21.20
312.175	.175	1.59	26.50	21.20
312.187	3/16	1.59	26.50	21.20
312.200	2/10	1.59	26.50	21.20
312.250	1/4	.90	15.00	12.00
312.300	3/10	.90	15.00	12.00
312.375	3/8	.90	15.00	12.00
312.500	1/2	.90	15.00	12.00
312.600	6/10	.90	15.00	12.00
312.750	3/4	.90	15.00	12.00
312001	1	.66	11.00	8.80
3121.25	1-1/4	.66	11.00	8.80
31201.5	1-1/2	.66	11.00	8.80
31201.6	1-6/10	.66	11.00	8.80
312002	2	.66	11.00	8.80
31202.5	2-1/2	.66	11.00	8.80
312003	3	.66	11.00	8.80
312004	4	.78	13.00	10.40
312005	5	.78	13.00	10.40
312006	6	.78	13.00	10.40
312007	7	.78	13.00	10.40
312008	8	1.11	18.50	14.80
312010	10	1.11	18.50	14.80

3AG SLO BLO FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1 1/4", dia. 1/4". UL Listed thru 7 amps.

313.010	1/100	$2.64	$44.00	$35.20
313.031	1/32	2.64	44.00	35.20
313.040	4/100	2.64	44.00	35.20
313.062	1/16	1.98	33.00	26.40
313.100	1/10	1.98	33.00	26.40
313.125	1/8	1.98	33.00	26.40
313.150	15/100	1.98	33.00	26.40
313.175	.175	1.98	33.00	26.40
313.187	3/16	1.98	33.00	26.40
313.200	2/10	1.98	33.00	26.40
313.250	1/4	1.98	33.00	26.40
313.300	3/10	1.98	33.00	26.40
313.375	3/8	1.98	33.00	26.40
313.400	4/10	1.98	33.00	26.40
313.500	1/2	1.98	33.00	26.40
313.600	6/10	1.98	33.00	26.40
313.700	7/10	1.98	33.00	26.40
313.750	3/4	1.98	33.00	26.40
313.800	8/10	1.98	33.00	26.40
31301.2	1-2/10	1.89	31.50	25.20
3131.25	1-1/4	1.89	31.50	25.20
31301.5	1-1/2	1.89	31.50	25.20
31301.6	1-6/10	1.89	31.50	25.20
313002	2	1.89	31.50	25.20
31302.5	2-1/2	1.59	26.50	21.20
31302.8	2-8/10	1.59	26.50	21.20
313003	3	1.59	26.50	21.20
31303.2	3-2/10	1.59	26.50	21.20
313004	4	1.59	26.50	21.20
313005	5	1.59	26.50	21.20
3136.25	6-1/4	1.59	26.50	21.20
313007	7	1.59	26.50	21.20
313008	8	1.59	26.50	21.20
313010	10	1.59	26.50	21.20
313015	15	1.59	26.50	21.20
313020	20	1.59	26.50	21.20
313025	25	1.59	26.50	21.20
313030	30	1.59	26.50	21.20

3AG PIGTAIL FUSES (250 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. max. Length 1 1/4", dia. 1/4", 1 1/2" pigtails. UL Listed.

318.010	1/100	$4.23	$70.50	$56.40
318.031	1/32	3.90	65.00	52.00
318.062	1/16	2.43	40.50	32.40
318.100	1/10	2.43	40.50	32.40
318.125	1/8	2.43	40.50	32.40
318.150	15/100	2.43	40.50	32.40
318.175	.175	2.43	40.50	32.40
318.187	3/16	2.43	40.50	32.40
318.200	2/10	2.43	40.50	32.40
318.250	1/4	1.59	26.50	21.20
318.300	3/10	1.59	26.50	21.20
318.375	3/8	1.59	26.50	21.20
318.500	1/2	1.59	26.50	21.20
318.750	3/4	1.59	26.50	21.20
318001	1	1.23	20.50	16.40
3181.25	1-1/4	1.23	20.50	16.40
31801.5	1-1/2	1.23	20.50	16.40
31801.6	1-6/10	1.23	20.50	16.40
318002	2	1.23	20.50	16.40
31802.5	2-1/2	1.23	20.50	16.40
318003	3	1.23	20.50	16.40
318004	4	1.32	22.00	17.60
318005	5	1.32	22.00	17.60
318006	6	1.32	22.00	17.60
318007	7†	1.32	22.00	17.60
318008	8†	1.59	26.50	21.20

3AG SLO BLO PIGTAIL FUSES (125 V)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 5-sec. min. Lg. 1 1/4", dia. 1/4", 1 1/2" pigtails. UL Listed thru 7 amps.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
315.010	1/100	$3.18	$53.00	$42.40
315.031	1/32	3.18	53.00	42.40
315.062	1/16	2.43	40.50	32.40
315.100	1/10	2.43	40.50	32.40
315.125	1/8	2.43	40.50	32.40
315.150	15/100	2.43	40.50	32.40
315.175	.175	2.43	40.50	32.40
315.187	3/16	2.43	40.50	32.40
315.200	2/10	2.43	40.50	32.40
315.250	1/4	2.43	40.50	32.40
315.300	3/10	2.43	40.50	32.40
315.375	3/8	2.43	40.50	32.40
315.400	4/10	2.43	40.50	32.40
315.500	1/2	2.43	40.50	32.40
315.600	6/10	2.43	40.50	32.40
315.700	7/10	2.43	40.50	32.40
315.750	3/4	2.43	40.50	32.40
315.800	8/10	2.43	40.50	32.40
315001	1	2.43	40.50	32.40
31501.2	1-2/10	2.34	39.00	31.20
3151.25	1-1/4	2.34	39.00	31.20
31501.5	1-1/2	2.34	39.00	31.20
31501.6	1-6/10	2.34	39.00	31.20
315002	2	2.34	39.00	31.20
31502.5	2-1/2	1.98	33.00	26.40
31502.8	2-8/10	1.98	33.00	26.40
315003	3	1.98	33.00	26.40
31503.2	3-2/10	1.98	33.00	26.40
315004	4	1.98	33.00	26.40
315005	5	1.98	33.00	26.40

3AB TINY MIGHTY (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1 1/4", dia. 1/4". UL Listed thru 15 A.

314.125	1/8	$1.32	$22.00	$17.60
314.250	1/4	1.32	22.00	17.60
314.375	3/8	1.32	22.00	17.60
314.500	1/2	1.32	22.00	17.60
314.750	3/4	1.32	22.00	17.60
314001	1	1.32	22.00	17.60
314002	2	1.32	22.00	17.60
314003	3	1.32	22.00	17.60
314004	4	1.32	22.00	17.60
314005	5	1.14	19.00	15.20
314006	6	1.14	19.00	15.20
314007	7	1.14	19.00	15.20
314008	8	1.14	19.00	15.20
314010	10	1.14	19.00	15.20
314012	12	1.14	19.00	15.20
314015	15	1.14	19.00	15.20
314020	20	1.14	19.00	15.20
314025	25	1.68	28.00	22.40
314030	30	1.68	28.00	22.40

8AG FUSES

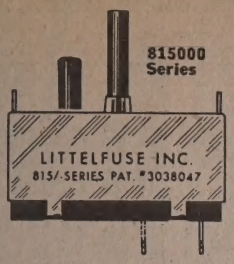
Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1", dia. 1/4". UL Listed thru 5 amps.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
362.125	1/8	$1.59	$26.50	$21.20
362.250	1/4	.90	15.00	12.00
362.375	3/8	.90	15.00	12.00
362.500	1/2	.90	15.00	12.00
362.750	3/4	.90	15.00	12.00
362001	1	.66	11.00	8.80
36201.5	1-1/2	.66	11.00	8.80
362002	2	.66	11.00	8.80
36202.5	2-1/2	.66	11.00	8.80
362003	3	.66	11.00	8.80
362005	5	.48	8.00	6.40
362006	6	.48	8.00	6.40
362008	8	.48	8.00	6.40
362010	10	.48	8.00	6.40
362012	12	.48	8.00	6.40
362015	15	.48	8.00	6.40
362020	20	.48	8.00	6.40
362025	25	.48	8.00	6.40
362030	30	.48	8.00	6.40

8AG INSTRUMENT FUSES

Blow Time: 100%, 4-hour min.; 200%, 5-sec. max. Length 1", dia. 1/4".

361.002	1/500	$9.57	$159.50	$127.60
361.005	1/200	4.23	70.50	56.40
361.010	1/100	3.57	59.50	47.60
361.031	1/32	3.09	51.50	41.20
361.062	1/16	1.98	33.00	26.40
361.100	1/10	1.59	26.50	21.20
361.125	1/8	1.59	26.50	21.20
361.187	3/16	1.59	26.50	21.20
361.200	2/10	1.59	26.50	21.20
361.250	1/4	.90	15.00	12.00
361.375	3/8	.90	15.00	12.00
361.400	4/10	.90	15.00	12.00
361.500	1/2	.90	15.00	12.00
361.750	3/4	.90	15.00	12.00
361001	1	.66	11.00	8.80
36101.5	1-1/2	.66	11.00	8.80
361002	2	.66	11.00	8.80
361003	3	.66	11.00	8.80
361004	4	.66	11.00	8.80
361005	5	.66	11.00	8.80



HEAVY DUTY MANUAL RESET CIRCUIT BREAKERS

Exact replacement protector for TV circuits. Ideal for current overload protection for model railroads, toy transformers, hair dryers, small appliances, tools, wiring, etc. For 125 VAC. Size, 1¾" x 1 3/16" x ½". Standard circuit breakers also available. Suffix **C** indicates individually carded.

815.650C thru 81501.5C—Net Ea.. **$2.27**
815.650 thru 81501.5—Box of 5... **2.20**
8151.75C thru 815007C—Net Ea.. **1.64**
8151.75 thru 815007—Box of 5.... **1.56**

L.F. No.	Trip Rating Amps	L.F. No.	Trip Rating Amps
815.650*	.650	815003	3
815.800*	.800	8153.25	3.25
815001 *	1	81503.5	3.5
8151.25*	1.25	8153.75	3.75
81501.5*	1.5	815004	4
8151.75	1.75	81504.5	4.5
815002	2	815005	5
8152.25	2.25	815006	6
81502.5	2.5	815007	7
8152.75	2.75		

*Add prefix **R** for std. circuit breakers.

R815.650C thru R81501.5C—Net. **$0.98**
R815.650 thru R81501.5—
Box of 5..... **.94**

L.F. No. 815(000) PA-Circuit Breaker Adapter Plate—Net Each **$0.22**; 100 Net: **$18.50** ($100 lots); **$14.80** ($500 lots).

3AG MOUNTINGS WITH SCREW TERMINALS—TYPE T

L.F. No.	Description	Net Ea. Lots of 5	Net per 100	
			100	500
356001	1 pole	$0.55	$ 45.50	$ 36.40
356002	2 pole	1.47	95.50	76.40
356003	3 pole	1.88	156.50	125.20
356004	4 pole	2.33	194.00	155.20
356005	5 pole	2.89	240.50	192.40
356006	6 pole	3.47	289.00	231.20
356007	7 pole	4.03	336.00	268.80
356008	8 pole	4.61	384.50	307.60
356009	9 pole	5.21	434.50	347.60
356010	10 pole	5.81	484.50	387.60
356011	11 pole	6.36	530.00	424.00
356012	12 pole	6.94	578.00	462.40

3AG MOUNTINGS WITH SOLDER TERMINALS—TYPE S

357001	1 pole	$0.32	$ 26.50	$ 21.20
357002	2 pole	.53	44.00	35.20
357003	3 pole	.86	72.00	57.60
357004	4 pole	1.05	87.50	70.00
357005	5 pole	1.30	108.00	86.40
357006	6 pole	1.54	128.00	102.40
357007	7 pole	1.73	144.00	115.20
357008	8 pole	1.97	164.00	131.20
357009	9 pole	2.23	186.00	148.80
357010	10 pole	2.45	204.50	163.60
357011	11 pole	2.72	226.50	181.20
357012	12 pole	2.99	249.50	199.60

8AG MOUNTINGS

383001	1 pole*	$0.88	$73.00	$58.40
383002	1 pole†	.59	49.00	39.20

*Thru-panel. †Meter back.

8AG MOUNTINGS WITH SOLDER TERMINALS—TYPE S

L.F. No.	Description	Net Ea. Lots of 5	Net per 100	
			100	500
387001	1 pole	$0.32	$ 26.50	$ 21.20
387002	2 pole	.53	44.00	35.20
387003	3 pole	.86	72.00	57.60
387004	4 pole	1.05	87.50	70.00
387005	5 pole	1.30	108.00	86.40
387006	6 pole	1.54	128.00	102.40
387007	7 pole	1.73	144.00	115.20
387008	8 pole	1.97	164.00	131.20
387009	9 pole	2.23	186.00	148.80
387010	10 pole	2.45	204.50	163.60
387011	11 pole	2.72	226.50	181.20
387012	12 pole	2.99	249.50	199.60

MOUNTINGS FOR RECTIFIERS

L.F. No.	Description	Net Each, Lots of 5	Net per 100	
			100	500
099062	Single pole, 3/16" base	$0.34	$28.00	$22.40
099063	Double pole, 3/16" base	.58	48.50	38.80
099065	Double pole, 1/16" base	.40	33.00	26.40
099065-3	1/16" Bakelite insulator	.38	3.15	2.52
099067	Single pole 1/16" base	.19	16.00	12.80
099067-3	1/16" Bakelite insulator	.026	2.20	1.76

3AG MOUNTINGS

351009	Hinged can cover, 2 pole	$2.49	$207.50	$166.00
351010	Spare, 1 pole	.32	26.50	21.20
352001	Through panel, 1 pole	.50	42.00	33.60
353001	Panel, 1 pole	.88	73.00	58.40

STANDARD FUSE CLIPS (PHOSPHOR BRONZE, NICKEL PLATED)

L.F. No.	Fuse Adaptation	Type	Net Each, Lots of 5	Net per 100	
				100	500
101001	SFE, 3AG, 8AG, 3AB	Ear	$0.047	$ 3.90	$ 3.12
101002	SFE, 3AG, 8AG, 3AB	Earless	.054	4.20	3.36
101003*	SFE, 3AG, 8AG, 3AB	Lug	.062	5.15	4.12
103001	4AG, 4AB	Ear	.08	6.50	5.20
104002	4AG, 4AB	Earless	.08	6.50	5.20
105001	5AG	Ear	.10	8.00	6.40
105002	5AG	Earless	.10	8.00	6.40
107001	9/16" dia.	Ear	.13	10.50	8.40
107002	9/16" dia.	Earless	.13	10.50	8.40
109001	13/16" dia.	Ear	.46	38.50	30.80
109002	13/16" dia.	Earless	.46	38.50	30.80

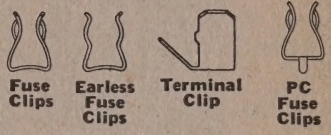
*Unplated, bright dip.

STANDARD FUSE CLIPS (BERYLLIUM COPPER, SILVER PLATED)

121001	SFE, 3AG, 8AG, 3AB	Ear	$0.09	$ 7.50	$ 6.00
121002	SFE, 3AG, 8AG, 3AB	Earless	.09	7.50	6.00
121004	SFE, 3AG, 8AG, 3AB	Lug	.26	22.00	17.60
123001	4AG, 4AB	Ear	.16	13.00	10.40
123002	4AG, 4AB	Earless	.16	13.00	10.40
125001	5AG, hi-volt	Ear	.25	20.50	16.40
125002	5AG, hi-volt	Earless	.25	20.50	16.40
127001	9/16" dia.	Ear	.57	47.50	38.00
127002	9/16" dia.	Earless	.57	47.50	38.00
129001	13/16" dia.	Ear	1.36	113.00	90.40
129002	13/16" dia.	Earless	1.36	113.00	90.40

PC BOARD FUSE CLIPS (SPRING BRONZE)

102068	1AG, 3AG, 8AG	Ear	$0.06	$5.00	$4.00
102069	1AG, 3AG, 8AG	Earless	.06	5.00	4.00



UNIVERSAL FUSE RETAINER

Comes with three different length springs for fuse sizes 7½ SFE thru 3AG.
L.F. No. 150145—Net Each..... **$ 0.63**
Net 100..**$52.50**; Lots 500, Net 100 . **$42.00**

BAKELITE® IN-LINE FUSE HOLDERS ASSEMBLED WITH 19" LEAD

L.F. No.	Use with Fuses	Net Ea., Lots of 5	Net per 100	
			100	500
155004A	SFE 4, 1AG	$0.63	$52.50	$42.00
155006A	SFE 6	.63	52.50	42.00
155507.5A	SFE 7½	.63	52.50	42.00
155009A	SFE 9, 7AG	.63	52.50	42.00
155014A	SFE 14	.63	52.50	42.00
155020A	SFE 20, 3AG	.63	52.50	42.00

®Bakelite Corp.

TWIST-LOCK IN-LINE FUSE HOLDER

Assembled with 19" lead and fuse.

L.F. No.	Use with Fuses	Net Ea. Lots of 5	Net per 100	
			100	500
155104A	SFE 4 amp	$1.05	$63.00	$52.50
155106A	SFE 6	1.05	63.00	52.50
155517.5A	SFE 7½	1.05	63.00	52.50
155109A	SFE 9	1.05	63.00	52.50
155114A	SFE 14	1.05	63.00	52.50
155120A	SFE 20	1.05	63.00	52.50

UNIVERSAL TWIST-LOCK FUSE HOLDER

Supplied with 15" wire and springs to accommodate any ¼" dia. fuse.
L.F. No. 150145..... **$ 1.05**
Net per 100..... **63.00**
Lots 500, Net per 100..... **52.50**

MALLORY Duracell® Batteries

MERCURY DURACELL BATTERIES

Mercury Duracell batteries offer more power per unit of volume than any other type. Sizes range from the RM312, which is aspirin tablet size, up thru the Power-Pak types. Voltage stability is excellent, as is storage life. Types with **R** in the suffix are rated at 1.35 volts per cell; all others rated 1.4 V. All have flat terminals unless otherwise noted. Types with suffix **T** have solder tab on negative terminal; suffix **T2**, solder tabs on both terminals.

Mallory No.	Volts	mAH	Use	Size, Inches	Oz.	Net
MP401	1.4	1000	Paging	29/64 dia. x 1 1/8	0.4	$0.98
MP675	1.4	220	Calculator	29/64 dia. x 7/32	0.07	.64
RM1	1.4	1000	Phys. hndcp.	5/8 dia. x 21/32	0.43	.90
RM1R	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	.99
RM1RT†	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	1.09
RM1RT2‡	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	1.19
RM3R	1.35	2200	Electronic	1 dia. x 21/32	0.93	1.53
RM4R	1.35	3400	Electronic	1.2 dia. x 21/32	1.6	1.96
RM4RT†	1.35	3400	Electronic	1.2 dia. x 21/32	1.6	2.06
RM4Z	1.4	2400	Electronic	1.2 dia. x 1/2	1.2	1.28
RM12	1.4	3600	Tape rerdr.	5/8 dia. x 1 61/64	2.0	1.55
RM12R	1.35	3600	Tachometer	5/8 dia. x 1 61/64	2.0	1.68
RM12RT†	1.35	3600	Electronic	5/8 dia. x 1 61/64	2.0	1.78
RM12RT2‡	1.35	3600	Electronic	5/8 dia. x 1 61/64	2.0	1.88
RM42	1.4	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	3.93
RM42R	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	4.75
RM42RT†	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	4.85
RM42RT2‡	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	4.95
RM312	1.4	45	Phys. hndcp.	5/16 dia. x 9/64	0.02	.28
RM400	1.4	75	Phys. hndcp.	29/64 dia. x 9/64	0.04	.71
RM400R§	1.35	75	Electronic	29/64 dia. x 9/64	0.04	.90
RM400RT2‡	1.35	75	Electronic	29/64 dia. x 9/64	0.04	.88
RM401	1.4	800	Radio "N"	29/64 dia. x 1 1/8	0.4	.90
RM401R	1.35	800	Electronic	29/64 dia. x 1 1/8	0.4	1.09
RM411	14	160	Electronic	1 x 19/32 x 1 27/64	1.08	2.34
RM412	22.4	160	Electronic	1 x 19/32 x 1 31/32	1.65	3.12
RM413	28	160	Electronic	1 x 19/32 x 2 1/2	2.04	3.90
RM415*	42	160	Electronic	1 x 19/32 x 3 1/2	3.03	5.85
RM450R	1.35	350	Electronic	29/64 dia. x 9/16	0.18	.99
RM502R	1.35	2400	Electronic	1/2 dia. x 1 61/64	1.05	1.52
RM520	1.4	130	Phys. hndcp.	1/2 dia. x 9/32	0.07	.20
RM575	1.4	100	Phys. hndcp.	.455 dia. x .129	0.05	.28
RM601R	1.35	1800	Electronic	5/8 dia. x 15/32	1.2	1.52
RM601RT2‡	1.35	1800	Electronic	5/8 dia. x 15/32	1.2	1.72
RM625	1.4	350	Phys. hndcp.	5/8 dia. x 1/4	0.14	.84
RM625R	1.35	250	Electronic	5/8 dia. x 1/4	0.14	.95
RM625RT†	1.35	250	Electronic	5/8 dia. x 1/4	0.14	1.05
RM625RT2‡	1.35	250	Electronic	5/8 dia. x 1/4	0.14	1.15
RM630	1.4	350	Phys. hndcp.	5/8 dia. x 1/4	0.17	.75
RM630R	1.35	250	Electronic	5/8 dia. x 1/4	0.17	.95
RM640#	1.4	500	Radio	5/8 dia. x 7/16	0.26	.84
RM640R	1.35	500	Electronic	5/8 dia. x 7/16	0.26	.95
RM640RT2‡	1.35	500	Electronic	5/8 dia. x 7/16	0.26	$1.15
RM675	1.4	160	Phys. hndcp.	29/64 dia. x 1 3/64	0.07	.45
TR112	2.8	350	Electronic	21/32 dia. x 1 9/64	0.29	2.02
TR112R	2.7	250	Electronic	21/32 dia. x 1 9/64	0.29	2.20
TR113R	4.05	250	Electronic	21/32 dia. x 5 3/64	0.45	2.55
TR114R	5.4	250	Electronic	21/32 dia. x 1 1/16	0.59	2.81
TR114RT2‡	5.4	250	Electronic	21/32 dia. x 1 1/16	0.59	3.01
TR115	7.0	350	Dictating	21/32 dia. x 1 5/16	0.73	3.00
TR115R	6.75	250	Electronic	21/32 dia. x 1 5/16	0.73	3.20
TR118	11.2	350	Medical	21/32 dia. x 2 1/32	1.13	3.62
TR126	8.4	600	Radio	3/4 dia. x 2	1.6	2.20
TR132	2.8	1000	Paging	21/32 dia. x 1 5/16	1	1.81
TR132R	2.7	1000	Electronic	21/32 dia. x 1 5/16	1	1.89
TR133§	4.2	1000	Radio, Pag.	21/32 dia. x 2	1.4	2.27
TR133R	4.05	1000	Radio, Pag.	21/32 dia. x 2	1.4	2.41
TR134	5.6	1000	Gar. door	21/32 dia. x 2 33/64	1.9	2.46
TR134R	5.4	1000	Electronic	21/32 dia. x 2 33/64	1.9	2.91
TR134T2‡	5.6	1000	Electronic	21/32 dia. x 2 33/64	1.9	2.35
TR135	7.0	1000	Gar. door	21/32 dia. x 3 1/4	2.4	2.80
TR135R	6.75	1000	Electronic	21/32 dia. x 3 1/4	2.4	3.43
TR136	8.4	1000	Gar. door	21/32 dia. x 3 29/32	2.9	3.23
TR136R	8.1	1000	Electronic	21/32 dia. x 3 29/32	2.9	3.89
TR137	9.8	1000	Electronic	21/32 dia. x 4 9/16	3.4	3.72
TR137R	9.45	1000	Electronic	21/32 dia. x 4 9/16	3.4	4.32
TR145	7	250	Electronic	21/32 dia. x 1 3/16	0.58	2.74
TR146X*§	8.4	575	Radio	1 x 21/32 x 1 3/4	2.0	1.62
TR152	2.8	350	Electronic	15/32 dia. x 1 1/8	0.42	1.33
TR152R	2.7	350	Electronic	15/32 dia. x 1 1/8	0.42	1.69
TR153R	4.05	350	Electronic	15/32 dia. x 1 1/16	0.6	2.16
TR162R	2.7	500	Electronic	21/32 dia. x 7/8	0.58	2.05
TR163	4.2	500	TV tuner	21/32 dia. x 1 5/16	0.87	2.46
TR163R	4.05	500	Electronic	21/32 dia. x 1 5/16	0.87	2.68
TR164	5.6	500	Radio	21/32 dia. x 1 3/4	1.16	2.20
TR164R	5.40	500	Electronic	21/32 dia. x 1 3/4	1.16	3.33
TR165	7	500	TV tuner	21/32 dia. x 2 3/16	1.45	2.79
TR165R	6.75	500	Electronic	21/32 dia. x 2 3/16	1.45	3.19
TR169	12.6	500	Electronic	21/32 dia. x 3 61/64	2.88	4.75
TR175	7	160	Radio	31/64 dia. x 1 1/32	0.4	1.94
TR177*	9.8	160	Radio	35/64 dia. x 1 29/32	0.67	1.95
TR233	4.2	2200	Radio	1 1/64 dia. x 1 31/32	3	3.89
TR233R	4.05	2200	Electronic	1 1/64 dia. x 1 31/32	3	4.19
TR234	5.6	2200	Electronic	1 1/64 dia. x 2 19/32	3.88	5.17
TR234R	5.4	2200	Electronic	1 1/64 dia. x 2 19/32	3.88	5.60
TR235R	6.75	2200	Electronic	1 1/64 dia. x 3 1/4	4.63	6.92
TR236R	8.10	2200	Electronic	1 1/64 dia. x 3 29/32	4.76	8.23
TR239R	12.15	2200	Electronic	1 dia. x 5 13/16	9.45	9.91
TR286*	8.4	750	Radio	1 dia. x 1 15/16	1.6	2.20
TR289*	12.6	750	CB radio	1 dia. x 2 25/64	3.6	4.34
TR431*	10.7	1000	Dictation	1 dia. x 3 9/64	5	4.55
ZM9#	1.4	2400	Radio "AA"	1/2 dia. x 1 31/32	1	.96
ZM12	1.4	3600	Clock	5/8 dia. x 1 61/64	2.0	2.59
4R82	8.1	250	Paging	21/32 dia. x 1 1/32	0.9	2.59
9R81	1.4	800	Paging	29/64 dia. x 1 1/8	0.4	1.16

*Snap terminals. †1 tab, 1 flat terminal. ‡2 tab terminals. §Add suffix **B** for blister pack; add **1c** to price. #Add suffix **B2** for blister pack (2).

MERCURY POWER-PAK™ BATTERIES

Mercury Power-Pak batteries are used in heavy duty industrial applications where extreme reliability is required. Detailed terminal drawings and precise specifications are available on request.

Mall. No.	Volts	mAH	Use	Terminals	Net
302157	1.35	28,000	Radiation eqpt.	Socket	$15.56
302250	9.45	250	Radiation eqpt.	Tabs	3.90
302351	5.4	2,200	Fire alarm	Flat	8.46
302358	10.8	250	Radiation eqpt.	Leads	5.19
302362	16.2	250	Radiation eqpt.	Leads	6.92
302435	6.75	250	Radiation eqpt.	Flat	4.32
302462	97.2	1,000	Transmitter "B"	Leads	48.44
302465	47.25	1,000	Geophysical	Leads	31.12
302478	9.8	2,400	Recorder	Flat	9.96
302580	27	3,400	Electronic	Socket	41.51
302642	7.0	2,400	Fire alarm	Flat	7.35
302651	1.35	14,000	Electronic	Leads	6.05
302702	2.7	2,200	Geophysical	Leads	5.17
302904	5.4	3,400	Meter	Leads	9.52
302905	6.75	3,400	Test equipment	Leads	10.89
302907	9.45	3,400	Electronic	Leads	13.30
302908	10.8	3,400	Radiation eqpt.	Leads	15.12
303145	8.4	3,600	Depth finder	Snap	9.95
303236	4.2	1,000	Electronic	Flat	1.95
303314	16.8	2,400	Transceiver	Flat	12.58
303394	11.2	3,600	Electronic	Snap	14.70
303496	4.2	500	Paging	Button	1.80
303996	8.4	575	Medical	Snap	1.87

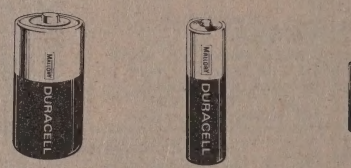
DURACELL PHOTO BATTERIES

Suffix **B** indicates blister pack. **B2** indicates pack of 2.

Mallory Number	Volts	Wt. Oz.	Net Each	Mallory Number	Volts	Wt. Oz.	Net Each
PX1B	1.35	0.6	$1.10	PX28B	6.0	0.13	$2.20
PX4	5.6	3.2	2.55	PX30*	1.5	1.5	1.29
PX6	8.1	4.0	3.51	PX30B	1.5	1.5	1.30
PX13B	1.35	0.14	.90	PX32	5.6	1.2	2.20
PX14B	2.7	0.3	1.75	PX625B	1.35	0.15	.90
PX18	45	5.3	4.71	PX640B	1.35	0.38	.97
PX19*‡	4.5	1.2	1.68	PX675B	1.35	0.07	.90
PX21*‡	4.5	1.2	1.68	PX825*	1.5	0.38	.61
PX23B	5.6	2.0	.97	PX825B2*	1.5	0.38	1.23
PX24*‡	3.0	1.0	1.55	TR112R	2.7	0.29	2.20
PX25B	4.05	0.5	2.20	7R31	4.2	0.67	1.94
PX27B	4.05	1.6	.90	7R31B	4.2	0.67	1.95

*Alkaline; all other mercury. ‡Available in single blister pack, add **1c** to price.

ALKALINE DURACELL BATTERIES



Designed for high drain use such as photoflash, movie cameras, lighting, etc.; up to 10 times longer life than zinc-carbon types.

STANDARD ALKALINE DURACELL BATTERIES

Mallory No.	Volts	Use	Wt. Oz.	Net Each
MN1300†	1.5	All purpose "D"	5¼	$0.55
MN1400‡	1.5	All purpose "C"	2⅓	.55
MN1500‡§	1.5	All purpose "AA"	.82	.49
MN1604†	9.0	Radio	1½	.975
MN2400‡	1.5	All purpose "AAA"	.4	.455
MN9100‡	1.5	All purpose "N"	.34	.463

†Add suffix **B** for blister pack; add **1c** to price. ‡Add suffix **B2** for blister (2). §Add suffix **B4** for blister (4).

RECHARGEABLE ALKALINE DURACELL BATTERIES

Not interchangeable with other rechargeable batteries.

Mallory No.	Volts	Size, Inches (Cell)	Wt., Oz.	Net
SA13D†	1.5	1.3 dia. x 2.367 h. (D)	5	$1.49
SA14C†	1.5	1.01 dia. x 1.93 h. (C)	2½	1.29
SA15AA†	1.5	0.55 dia. x 1.94 h. (AA)	1	.84

†Add suffix **B2** for blister pack (2).

MODEL BC-16 DURACELL ALKALINE BATTERY CHARGER

Will charge either two or four Mallory (only) Duracell rechargeable alkaline batteries in any pair combination.

Mallory Model No. BC-16—Net Each..... **$13.65**

SILVER OXIDE DURACELL, GRID BIAS CELLS

Mallory Number	Volts	Size, In.	Net Each	Mallory Number	Volts	Net Each
MS13	1.56	.21 x .31	$0.39	MS212	1.56	$0.27
MS41	1.56	.16 x .46	.39	MS312	1.56	.39
MS76B	1.56	.21 x .46	.58			

*Standard package, weight, 8 oz.; all others 4 oz.

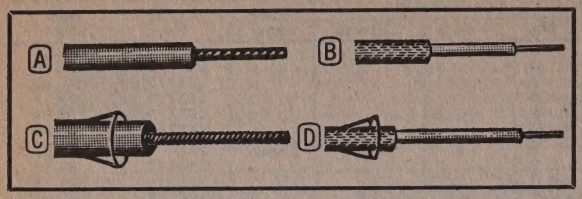
SHIELDED TEFLON CABLES MIL-W-16878D, UL STYLES 1212, 1213

Each conductor stranded silver-plated copper. Type E, .010" extruded Teflon insulation per MIL-W-16878D. Rated 600 volts. A silver-plated copper shield is braided over the conductor(s) for 90% coverage. Outer Cover column in table below lists Shield for no outer insulation; Fused for a braided, white, fused-Teflon-impregnated, fiberglass braid over the shield; or Taped for a sintered, wrapped, white Teflon tape jacket over the shield; Temp., −65° C to +200° C. Conductor color code: 1=White, 2=Black, 3=Red, 4=Green, 5=Yellow, 6=Blue, 7=Brown, 8=Orange, 9=Slate, 10=Violet, 11=White/Black, 12=White/Brown, 13=White/Red, 14=White/Orange, 15=White/Yellow.

Conductor(s)			Outer	Alpha	Net
No.	Size	Strand	Cover	No.	100'*
1	24	19/36	Shield	2809	$ 41.90
2				2809/2	70.83
3				2809/3	88.25
4				2809/4	103.80
5				2809/5	113.07
6				2809/6	137.51
7				2809/7	154.59
8				2809/8	180.29
9				2809/9	201.14
10				2809/10	219.63
12				2809/12	258.83
15				2809/15	318.17
1	24	19/36	Fused	2811	50.88
2				2811/2	70.52
3				2811/3	102.43
4				2811/4	115.38
5				2811/5	156.81
6				2811/6	186.06
7				2811/7	203.97
8				2811/8	233.40
9				2811/9	255.35
10				2811/10	274.73
12				2811/12	311.40
15				2811/15	376.83
1	24	19/36	Taped	2821	51.75
2				2821/2	73.00
3				2821/3	99.17
4				2821/4	119.85
5				2821/5	158.84
6				2821/6	187.07
7				2821/7	203.07
8				2821/8	248.49
9				2821/9	270.93
10				2821/10	290.82
12				2821/12	334.76
15				2821/15	401.46
1	22	19/34	Shield	2812	41.90
2				2812/2	65.42
3				2812/3	101.17
4				2812/4	115.68
5				2812/5	185.34
6				2812/6	218.33
7				2812/7	243.44
8				2812/8	285.29
9				2812/9	312.56
10				2812/10	336.53
12				2812/12	379.94
15				2812/15	423.44
1	22	19/34	Fused	2814	52.82
2				2814/2	76.65
3				2814/3	102.02
4				2814/4	126.93
5				2814/5	185.34
6				2814/6	218.33
7				2814/7	243.44
8				2814/8	285.29
9				2814/9	312.56
10				2814/10	336.53
12				2814/12	379.94
15				2815/15	423.44
1	22	19/34	Taped	2824	54.08
2				2824/2	84.33
3				2824/3	110.75
4				2824/4	133.65
5				2824/5	187.56
6				2824/6	220.10
7				2824/7	245.78
8				2824/8	293.51
9				2824/9	320.72
10				2824/10	345.23
12				2824/12	397.47
15				2824/15	479.60
1	20	19/32	Shield	2815	46.97
2				2815/2	73.77
3				2815/3	101.48
4				2815/4	126.75
5				2815/5	148.44
6				2815/6	178.82
7				2815/7	204.90
8				2815/8	238.59
9				2815/9	265.92
10				2815/10	290.58
1	20	19/32	Fused	2817	56.50
2				2817/2	85.67
3				2817/3	113.91
4				2817/4	140.28
5				2817/5	$195.45
6				2817/6	234.00
7				2817/7	262.02
8				2817/8	303.27
9				2817/9	332.03
10				2817/10	357.95
1	20	19/32	Taped	2827	60.67
2				2827/2	88.92
3				2827/3	116.33
4				2827/4	145.05
5				2827/5	201.06
6				2827/6	236.97
7				2827/7	273.41
8				2827/8	319.13
9				2827/9	348.53
10				2827/10	375.09
1	18	19/30	Shield	2818	63.10
2				2818/2	104.67
3				2818/3	127.55
4				2818/4	179.99
5				2818/5	211.32
6				2818/6	252.42
7				2818/7	290.72
8				2818/8	337.16
9				2818/9	374.25
10				2818/10	408.41
1	18	19/30	Fused	2819	76.30
2				2819/2	104.01
3				2819/3	136.50
4				2819/4	195.65
5				2819/5	266.12
6				2819/6	312.33
7				2819/7	353.93
8				2819/8	413.66
9				2819/9	452.15
10				2919/10	488.00
1	18	19/30	Taped	2829	73.00
2				2829/2	100.80
3				2829/3	138.75
4				2829/4	188.78
5				2829/5	281.66
6				2829/6	329.57
7				2829/7	370.91
8				2829/8	444.44
9				2829/9	483.89
10				2829/10	520.53
1	16	19/29	Shield	2807	62.80
2				2807/2	117.63
3				2807/3	152.61
4				2807/4	187.59
5				2807/5	226.82
6				2807/6	271.82
7				2807/7	312.17
8				2807/8	366.23
1	16	19/29	Fused	2820	82.88
2				2820/2	131.10
3				2820/3	179.67
4				2820/4	228.24
5				2820/5	284.34
6				2820/6	336.50
7				2820/7	379.40
8				2820/8	448.23
1	16	19/29	Taped	2826	84.50
2				2826/2	130.35
3				2826/3	159.84
4				2826/4	251.48
5				2826/5	236.51
6				2826/6	355.79
7				2826/7	399.66
8				2826/8	473.15
1	14	19/27	Fused	2804	105.30
2				2804/2	163.94
3				2804/3	222.05
4				2804/4	275.45
5				2804/5	307.32
6				2804/6	330.54
1	14	19/27	Shield	2806	66.32
2				2806/2	117.63
3				2806/3	169.11
4				2806/4	217.56
5				2806/5	265.01
6				2806/6	323.03
1	14	19/27	Taped	2825	104.57
2				2825/2	166.22
3				2825/3	237.41
4				2825/4	294.62
5				2825/5	351.26
6				2825/6	418.49
1	12	19/25	Fused	2803	129.80
2				2803/2	226.82
3				2803/3	311.46
4				2803/4	391.97
1	12	19/25	Shield	2805	95.20
2				2805/2	170.72
3				2805/3	248.12
4				2805/4	320.39
1	12	19/25	Taped	2823	124.74
2				2823/2	232.17
3				2823/3	327.38
4				2823/4	410.87

*Other put-ups and discounts are available upon request.

SPECIFICATIONS MIL-W-76B AND MIL-W-16878/D HOOK-UP WIRE



SPECIFICATION MIL-W-76B PLASTIC HOOK-UP WIRE

TYPE MW (MEDIUM WALL) PLASTIC (FIG. A)

Single conductor stranded or solid tinned copper, polyvinylchloride insulation .016″ th. Rated 1000 volts. Temp., −40° C to +80° C.

STRANDED

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24(7)U	24	7/32	.059″	1-27	1550	$13.95	$ 2.37
22(7)U	22	7/30	.064″	1-27	1551	16.35	2.65
20(10)U	20	10/30	.073″	1-27	1553	18.60	3.10
18(16)U	18	16/30	.084″	1-27	1555	24.90	3.68
16(26)U	16	26/30	.095″	1-19	1557	35.85	5.13
14(41)U	14	41/30	.110″	1-19	1559	56.10	7.22
12(65)U	12	65/30	.125″	1-19	1560	81.00	11.08

SOLID

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24(1)U	24	1	.055″	1-19	1561/24	$11.25	$ 2.27
22(1)U	22	1	.060″	1-19	1561	12.75	2.27
20(1)U	20	1	.066″	1-19	1563	16.05	2.68
18(1)U	18	1	.074″	1-19	1565	22.05	3.50

TYPE MW (MEDIUM WALL) PLASTIC, SHIELDED (FIG. B)

Single conductor stranded tinned copper, polyvinylchloride insulation, tinned copper shield overall. Nominal insulation, .016″. Voltage rating, 1000 volts. Temp., −40° C to +80° C.

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24(7)S	24	7/32	.075″	1	1350	$ 69.38	$ 9.02
22(7)S	22	7/30	.085″	1	1351	76.13	9.52
20(10)S	20	10/30	.095″	1	1352	92.07	11.85
18(16)S	18	16/30	.105″	1	1353	113.33	13.22
16(26)S	16	26/30	.115″	1	1354	144.00	16.83
14(41)S	14	41/30	.130″	1	1355	218.63	25.52
12(65)S	12	65/30	.145″	1	1356	255.95	29.88

TYPE MW (MED. WALL) PLASTIC, NYLON JACKET (FIG. C)

Single conductor stranded tinned copper; polyvinylchloride insulation, nylon jacket overall. Nominal insulation, .016″. Voltage rating, 1000 volts. Temp., −40° C to +90° C.

Tpye MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
22(7)J	22	7/30	.072″	1-3	1504	$ 26.34	$ 4.22
20(10)J	20	10/30	.079″	1	1505	32.79	4.83
18(16)J	18	16/30	.090″	1	1506	46.34	7.23
16(26)J	16	26/30	.103″	1	1507	69.30	9.45
14(41)J	14	41/30	.118″	1	1508	101.43	13.02
12(65)J	12	65/30	.135″	1	1509	166.86	20.72

TYPE MW (MEDIUM WALL) PLASTIC, SHIELDED, NYLON JACKET (FIG. D)

Single conductor stranded tinned copper, white polyvinylchloride insulation, braided tinned copper shield, clear nylon jacket overall. Insul., .016″ th. Rated 1000 V. Temp., −40° C to +90° C.

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24(7)SJ	24	7/32	.085″	1	1370	$ 94.68	$12.38
22(7)SJ	22	7/30	.092″	1	1371	93.81	12.28
20(7)SJ	20	7/28	.100″	1	1372	107.60	13.72
18(19)SJ	18	19/30	.110″	1	1373	139.32	17.50
16(19)SJ	16	19/29	.210″	1	1374	158.94	19.42
14(19)SU	14	19/27	.140″	1	1375	227.63	26.85
12(19)SU	12	19/25	.156″	1	1376	256.02	29.92

TYPE MW (MEDIUM WALL) GLASS BRAID (FIG. B)

Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, color coded flame retardant lacquered glass braid overall. Nom. wall thickness, .016″. Voltage rating, 1000 volts. Temp. rating, −40° C to +80° C. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
18(16)B	18	16/30	.090″	1-6	1592	$ 84.57	$10.32
16(26)B	16	26/30	.105″	1-6	1593	111.38	13.62
14(41)B	14	41/30	.120″	1	1594	168.95	20.65
12(65)B	12	65/30	.135″	1	1595	256.13	31.32

SPECIFICATION N MIL-W-76B PLASTIC HOOK-UP WIRE (CONT'D)

TYPE MW (MEDIUM WALL) GLASS BRAID SHIELDED (FIG. D)

Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, white flame retardant lacquered glass braid with tinned copper shield overall, 80% coverage. Nom. wall thickness, .016″. Voltage rating, 1000 volts. Temp. rating, −40° C to +80° C. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Type MW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net Per Spool 1000′	Net Per Spool 100′
24(7)BS	24	7/32	.091″	1	1194/24	$127.88	$16.40
22(7)BS	22	7/30	.097″	1	1194/22	85.04	10.92
20(10)BS	20	10/30	.105″	1	1194	153.75	19.75
18(16)BS	18	16/30	.117″	1	1196	165.20	21.23
16(26)BS	16	26/30	.129″	1	1197	210.57	27.05

TYPE HW (HEAVY WALL) PLASTIC (FIG. A)

Single conductor stranded tinned copper; heavy wall polyvinylchloride insulation. Nominal insulation .032″ for 22-16 cond. sizes; .045″, all other sizes. Voltage rating, 2500 V 22-16 cond. sizes; 600 V, all other sizes. Temp., −40° C to +80° C.

Type HW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
22(7)U	22	7/30	.092″	1-6	1571	$ 23.79	$ 3.45
20(10)U	20	10/30	.100″	1-6	1573	30.12	4.35
18(16)U	18	16/30	.112″	1-6	1575	33.60	5.23
16(26)U	16	26/30	.126″	1-3	1577	43.05	6.22
14(41)U	14	41/30	.170″	1-3	1579	75.00	10.50
12(65)U	13	65/30	.186″	1-3	1651	116.40	14.50
10(105)U	10	105/30	.210″	1-3	1653	174.15	21.42
8(133)U	8	133/29	.260″	1-3	1655	417.33	47.75

TYPE LW (LIGHT WALL) PLASTIC (FIG. A) WITH REGULAR TINNED CONDUCTOR

Single conductor stranded tinned copper; light wall polyvinylchloride insulation .010″ th. Rated 300 volts. Temp., −40° C to +80° C.

Type LW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
30(7)U	30	7/38	.033″	1-19	1685	$13.80	$2.13
28(7)U	28	7/36	.035″	1-19	1686	11.70	2.08
26(7)U	26	7/34	.038″	1-19	1687	11.85	2.12
24(7)U	24	7/32	.043″	1-19	1688	12.60	2.27
22(7)U	22	7/30	.049″	1-19	1689	13.95	2.33
20(7)U	20	7/28	.060″	1-19	1690	17.85	2.95

TYPE LW (LIGHT WALL) PLASTIC, NYLON JACKET (FIG. C)

Single conductor stranded tinned copper, light wall polyvinylchloride insulation, clear nylon jacket overall. Insulation .010″ nominal. Rated 300 volts. Temp., −40° C to +90° C.

Type LW-C	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
26(7)J	26	7/34	.042″	1-19	1677	$18.59	$3.22
24(7)J	24	7/32	.047″	1-19	1678	18.98	3.23
22(7)J	22	7/30	.053″	1-19	1679	23.85	4.08
20(7)J	20	7/28	.065″	1-19	1680	32.88	5.43

SPECIFICATION MIL-W-16878D HOOK-UP WIRE

RX-7000 IRRADIATED-HEAT RESISTANT HOOK-UP WIRE (FIG. A)

Newly developed hook-up wire with insulation made of irradiated polyvinylchloride compound (PVC) provides insulation far superior to ordinary PVC. Withstands higher temperature, and even in direct contact with a soldering iron will not shrink back, melt, blow or deform. Ideal where high reliability is essential, particularly in the wiring of tight, high density systems, appliances, computer wiring, business machines, instrumentation and control systems. Rated 600 volts, Type B; 1000 volts, Type C. Temperature, +105° C.

MIL-W-16878/D TYPE B STRANDED, +105° C, 600 VOLTS

Alpha No.	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Net per Spool 1000′	Net per Spool 100′
7053	26	7/34	.038″	1-19	$22.95	$3.27
7054	24	7/32	.043″	1-19	23.55	3.88
7054/19	24	19/36	.043″	1-19	27.90	4.32
7055	22	7/30	.050″	1-19	25.62	4.08
7055/19	22	19/34	.050″	1-19	31.88	4.30
7056	20	7/28	.058″	1-19	31.83	4.80
7056/19	20	19/32	.058″	1-19	33.90	4.68
7057	18	7/26	.068″	1-19	41.76	5.92
7057/19	18	19/30	.068″	1-19	55.16	7.12
7058/19	16	19/.0117	.077″	1-19	67.20	8.48

MIL-W-16878/D TYPE C STRANDED, +105° C, 1000 VOLTS

7030	24	7/32	.058″	1-19	$ 26.85	$ 3.80
7031	22	7/30	.064″	1-19	32.55	4.48
7032	20	7/28	.072″	1-19	38.10	5.18
7033	18	7/26	.082″	1-19	44.70	6.32
7034	16	19/29	.091″	1-19	64.77	8.20
7035	14	19/27	.105″	1-19	99.12	12.03
7036	12	19/25	.124″	1-19	131.30	15.60

*‡See following page for colors.

SPECIFICATION MIL-W-16878D HOOK-UP WIRE (CONT'D)

TYPE B UNCOVERED PLASTIC (FIG. A)

Single conductor stranded tinned copper, .010″ polyvinylchloride insulation. Rated 600 volts. Temp., −55° C to +105° C.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
B-32	32	7/40	.028″	1-19	1850	$19.65	$ 3.12
B-30	30	7/38	.032″	1-19	1851	15.60	2.48
B-28	28	7/36	.034″	1-19	1852	14.25	2.43
B-26	26	7/34	.038″	1-19	1853	15.45	2.42
B-24	24	7/32	.043″	1-19	1854	14.40	2.42
B-24	24	19/36	.043″	1-19	1854/19	17.55	3.12
B-22	22	7/30	.050″	1-19	1855	15.75	2.72
B-22	22	19/34	.050″	1-19	1855/19	23.63	4.17
B-20	20	7/28	.058″	1-19	1856	19.05	3.33
B-20	20	19/32	.058″	1-19	1856/19	31.91	4.95
B-18	18	7/26	.068″	1-19	1857	24.30	3.57
B-18	18	19/30	.068″	1-19	1857/19	46.11	4.68
B-16	16	19/29	.077″	1-19	1858/19	32.25	4.53
B-14	14	19/27	.091″	1-19	1859/19	82.97	12.45

TYPE B NYLON JACKET (FIG. C)

Same as above, but clear nylon jacket overall; 115° C.

B-26	26	7/34	.044″	1-19	1863	$21.45	$ 3.40
B-24	24	7/32	.049″	1-19	1864	20.55	3.32
B-24	24	19/36	.049″	1-19	1864/19	23.85	3.57
B-22	22	7/30	.056″	1-19	1865	23.25	3.62
B-22	22	19/34	.056″	1-19	1865/19	27.45	4.03
B-20	20	7/28	.064″	1-19	1866	26.10	3.80
B-20	20	19/32	.064″	1-19	1866/19	29.55	4.32
B-18	18	7/26	.074″	1-19	1867	32.55	4.80
B-18	18	19/30	.074″	1-19	1867/19	37.65	5.30
B-16	16	19/29	.085″	1-19	1868/19	41.55	5.03
B-14	14	19/27	.099″	1-19	1869/19	94.74	11.68

TYPE B, PRE-BONDED, UNCOVERED PLASTIC (FIG. A)

Each strand is double tinned and then heated to bond the strands together for easy stripping. Insulation per MIL-W-16878D, .010″ polyvinylchloride. Rated 600 volts. Temp., −55° C to +105° C.

B-24	24	7/32	.044″	1-19	3154	$21.50	$ 3.23
B-22	22	7/30	.051″	1-19	3155	25.47	3.67
B-20	20	7/28	.059″	1-19	3156	33.65	4.58
B-18	18	7/26	.070″	1-19	3157	47.79	6.15

TYPE C UNCOVERED PLASTIC (FIG. A)

Single conductor stranded tinned copper; .016″ polyvinylchloride insulation. Rated 1000 volts. Temp., −55° C to +105° C.

C-24	24	7/32	.058″	1-19	1830	$ 21.93	$ 3.40
C-22	22	7/30	.064″	1-19	1831	24.68	3.75
C-20	20	7/28	.072″	1-19	1832	30.15	4.35
C-18	18	7/26	.082″	1-19	1833	43.64	6.22
C-16	16	19/29	.091″	1, 11-19	1834	57.77	7.68
C-14	14	19/27	.105″	1, 11-19	1835	89.06	12.32
C-12	12	19/25	.124″	1, 11-19	1836	139.86	18.22

TYPE C NYLON JACKET (FIG. C)

Same as above, but clear nylon jacket overall; 115° C.

C-24	24	7/32	.065″	1-19	1840	$ 25.19	$ 4.05
C-22	22	7/30	.072″	1-19	1841	29.25	4.48
C-20	20	7/28	.079″	1-19	1842	35.66	4.93
C-18	18	7/26	.090″	1-19	1843	50.09	6.73
C-16	16	19/29	.099″	1, 11-19	1844	65.81	7.98
C-14	14	19/27	.114″	1, 11-19	1845	98.16	12.08
C-12	12	19/25	.135″	1, 11-19	1846	141.75	17.55

TYPE C SHIELDED NYLON JACKET (FIG. D)

Shielded version of above. Single stranded tinned copper conductor. White .016″ polyvinylchloride insulation. Braided, tinned copper shield, 90% coverage. Clear nylon jacket. Rated −55° C to +115° C. Voltage rating, 1000 volts.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
C-24	24	7/32	.091″	1	1470	$101.27	$13.78
C-22	22	7/30	.098″	1	1471	107.88	14.50
C-20	20	7/28	.105″	1	1472	117.59	15.68
C-18	18	19/30	.115″	1	1473	139.32	17.98
C-16	16	19/29	.125″	1	1474	167.07	20.97
C-14	14	19/27	.142″	1	1475	227.63	27.82
C-12	12	19/25	.156″	1	1476	256.02	31.27

TYPE D NYLON JACKET (FIG. C)

Stranded tinned copper, color coded polyvinylchloride insulation. Sizes 24-6, clear nylon (polyamide) jacket overall. Temp. rating, −55° C to +115° C. Voltage rating, 3000 volts. Also available to order cut, stripped, marked and tinned.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
D-24	24	7/32	.090″	1-3	1880	$ 40.59	$ 6.10
D-22	22	7/30	.096″	1-3	1881	47.58	6.82
D-20	20	7/28	.104″	1-3	1882	55.97	7.78
D-18	18	7/26	.114″	1-3	1883	72.75	9.63
D-16	16	19/29	.125″	1-3	1884	91.56	11.75
D-14	14	19/27	.139″	1-3	1885	124.58	15.33
D-12	12	19/25	.168″	1-3	1886	183.57	21.98
D-10	10	37/26	.197″	1	1887	273.68	31.98
D-8	8	133/29	.265″	1	1888	520.76	59.42
D-6	6	133/27	.310″	1	1889	727.56	82.40

TYPE D UNCOVERED PLASTIC (FIG. A)

Same as Type D except without nylon jacket; 105° C max.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
D-24	24	7/32	.082″	1-3	1870	$ 23.12	$ 3.63
D-22	22	7/30	.088″	1-3	1871	32.40	4.60
D-20	20	7/28	.096″	1-3	1872	39.24	5.47
D-18	18	7/26	.106″	1-3	1873	48.54	6.12
D-16	16	19/29	.115″	1-3	1874	71.88	8.63
D-14	14	19/27	.129″	1-3	1875	95.18	10.78
D-12	12	19/25	.158″	1-3	1876	147.77	16.47
D-10	10	37/26	.185″	1	1877	223.14	24.98
D-8	8	133/29	.247″	1	1878	434.09	49.68
D-6	6	133/27	.290″	1	1879	626.84	71.25

TYPE EE TEFLON® WIRE (FIG. A)

Same as Type E, but .014″ thick extruded TFE Teflon insulation. Rated 1000 volts. Temperature, −65° C to +200° C.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Spool of 100′▲
EE-24	24	19/36	.055″	1-19	2874	$ 18.03
EE-22	22	19/34	.062″	1-19	2875	21.05
EE-20	20	19/32	.070″	1-19	2876	27.25
EE-18	18	19/30	.080″	1-19	2877	31.70
EE-16	16	19/29	.089″	1, 11-19	2878	42.33
EE-14	14	19/27	.106″	1, 11-19	2879§	58.30
EE-12	12	19/25	.124″	1, 11-19	2879/12§	86.17
EE-10	10	37/26	.145″	1, 11-19	2879/10§	129.98
EE-8	8	133/29	.210″	1	2879/8#	264.53

§Insul., .017″ thick. #Insul., .020″ thick. ▲Spool of 1000′ also avail.; prices on request.

TYPE ET EXTRUDED TEFLON® WIRE (FIG. A)

Single conductor stranded, silver-plated copper; extruded TFE Teflon insulation, .006″ thick. Rated 250 volts. Temperature, −65° C to +200° C.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool 1000′	Net per Spool 100′
ET-32	32	7/40	.021″	1-10	2840/7	$40.80	$7.33
ET-30	30	7/38	.024″	1-10	2841/7	39.98	7.33
ET-28	28	7/36	.027″	1-10	2842/7	39.75	7.33
ET-28	28	19/40	.027″	1-10	2842/19	75.90	9.60
ET-26	26	7/34	.031″	1-10	2843/7	43.73	8.42
ET-26	26	19/38	.032″	1-10	2843/19	65.24	8.42
ET-24	24	7/32	.036″	1-10	2844/7	48.68	8.67
ET-24	24	19/36	.037″	1-10	2844/19	55.80	9.75
ET-22	22	7/30	.042″	1-10	2845/7	55.13	9.56
ET-22	22	19/34	.044″	1-10	2845/19	58.43	10.17
.....	30†	Solid	.022″	1-10	2841/1	38.94	5.53
.....	28†	Solid	.025″	1-10	2842/1	37.88	5.38
.....	26†	Solid	.028″	1-10	2843/1	39.99	5.53
.....	24†	Solid	.032″	1-10	2844/1	43.91	5.97

†Solid silver plated copper conductor.

TYPE E TEFLON® STRANDED-CONDUCTOR WIRE (FIG. A)

Stranded silver plated copper conductor; extruded TFE Teflon insulation. Rated 600 V. Temp. −65° C to +200° C.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors‡	Alpha No.	Spool of 100′▲
E-30	30	7/38	.028″	1-19	5851	$ 7.43
E-28	28	7/36	.031″	1-19	5852	7.80
E-26	26	7/34	.035″	1-19	5853	8.62
E-24	24	19/36	.040″	1-19	5854	10.67
E-24	24	7/32	.039″	1-19	5854/7	9.08
E-22	22	19/34	.046″	1-19	5855	11.58
E-22	22	7/30	.045″	1-19	5855/7	10.50
E-20	20	19/32	.054″	1-19	5856	13.42
E-20	20	7/28	.053″	1-19	5856/7	12.50
E-18	18	19/30	.064″	1-19	5857	18.08
E-16	16	19/29	.073″	1-19	5858	22.00
E-14	14	19/27	.094″	1-6, 11-19	5859§	33.33
E-12	12	19/25	.113″	1, 11-19	5859/12§	44.37
E-10	10	37/26	.134″	1, 11-19	5859/10§	71.58

§Insul. .012″ thk. ▲Spool of 1000′ also avail.; prices on request.

TYPE E TEFLON® SOLID-CONDUCTOR WIRE (FIG. A)

Single solid silver-plated copper conductor; extruded TFE Teflon insulation. Rated 600 V. Temp., −65° C to +200° C.

E-26	26	Solid	.036″	1-10	5853/1	$40.11	$5.90
E-24	24	Solid	.040″	1-10	5854/1	44.28	5.93
E-22	22	Solid	.045″	1-10	5855/1	60.00	8.23
E-20	20	Solid	.052″	1-10	5856/1	72.63	9.58
E-18	18	Solid	.060″	1-10	5857/1	94.74	11.97

* ‡ STOCK COLORS

*Specify color. ‡Prices shown are for solid colors only. Following striping charges apply for either one, two or three spiral tracers per item in any standard put-up. Plastic and nylon jacketed wire, $1.50 per 1000′; Teflon® wire, $11.25 per 1000′. Other tracer colors available at extra cost. Write for information.

No.	Color	No.	Color	No.	Color
1	White	10	Violet	19	White/Violet
2	Black	11	White/Black	20	White/Black/Red
3	Red	12	White/Red	21	White/Black/Green
4	Green	13	White/Green	22	White/Black/Yellow
5	Yellow	14	White/Yellow	23	White/Black/Blue
6	Lt. Blue	15	White/Blue	24	White/Black/Brown
7	Brown	16	White/Brown	25	White/Black/Orange
8	Orange	17	White/Orange	26	White/Black/Gray
9	Gray	18	White/Gray	27	White/Black/Violet

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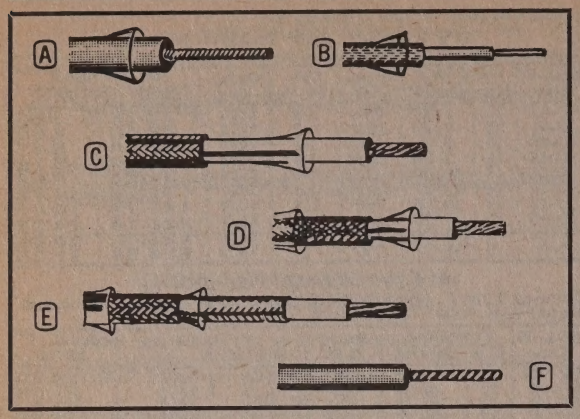


MIL-W-5086A AND MIL-C-7078A AIRCRAFT HOOK-UP WIRE

Single conductor. Rated 600 volts. Temp., −55° C to +105° C. Resists water, oil, fuels, alcohol, acids, alkalis, fungus and abrasion.

UNSHIELDED MIL-W-5086A (FIG. B)

Type 1: Single, stranded tinned copper conductor; white PVC insulation; clear nylon jacket overall. **Type 2:** Single, stranded tinned copper conductor; white PVC insulation; white glass braid; and, clear nylon jacket (AN-22—AN-12) or flame retardant nylon lacquered nylon braid (AN-10—AN-0000) overall.

MIL Type	Spec. Type	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.068″	1381*	$ 44.18	$ 5.78
AN-20	1	20	19/32	.078″	1382*	51.47	6.45
AN-18	1	18	19/30	.088″	1383*	63.59	7.74
AN-16	1	16	19/29	.098″	1384*	75.93	9.18
AN-14	1	14	19/27	.117″	1385*	103.86	11.94
AN-12	1	12	19/25	.137″	1386*	152.00	16.71
AN-22	2	22	19/34	.075″	1341	64.08	7.11
AN-20	2	20	19/32	.085″	1342	75.50	8.21
AN-18	2	18	19/30	.095″	1343	91.31	9.92
AN-16	2	16	19/29	.105″	1344	104.61	12.06
AN-14	2	14	19/27	.125″	1345	145.14	16.10
AN-12	2	12	19/25	.143″	1346	199.64	21.54
AN-10	2	10	49/27	.189″	1387	316.74	33.35
AN-8	2	8	133/29	.240″	1388	515.94	54.47
AN-6	2	6	133/27	.293″	1389	813.90	84.53
AN-1	2	1	817/30	.470″	1389/1	2204.81	221.91
AN-4	2	4	133/25	.355″	1389/4	1158.90	119.01
AN-2	2	2	665/30	.425″	1389/2	1805.84	183.84
AN-0	2	0	1045/30	.525″	1389/0	2815.00	291.02
AN-00	2	00	1330/30	.590″	1389/00	3150.63	323.52
AN-000	2	000	1661/30	.645″	1389/000	4468.62	448.32
AN-0000	2	0000	2104/30	.715″	1389/0000	5505.36	552.02

*Fig. A.

UNJACKETED SHIELDED CABLE (MIL-C-7078A TYPE 1) BASE WIRE MIL-W-5086A TYPE 1 (FIG. C)

Each conductor stranded tinned copper, color coded polyvinylchloride insulation. Clear nylon jacket on each conductor, cabled, braided tinned copper shield overall. 85% coverage per Type 1 MIL-5086A, Type 1 MIL-C-7078A. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

MIL-W Type	No. of Cond.†	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.090″	1391	$131.87	$14.49
AN-22	2	22	19/34	.160″	1391/2	239.84	26.39
AN-20	1	20	19/32	.100″	1392	143.04	15.72
AN-20	2	20	19/32	.180″	1392/2	269.97	29.70
AN-18	1	18	19/30	.110″	1393	166.77	18.38
AN-18	2	18	19/30	.200″	1393/2	311.90	34.32
AN-16	1	16	19/29	.120″	1394	195.87	21.56

NYLON JACKETED SHIELDED CABLE (MIL-C-7078A TYPE 2) BASE WIRE MIL-W-5086A TYPE 1 (FIG. D)

Each conductor stranded tinned copper, color coded PVC insulation clear nylon jacket on each conductor, cabled, braided tinned copper shield. 85% coverage. Clear nylon jacket overall. Per Type 1 MIL-W-5086A; per Type 2 MIL-C-7078A.

AN-22	1	22	19/34	.100″	6460	$150.87	$16.35
AN-22	2	22	19/34	.170″	6461	251.91	26.34
AN-22	3	22	19/34	.180″	6462	323.00	34.92
AN-20	1	20	19/32	.110″	6463	159.21	17.16
AN-20	2	20	19/32	.190″	6464	281.46	29.45
AN-20	3	20	19/32	.200″	6465	352.40	37.85
AN-18	1	18	19/30	.120″	6466	190.53	20.34
AN-18	2	18	19/30	.210″	6467	323.46	35.13
AN-18	3	18	19/30	.220″	6468	431.57	45.87
AN-16	1	16	19/29	.130″	6469	198.20	21.12
AN-14	1	14	19/27	.150″	6470	252.56	26.58
AN-12	1	12	19/25	.170″	6471	317.36	34.26

†**Color Code of Conductors:** 1 = White; 2 = 1 White/Blue, 1 White/Red; 3 = 1 White/Blue, 1 White/Red, 1 White/Yellow.

NYLON JACKETED SHIELDED CABLE (MIL-C-7078A TYPE 2) BASE WIRE MIL-W-5086A TYPE 2 (FIG. E)

Each conductor stranded tinned copper. White PVC insulation. Color coded glass braid on each conductor. Clear nylon jacket on each conductor. Conductors cabled, braided, tinned copper, shield overall. 85% coverage. Clear nylon jacket overall per Type 2, MIL-W-5086A, Type 2, MIL-C-7078A. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

MIL-W Type	No. of Cond.†	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.105″	6477	$159.86	$17.28
AN-22	2	22	19/34	.180″	6478	282.59	30.86
AN-22	3	22	19/34	.190″	6479	359.96	38.61
AN-20	1	20	19/32	.115″	6480	173.27	18.66
AN-20	2	20	19/32	.200″	6481	319.67	34.53
AN-20	3	20	19/32	.210″	6482	432.20	45.80
AN-18	1	18	19/30	.125″	6483	204.86	21.75
AN-18	2	18	19/30	.220″	6484	362.63	38.87
AN-18	3	18	19/30	.234″	6485	479.51	50.51
AN-16	1	16	19/29	.135″	6486	225.71	23.79
AN-14	1	14	19/27	.160″	6487	277.49	30.32
AN-12	1	12	19/25	.175″	6488	356.76	38.27

†**Color Code of Conductors:** 1 = White; 2 = 1 White/Blue, 1 White/Red; 3 = 1 White/Blue, 1 White/Red, 1 White/Yellow.

QUICK CUSTOM CONSTRUCTION UL HOOK-UP WIRE

The special, custom or prototype, UL Listed wire you need—in ready to use form—from one foot to production requirements, produced and delivered to you fast. Stranded tinned copper, color coded polyvinylchloride insulation. Resistant to acids, alkalis, oil, flame, moisture and fungus.

300 VOLTS, 80° C, UL STYLE 1007 (FIG. F)

Temperature rating, −10° C to +80° C. Voltage rating, 300 volts. Nom. wall thickness, .016″. CSA Style TR-64, ¼₄″ nom. wall thickness.

Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24	7/32	.057″	1–19	3050	$16.29	$2.72
22	7/30	.065″	1–19	3051	20.15	3.33
20	10/30	.071″	1–19	3053	26.60	4.00
18	16/30	.080″	1–19	3055	39.20	5.57
16	26/30	.095″	1–19	3057	59.94	7.82

600 VOLTS, 105° C, UL STYLE 1015 (FIG. F)

Temperature rating, −10° C to +105° C. Voltage rating, 600 volts. Nom. wall thickness, .016″. CSA Style TEW-105, ½₂″ nom. wall thickness.

22	7/30	.095″	1–10	3071	$20.25	$3.13
20	10/30	.102″	1–10	3073	25.65	3.87
18	16/30	.112″	1–10	3075	30.75	4.78
16	26/30	.125″	1–10	3077	45.00	5.88
14	41/30	.142″	1–10	3079	55.26	8.28

SEMI-RIGID PVC, 300 VOLTS, 80° C, UL STYLE 1061 (FIG. F)

Stranded tinned copper, color coded semi-rigid polyvinylchloride insulation. Temperature rating, −10° C to +80° C. Voltage rating, 300 volts in business machine or electronic computers only. Nom. wall thickness, .009″. Applications include internal wiring of computers, electric bookkeeping, accounting machines, and other office and control equipment.

24	7/32	.042″	1–10	3250	$14.49	$1.83
22	7/30	.048″	1–10	3251	18.27	2.30
20	7/28	.056″	1–10	3252	26.55	3.25

NYLON JACKET, 300 VOLTS, 80° C, UL STYLE 1008 (FIG. A)

Stranded tinned copper, color coded, polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Nom. wall thickness, .016″. Voltage rating, 300 V. Temp. rating, +10° C to +80° C.

Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net/Spool 1000′	Net/Spool 100′
C-24	24	7/32	.065″	1–19	3840	$26.45	$4.25
C-22	22	7/30	.072″	1–19	3841	30.72	4.72
C-20	20	7/28	.079″	1–19	3842	37.53	5.20
C-18	18	7/26	.090″	1–19	3843	52.73	7.10
C-16	16	19/29	.099″	1, 11–19	3844	69.27	8.42

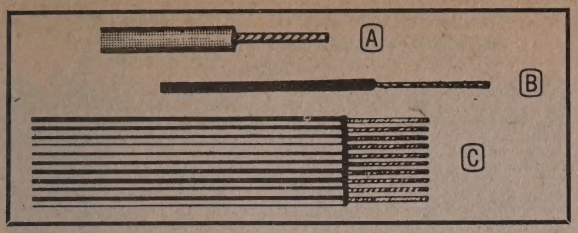
NYLON JACKET, 80° C, UL STYLE 1004 (FIG. A)

Stranded tinned copper, color coded **light wall** polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Nominal jacket thickness, .002″. Nom. wall thickness, .010″. Temp. rating, −40° C to +80° C.

LW-C26(7)J	26	7/34	.042″	1–19	3677	$18.59	$2.85
LW-C24(7)J	24	7/32	.047″	1–19	3678	18.99	3.05
LW-C22(7)J	22	7/30	.053″	1–19	3679	23.85	3.63
LW-C20(7)J	20	7/28	.065″	1–19	3680	32.88	4.87

*STOCK COLORS

1–White	6–Light Blue	11–White/Black	16–White/Brown
2–Black	7–Brown	12–White/Red	17–White/Orange
3–Red	8–Orange	13–White/Green	18–White/Gray
4–Green	9–Gray (Slate)	14–White/Yellow	19–White/Violet
5–Yellow	10–Violet (Purple)	15–White/Blue	



UNCOVERED PVC, 600 VOLTS, 80° C UL STYLE 1011 (FIG. A)

Stranded tinned copper, color coded **heavy wall** polyvinylchloride insulation. Temp. rating, −40° C to +80° C. Voltage rating, 600 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus. Nom. wall thickness, **Nos. 2571–2577,** .032″; balance, .045″.

Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
HW-C22(7)U	22	7/30	.092″	1–6	2571	$ 26.30	$ 3.80
HW-C20(10)U	20	10/30	.100″	1–6	2573	33.29	4.80
HW-C18(16)U	18	16/30	.112″	1–6	2575	37.14	5.78
HW-C16(26)U	16	26/30	.126″	1–3	2577	45.21	6.53
HW-C14(41)U	14	41/30	.170″	1–3	2579	78.75	11.03
HW-C12(65)U	12	65/30	.186″	1–3	2551	122.22	15.23
HW-C10(105)U	10	105/30	.210″	1–3	2553	182.85	22.48
HW-C8(133)U	8	133/29	.260″	1–3	2555	427.44	50.13

TEFLON®, 200° C, UL STYLE 1212, 1213 (FIG. B)

Single conductor stranded silver plated copper, extruded TFE Teflon insulation. Temp. rating, −65° C to +200° C. Nom. wall thickness, .010″. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
32	7/40	.029″	1–19	6850	$74.84	$14.85
30	7/38	.032″	1–19	6851	39.36	7.42
28	7/36	.036″	1–19	6852	40.02	7.78
26	7/34	.040″	1–19	6853	45.78	8.58
26	19/38	.041″	1–19	6853/19	72.77	10.50
24	19/36	.045″	1–19	6854	62.55	10.63
24	7/32	.044″	1–19	6854/7	50.79	9.07
22	19/34	.051″	1–19	6855	68.75	11.55
22	7/30	.050″	1–19	6855/7	60.23	10.48
20	19/32	.059″	1–19	6856	82.97	13.38
20	7/28	.058″	1–19	6856/7	79.01	12.48

TEFLON, 200° C, UL STYLE 1164, 1180 (FIG. A)

Single conductor stranded silver plated copper, extruded TFE Teflon insulation. Temp. rating, −65° C to +200° C. Nom. wall thickness, .014″. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

24	19/36	.055″	1–19	6874	$ 81.48	$13.55
22	19/34	.062″	1–19	6875	94.79	15.13
20	19/32	.070″	1–19	6876	112.08	17.80
18	19/30	.080″	1–19	6877	176.57	33.53
16	19/29	.089″	1, 11–19	6878	181.20	26.35

RX-7000 IRRADIATED-HEAT RESISTANT HOOK-UP WIRE MIL-W-16878D UL STYLES 1430, 1429, 1472 (FIG. A)

Newly developed hook-up wire with insulation made of irradiated polyvinylchloride compound (PVC) provides insulation far superior to ordinary PVC. Withstands higher temperature, and even in direct contact with a soldering iron will not shrink back, melt, blow or deform. Ideal where high reliability is essential, particularly in the wiring of tight, high density systems, appliances, computer wiring, business machines, instrumentation and control systems. Rated 300 volts.

UL STYLE 1430, 105° C, 300 VOLTS

Nom. wall thickness, .016″.

Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24	7/32	.056″	1–19	7130	$28.20	$3.98
22	7/30	.062″	1–19	7131	34.19	4.70
20	7/28	.070″	1–19	7132	40.01	5.45
18	7/26	.080″	1–19	7133	46.94	6.63
16	19/.0117	.091″	1–19	7134	68.01	8.62

UL STYLE 1429, SOLID AND STRANDED, 80° C

Nom. wall thickness, .010″.

26	7/34	.038″	1–19	7149	$24.11	$3.43
24	7/32	.043″	1–19	7150	24.74	4.08
22	7/30	.050″	1–19	7151	26.90	4.28
20	7/28	.068″	1–19	7153	33.42	5.03
18	7/26	.068″	1–19	7155	43.86	6.22
16	19/.0117	.077″	1–19	7157	70.56	8.90
22	Solid	.045″	1–19	7161	24.03	3.88
24	Solid	.040″	1–19	7161/24	21.12	3.53
20	Solid	.054″	1–19	7163	36.99	5.12

UL STYLE 1472, STRANDED, 80° C, 300 VOLTS

Nom. wall thickness, .0075″.

30	7/38	.028″	1–19	7070	$60.18	$7.70
28	7/36	.032″	1–19	7071	49.41	6.50
26	7/34	.034″	1–19	7072	44.18	5.92
24	7/32	.040″	1–19	7073	42.21	5.70
22	7/30	.045″	1–19	7074	45.80	6.10
20	7/28	.054″	1–19	7075	52.04	6.78

KYNAR® WIRE, 125° C, 300 VOLTS FOR WIRE WRAP CONNECTIONS (FIG. A)

Solid, silver-plated, oxygen-free high conductivity (OFHC) copper conductor, extruded Kynar (Polyvinylidene fluoride) insulation. Extremely tough, high cut-through resistance. Self-extinguishing, will not support combustion. Excellent ultra-violet and weathering resistance. Used in automatic wire wrapping equipment in computer and related industries. Temp. rating, through 125° C continuous (UL rated at 105° C). Voltage rating, 300 V. Nominal wall thickness, .005″. Cut lengths available, write or phone for information.

Conductor Size	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
30	.020″	1–10	5951	$28.17	.....
28	.023″	1–10	5952	32.60	.....
26	.026″	1, 3–6, 9	5953	33.35	.....
24	.030″	1, 3–6	5954	41.22	.....

TEFZEL® COMPUTER WIRE, 150° C, 300 VOLTS (FIG. B)

Rugged, flexible wire-wrap wire. Solid silver-plated OFHC copper conductor. Tefzel insulation (copolymer of ethylene and tetra fluourethylene. Low dielectric constant of 2.6. Rated non-burning or self-extinguishing. Temp. rating, −100° C to +150° C continuous. Voltage rating, 300 volts. Nom. wall thickness, .005″. Cut lengths available, write or phone for information.

30	.019″	1–10	1805	$68.79	$8.85
28	.023″	1–10	1806	74.13	9.43
26	.026″	1–10	1807	79.74	10.03
24	.029″	1–10	1808	89.87	11.15

RIBBON CABLE MIL-W-16878D, TYPES B & C UL, FR-I, ROUND CONDUCTOR, FLAT BONDED (FIG. C)

Round conductor, flat bonded ribbon cable saves space, simplifies cable identification. Each conductor stranded tinned copper, color coded PVC insulation. Color Code: 1, brown; 2, red; 3, orange; 4, yellow; 5, green; 6, blue; 7, violet; 8, gray; 9, white; 10, black. Colors repeated in sequence on cables over 10 conductors.

TYPE B

Nom. wall thickness, .010″. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts.

Conductor Size	Conductor Strand	No. of Cond.	Nom. O.D., In. Width	Nom. O.D., In. Thickness	Alpha No.	Net per 100 Ft. 1-499′	Net per 100 Ft. 500-1000′
22	19/34	10	.510	.051	3530	$ 64.56	$ 50.33
22	19/34	15	.765	.051	3531	96.83	75.50
22	19/34	20	1.05	.051	3532	116.19	90.59
22	19/34	30	1.57	.051	3533	174.27	135.90
24	19/36	10	.440	.044	3540	54.15	42.13
24	19/36	15	.662	.044	3541	81.23	63.20
24	19/36	20	.883	.044	3542	108.30	84.25
24	19/36	30	1.35	.044	3543	146.22	113.73
26	7/34	10	.392	.039	3550	41.87	32.58
26	7/34	15	.587	.039	3551	62.77	48.87
26	7/34	20	.783	.039	3552	83.67	65.08
26	7/34	30	1.19	.039	3553	112.98	87.89
28	7/36	10	.351	.035	3560	48.13	37.50
28	7/36	15	.523	.035	3561	72.22	56.22
28	7/36	20	.701	.035	3562	96.28	74.95
28	7/36	30	1.06	.035	3563	129.96	101.19
30	7/38	10	.311	.032	3570	56.62	44.03
30	7/38	15	.482	.032	3571	84.93	66.07
30	7/38	20	1.05	.032	3572	101.91	79.26
30	7/38	30	.965	.032	3573	150.44	118.91

TYPE C

Nom. wall thickness, .016″. Temp. rating, −55° C to +105° C. Voltage rating, 1000 volts.

Conductor Size	Conductor Strand	No. of Cond.	Nom. O.D., In. Width	Nom. O.D., In. Thickness	Alpha No.	Net per Spool 1000′	Net per Spool 100′
22	7/30	5	.065	.320	3505	$311.79	$ 37.00
22	7/30	10	.065	.640	3510	623.58	71.90
22	7/30	15	.065	.960	3515	937.71	109.40
22	7/30	20	.065	1.92	3520	1265.57	128.63

*COLOR CODE OF CONDUCTORS

No.	Color	No.	Color	No.	Color	No.	Color
1	White	6	Lt. Blue	11	Wht/Blk	16	Wht/Brn
2	Black	7	Brown	12	Wht/Red	17	Wht/Orng
3	Red	8	Orange	13	Wht/Grn	18	Wht/Gray
4	Green	9	Gray	14	Wht/Yel	19	Wht/ Violet
5	Yellow	10	Violet	15	Wht/Blue		

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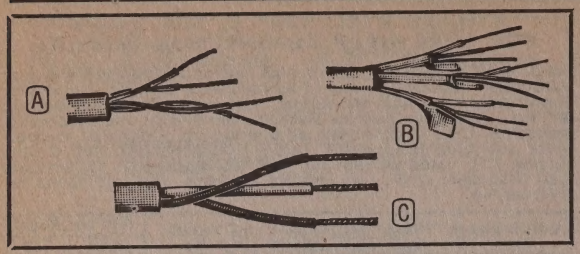


All cables on this page also available in black, brown, metallic blue or bronze jackets. White, tan, orange, red, yellow, blue and green jackets available on some types. Phone or write for Color/Blend data and pricing.

UNSHIELDED INTERCOM CABLE PAIRED CONDUCTORS, PLASTIC JACKET

For balanced intercom systems, annunciators, telephones. Suitable for outdoor installation. Each conductor 22 AWG tinned copper; color-coded PVC insulation; conductors twisted into pairs; gray polyvinylchloride jacket overall. Temp., −20° C to +80° C. Conductors' Color Code available on request.

SOLID CONDUCTORS, 22 GAUGE, 200 VOLTS (FIG. A)

Conductor		Nominal			Alpha	Net per Spool*	
Pairs	Strand	Wall	Jacket	O.D.	No.	1000′	100′
1	Solid	.010″	.025″	.140″	1300	$ 30.15	$ 4.68
2	Solid	.010″	.025″	.208″	1302	56.55	7.85
3	Solid	.010″	.025″	.220″	1304	78.90	10.42
4	Solid	.010″	.025″	.238″	1305	104.70	13.83
6	Solid	.010″	.025″	.275″	1307	139.20	17.08
9	Solid	.010″	.025″	.320″	1307/9	208.35	24.92
11	Solid	.010″	.025″	.340″	1308/11	268.50	31.58
13	Solid	.010″	.030″	.370″	1309	303.15	35.42
15	Solid	.010″	.030″	.393″	1309/15	359.25	42.83
16	Solid	.010″	.025″	.411″	1310	443.96	51.53
19	Solid	.010″	.030″	.436″	1311	449.10	51.40
23	Solid	.010″	.030″	.477″	1312	544.20	62.70
27	Solid	.010″	.040″	.521″	1313	620.10	68.90

STRANDED CONDUCTORS, 22 GAUGE, 200 VOLTS (FIG. C)

1	7/30	.010″	.025″	.150″	1316	$ 50.12	$ 7.28
2	7/30	.010″	.025″	.225″	1317	66.60	9.08
3	7/30	.010″	.025″	.238″	1318	98.85	13.05
4	7/30	.010″	.025″	.260″	1319	126.45	16.28
5	7/30	.010″	.025″	.290″	1320	164.40	20.05
6	7/30	.010″	.035″	.320″	1322	169.95	20.58
9	7/30	.010″	.035″	.370″	1323	260.55	30.75
11	7/30	.010″	.035″	.400″	1324	386.99	43.77
15	7/30	.010″	.040″	.450″	1327	438.15	51.50
19	7/30	.010″	.040″	.480″	1327/19	551.70	62.78
23	7/30	.010″	.040″	.530″	1328	708.60	80.23
27	7/30	.010″	.040″	.708″	1329	827.55	96.28
41	7/30	.010″	.040″	.710″	1329/41	1692.30	170.41
51	7/30	.010″	.045″	.800″	1330	2339.40	235.78

STRANDED CONDUCTORS, 18 GAUGE, 400 VOLTS (FIG. A)

3	16/30	.016″	.037″	.356″	1133	$189.60	$ 23.50
6	16/30	.016″	.045″	.540″	1136	397.05	48.33
9	16/30	.016″	.055″	.616″	1139	579.00	68.00
12	16/30	.016″	.055″	.654″	1142	768.00	89.08
15	16/30	.016″	.060″	.760″	1145	959.10	109.77
19	16/30	.016″	.070″	.830″	1149	1211.40	124.53
27	16/30	.016″	.070″	.965″	1151	2616.12	268.47

SHIELDED AUDIO AND DATA CABLE WITH PLASTIC JACKET (FIG. B)

Tinned-copper conductors with color-coded polyethylene insulation, twisted into pairs. Tinned-copper 22-gauge drain wire with Mylar®-supported aluminum foil shield, aluminum facing inward. Chrome gray PVC jacket overall. Capacitance: Between cond. of a pair, 25 pF/ft; single cond. to shield, 45 pF/ft. For audio, RF and pulse applications requiring superior circuit isolation. **Conductors' Color Code:** Combinations 1 thru 27 per Color Code Table Two**.

#22 GAUGE

Conductor			Nominal			Alpha	Net per Spool*	
Pairs	No.	Strand	Wall	Jacket	O.D.	No.	1000′	100′
3	6	Solid	.010″	.025″	.235″	6000	$ 154.50	$ 18.92
6	12	Solid	.010″	.030″	.318″	6002	322.50	38.58
9	18	Solid	.010″	.030″	.371″	6004	458.40	52.42
11	22	Solid	.010″	.035″	.414″	6006	544.05	63.08
15	30	Solid	.010″	.040″	.485″	6008	744.90	86.92
3	6	7/30	.010″	.025″	.252″	6010	179.55	21.33
6	12	7/30	.010″	.030″	.342″	6012	376.80	43.25
9	18	7/30	.010″	.035″	.410″	6014	552.75	70.08
11	22	7/30	.010″	.040″	.457″	6016	655.20	76.42
15	30	7/30	.010″	.040″	.523″	6018	867.75	100.17
19	38	7/30	.010″	.050″	.570″	6020	1158.00	122.33
27	54	7/30	.010″	.055″	.687″	6022	1647.00	168.23

#18 GAUGE

3	6	16/30	.016″	.035″	.372″	6023	$ 277.35	$ 32.67
6	12	16/30	.016″	.045″	.555″	6024	567.30	64.87
9	18	16/30	.016″	.055″	.620″	6025	855.75	96.98
12	24	16/30	.016″	.070″	.765″	6026	1139.10	115.74
15	30	16/30	.016″	.070″	.830″	6027	1420.20	146.57

*Also available in spool of 500′, prices on request.

UNSHIELDED AUDIO CABLE (FIG. C) MULTI-CONDUCTOR, PLASTIC JACKET

#22 GAUGE

For unbalanced intercom systems, low voltage relay control cable, PA systems, signal systems, electronic computors. Each conductor suitable for outdoor use. 22 AWG stranded tinned copper; color-coded polyvinylchloride insulation; conductors twisted; gray PVC jacket overall. Rated 200 volts. Temp., −20° C to +80° C. **Conductors' Color Code:** 1 thru 60 per Color Code Table One*. Also available in multi-conductor combination gauges. Write or phone for information and prices.

Conductor		Nominal			Alpha	Net per Spool*	
No.	Strand	Wall	Jacket	O.D.	No.	1000′	100′
2	7/30	.010″	.020″	.140″	1172	$ 35.85	$ 5.72
3	7/30	.010″	.020″	.145″	1173	44.10	6.05
4	7/30	.010″	.020″	.170″	1174	60.15	8.05
5	7/30	.010″	.020″	.175″	1175	71.85	9.42
6	7/30	.010″	.020″	.185″	1176	81.33	10.85
7	7/30	.010″	.020″	.190″	1177	90.75	12.00
8	7/30	.010″	.020″	.200″	1178	110.10	14.68
9	7/30	.010″	.020″	.225″	1179	129.39	17.25
10	7/30	.010″	.020″	.235″	1180	148.65	18.25
12	7/30	.010″	.020″	.255″	1181	169.05	20.58
15	7/30	.010″	.020″	.280″	1181/15	260.25	32.58
20	7/30	.010″	.020″	.310″	1181/20	336.45	38.85
25	7/30	.010″	.020″	.340″	1181/25	420.45	51.00
30	7/30	.010″	.020″	.365″	1181/30	482.85	53.65
40	7/30	.010″	.025″	.425″	1181/40	638.55	70.95
50	7/30	.010″	.035″	.500″	1181/50	796.95	88.55
60	7/30	.010″	.035″	.530″	1181/60	1187.75	142.53

UNSHIELDED WITH PLASTIC JACKET (FIG. A)

Tinned copper conductors with color-coded polyvinylchloride insulation, twisted, with gray polyvinylchloride jacket overall. Rated 350 volts except as otherwise noted. Temperature, −20° C to +80° C. **Conductors' Color Code:** 1–8 per Color Code Table One*. For complete listing of this cable, write or phone for information.

Conductor			Nominal		Alpha	Net per Spool*	
No.	Size	Strand	Wall	O.D.	No.	1000′	100′
2	22	Solid	.010″	.130″	1793†	$ 41.58	$ 6.38
3	22	Solid	.010″	.140″	1794†	79.29	11.23
2	20	Solid	.016″	.170″	1795	99.42	13.38
2	18	Solid	.016″	.190″	1797	111.47	15.10
2	22	7/30	.010″	.135″	1893†	45.92	7.42
3	22	7/30	.010″	.145″	1894†	44.10	7.42
4	22	7/30	.010″	.170″	1894/4†	60.15	8.05
2	20	10/30	.016″	.180″	1895	42.15	6.37
3	20	10/30	.016″	.190″	1896	60.60	7.82
4	20	10/30	.016″	.215″	1896/4	79.05	10.00
2	18	16/30	.016″	.200″	1897	62.94	8.48
3	18	16/30	.016″	.210″	1898	93.86	12.08
4	18	16/30	.016″	.240″	1898/4	117.39	14.68
6	18	16/30	.016″	.290″	1898/6	222.75	26.08
8	18	16/30	.016″	.315″	1898/8	245.75	28.48
2	16	26/30	.016″	.225″	1899	85.25	11.27
2	14	41/30	.016″	.260″	1891	135.36	16.92
3	14	41/30	.016″	.280″	1891/3	355.41	41.42

†Rated 200 volts.

*COLOR CODE TABLE ONE

No.	Color	No.	Color
1	Black	31	White/Black/Slate
2	Red	32	White/Black/Purple
3	White	33	White/Black/Black
4	Green	34	White/Red/Black
5	Orange	35	White/Red/Red
6	Blue	36	White/Red/Green
7	Brown	37	White/Red/Blue
8	Yellow	38	White/Red/Brown
9	Purple	39	White/Red/Purple
10	Slate	40	White/Green/Black
11	Pink	41	White/Green/Red
12	Tan	42	White/Green/Green
13	Red/Green	43	White/Green/Blue
14	Red/Yellow	44	White/Green/Brown
15	Red/Black	45	White/Green/Purple
16	White/Black	46	White/Blue/Black
17	White/Red	47	White/Blue/Red
18	White/Green	48	White/Blue/Green
19	White/Yellow	49	White/Blue/Blue
20	White/Blue	50	White/Blue/Brown
21	White/Brown	51	White/Blue/Purple
22	White/Orange	52	White/Brown/Black
23	White/Gray	53	White/Brown/Red
24	White/Violet	54	White/Brown/Green
25	White/Black/Red	55	White/Brown/Blue
26	White/Black/Green	56	White/Brown/Brown
27	White/Black/Yellow	57	White/Brown/Purple
28	White/Black/Blue	58	White/Purple/Red
29	White/Black/Brown	59	White/Purple/Green
30	White/Black/Orange	60	White/Purple/Blue

**COLOR CODE TABLE TWO

No.	Colors‡	No.	Colors‡	No.	Colors‡
1	Black/Red	10	Red/Blue	19	White/Blue
2	Black/White	11	Red/Yellow	20	White/Brown
3	Black/Green	12	Red/Brown	21	White/Orange
4	Black/Blue	13	Red/Orange	22	White/Yellow
5	Black/Brown	14	Green/Blue	23	Blue/Brown
6	Black/Yellow	15	Green/White	24	Blue/Orange
7	Black/Orange	16	Green/Brown	25	Blue/Yellow
8	Red/Green	17	Green/Orange	26	Brown/Orange
9	Red/White	18	Green/Yellow	27	Brown/Yellow

‡Color combination of pairs. ®Registered DuPont Corp. TM.

Other jacket colors available. Write or phone for Color/Blend data and pricing.

SHIELDED MICROPHONE CABLE

STANDARD DUTY, PLASTIC JACKET (FIG. A)

Nos. 1702-1706: Single stranded tinned copper conductor with white polyethylene insulation; braided or spiral-wrapped tinned copper shield and gray PVC jacket overall. For all high impedance mikes or for hi-fi interconnection. **Nos. 1709-1712:** Each conductor stranded tinned copper with color-coded (1 = White, 2 = Black) polyethylene insulation, cabled with fillers, textile wrap, braided or spiral-wrapped tinned copper shield and gray polyvinylchloride jacket overall. For all low impedance mikes. Temp., −20° C to +80° C. Rated 1000 volts except 1703, 3500 volts; 1704, 5000 volts; 1706, 4000 volts; 1712, 600 volts.

Conductors No.	Size	Strand	pF/ ft.*	Nom. O.D.	Alpha No.	Net per Spool* 1000′	100′
1	26	7/34†	38	.110″	1702‡	$ 85.61	$12.03
1	24	10/34	35	.145″	1703	82.07	10.40
1	24	10/34	23	.190″	1704▲	83.55	11.08
1	24	10/34	45	.110″	1705‡	98.88	13.68
1	20	26/34	36	.175″	1706▲	165.39	20.95
2	24	10/34	38	.190″	1709‡	161.66	20.52
2	22	16/34	31	.230″	1710	124.65	16.08
2	20	26/34	45	.245″	1712	243.00	28.00

RUBBER AND NEOPRENE JACKETS (FIG. B)

Each conductor stranded tinned copper with color-coded (1 = Black, 2 = White) rubber insulation, cotton wrap; braided tinned copper shield, cotton wrap and tough black rubber or neoprene jacket overall. Rubber jacket type suited for standard-duty indoor use; neoprene type for heavy-duty outdoor use and direct burial. Temp., −20° C to +60° C.

1	20	26/34	97	.190″	1248§	$246.81	$28.65
1	20	26/34	60	.230″	1249	251.61	29.68
1	18	41/34	69	.240″	1249/18	356.19	41.37
1	18	41/34	69	.240″	1449#	354.65	41.10
2	20	26/34	68	.270″	1250	210.50	24.83
2	18	41/34	78	.295″	1250/18	408.14	47.07
2	18	41/34	78	.295″	1450#	470.81	54.00
2	16	65/34	82	.335″	1450/16#	843.78	103.97

*Nom. capacitance between one conductor and remaining ones connected to shield. †Three strands tinned copper; 4 strands tinned Copperweld®. ‡Spiral-wrapped shield; all others braided. §Mylar® wrap under tinned copper shield. #Neoprene jacket; all others rubber. ▲UL Style 1150.

UNSHIELDED CONTROL & AUDIO CABLE, INNER CONDUCTORS—600 VOLTS, 80° C (FIG. C)

Each conductor, stranded tinned copper, color coded PVC insulation with Mylar wrap, chrome gray PVC jacket overall. Working voltage, 600 volts. Temp. rating, −20° C to +80° C. Inner conductors meet UL Style 1011. Used as industrial control cable for telemetry and automatic control; communications and signaling.

16 GAUGE—19/29 STRANDING, INSUL. THICKNESS, 1/32″

No. of Conductors	Jacket Thickness	Nom. O.D.	Alpha No.	Net per Spool 1000′	100′
4	.045″	.377″	1064	$ 194.25	$ 23.00
5	.045″	.406″	1065	227.55	30.33
7	.045″	.458″	1067	342.00	42.58
9	.045″	.513″	1069	422.70	51.20
12	.060″	.604″	1072	576.60	69.41
15	.060″	.654″	1075	828.15	97.17
19	.065″	.720″	1079	1006.35	107.25
25	.065″	.824″	1085	1156.20	118.52

14 GAUGE—19/27 STRANDING, INSUL. THICKNESS, 3/64″

4	.045″	.500″	1274	$ 339.90	$ 41.42
5	.060″	.563″	1275	405.45	50.08
7	.060″	.634″	1277	582.60	69.92
9	.065″	.754″	1279	698.04	79.88
12	.065″	.773″	1282	1020.75	105.75
15	.080″	.905″	1285	1182.72	122.34

COLOR CODE OF CONDUCTORS

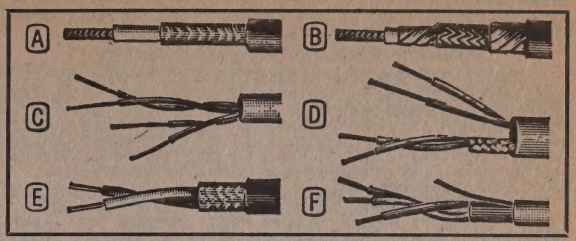
No.	Color	No.	Color	No.	Color	No.	Color
1	Black	8	Red/Blk	15	Blue/Wht	22	Blk/Wht/Red
2	White	9	Grn/Blk	16	Blk/Red	23	Wht/Blk/Red
3	Red	10	Orng/Blk	17	Wht/Red	24	Red/Blk/Wht
4	Green	11	Blue/Blk	18	Orng/Red	25	Grn/Blk/Wht
5	Orange	12	Blk/Wht	19	Blue/Red		
6	Blue	13	Red/Wht	20	Red/Grn		
7	Wht/Blk	14	Grn/Wht	21	Orng/Grn		

SHIELDED & UNSHIELDED INTERCOM CABLE (FIG. D)

Each conductor stranded, tinned copper, color-coded PVC or PP insulation, braided tinned or aluminum-Mylar foil shield over conductors. Unshielded conductors paired. Gray jacket overall. Cond. 22 AWG, 7/30 stranded (1243/3, 2465, 20 AWG, 7/28). Jacket .020″ nom. (2464, .019″; 1243/3, .029″; 2465, .030″). Inner cond. meet UL 1007 and FR-1. Rated 350 V. Temp. −20° C to +80° C.

Conductors No.	No. Shielded	Nom. O.D.	Color-Coded In Shield	Color-Coded Not Shielded	Alpha No.	Net per Spool* 1000′	100′
3	1	.200″	White	Blk., Red	1243	$76.20	$10.41
4	2*	.165″	Red, Blk.	Grn., Wht.	2464	88.50	11.13
4	2	†	Blk., Wht.	Blk., Red	1243/4	96.90	13.00
4	4#	§	Blk., Wht., Blk., Red	.....	1243/6	217.49	25.53
5	3	‡	Blk., Wht., Red	Blk., Red	1243/5	214.53	25.22
3	2*	.212″	Blk., Red	Clear	1243/3	85.50	11.12
4	2*	.233″	Blk., Red	Grn., Wht.	2465	110.85	14.32

*Polypropylene insulation, aluminum-Mylar foil shield, solid tinned copper drain for grounding; all others PVC, braided shield. †Oval, .285″ x .180″. ‡Oval, .200″ x .300″. §Oval, .180″ x .315″. #2 pairs, both shielded.



BRAIDED SHIELDED JACKETED CABLE (FIG. E)

Tinned copper, stranded or solid conductor with color-coded polyvinylchloride insulation. Conductors twisted with braided copper shield and gray polyvinylchloride jacket overall. Shield permits pigtail soldering. Strong and flexible for PA, sound, studio, amateur and similar applications. Shield coverage, 75%. Jacket .016″ thick, nom. Temp., −20° C to +80° C. **Conductors' Color Code:** 1 = Black; 2 = Red; 3 = White; 4 = Green.

Conductors No.	Size	Strand	Work'g Volts	Nom. O.D.	Alpha No.	Net per Spool* 1000′	100′
1	22	7/30	350	.125″	1735	$ 71.21	$ 9.30
2	22	7/30	350	.185″	1736	79.88	10.55
3	22	7/30	350	.200″	1737	85.50	11.25
4	22	7/30	350	.210″	1738	148.13	17.77
1	20	10/30	350	.135″	1740	89.01	11.27
2	20	10/30	350	.200″	1741	152.96	19.02
3	20	10/30	350	.220″	1742	182.42	22.23
4	20	10/30	350	.230″	1743	187.04	22.90
1	18	16/30	350	.145″	1745	116.76	14.35
2	18	16/30	350	.235″	1746	191.19	23.22
3	18	16/30	350	.245″	1747	277.92	33.02
4	18	16/30	350	.255″	1747/4	367.01	42.13
2	16	26/30	350	.250″	1748	276.53	32.75
3	16	26/30	350	.255″	1749	377.10	43.28
2	14	41/30	450	.290″	1750*	353.10	41.25
3	14	41/30	450	.295″	1751*	541.35	62.17
2	12	65/30	450	.335″	1760*	573.68	65.77
3	12	65/30	450	.340″	1761*	822.17	92.75
2	22	Solid	350	.175″	1775†	83.25	10.17
2	20	Solid	350	.210″	1779	107.15	13.27
2	18	Solid	350	.220″	1783	149.84	18.03

SPIRAL SHIELDED JACKETED CABLE (FIG. E)

Same as above, but shield is spiral wrapped copper for 95% shield coverage for audio and RF frequencies.

2	22	Solid	350	.170″	2255	$ 57.45	$ 7.60
1	22	7/30	350	.115″	2254/1	51.38	6.73
2	22	7/30	350	.175″	2254	63.30	8.13
3	22	7/30	350	.190″	2254/3	148.64	18.98
4	22	7/30	350	.200″	2254/4	251.61	30.23
6‡	22	7/30	350	.235″	2254/6	348.92	41.05
1	20	10/30	350	.130″	2256/1	57.63	7.88
2	20	10/30	350	.195″	2256	74.25	10.25
3	20	10/30	350	.210″	2256/3	170.85	21.45
6‡	20	10/30	350	.225″	2256/4	349.22	41.20
4	20	10/30	350	.265″	2256/6	453.51	52.82
1	18	16/30	350	.135″	2258/1	111.44	14.83
2	18	16/30	350	.230″	2258	98.13	12.65
3	18	16/30	350	.235″	2258/3	124.14	15.45
4	18	16/30	350	.245″	2258/4	363.93	42.90
2	16	26/30	350	.240″	2260	126.80	15.83
3	16	26/30	350	.245″	2260/3	401.16	47.07
2	14	41/30	450	.285″	2265*	393.66	46.30
3	14	41/30	450	.290″	2265/3*	416.81	51.07
2	12	65/30	450	.325″	2268*	409.55	50.17
3	12	65/30	450	.330″	2268/3*	579.77	71.03

*Jacket, .020″ thick nom. †With 22 AWG solid tinned copper ground wire under braided copper shield. ‡Color Code: 5 — yellow; 6 — blue.

FOIL SHIELDED JACKETED CABLE UL STYLE 2092, 2093, 2094* (FIG. F)

Each conductor stranded tinned copper with color-coded polyethylene insulation; cabled and wrapped Mylar supported aluminum foil shield (100% coverage) with drain wire laid parallel; aluminum foil faces outward for maximum grounding contact; chrome gray polyvinylchloride jacket overall. Lightweight; reduced cable diameter; quick, easy termination to ground. Temp., −20° C to +60° C. Jacket, .020″ thick; wall .016″ thick, nom. (2442, 2444; Jkt. .030″; wall, .020″.) **Conductors' Color Code:** 1 = Black; 2 = Red; 3 = Clear; 4 = Green. Working volts, 400.

Conductor No.	Size	Strand	Nom. O.D.	Color Code	Alpha No.	Net per Spool 1000′	100′
2	24	7/32	.160″	1, 3	2400	$ 50.85	$ 6.95
2	22	7/30	.170″	1, 3	2401	52.20	7.13
2	22	7/30	.170″	1, 2	2402	56.21	8.40
3	22	7/30	.185″	1-3	2403	65.55	8.92
4	22	7/30	.210″	1-4	2404	170.67	20.37
2	20	10/30	.186″	1, 3	2411	65.55	8.92
2	20	10/30	.186″	1, 2	2412	70.79	9.33
3	20	10/30	.205″	1-3	2413	82.80	11.27
4	20	10/30	.225″	1-4	2414	172.61	21.15
2	18	16/30	.210″	1, 3	2421	78.60	10.70
2	18	16/30	.210″	1, 2	2422	85.20	10.93
3	18	16/30	.230″	1-3	2423	105.45	14.35
4	18	16/30	.255″	1-4	2424	206.25	24.95
2	16	26/30	.245″	1, 2	2432	116.52	13.20
3	16	26/30	.270″	1-3	2433	175.58	21.43
2	14	41/30	.310″	1, 3	2442	177.53	21.47
2	12	65/30	.350″	1, 3	2444	266.87	31.50

*2 Cond.—2092; 3 Cond.—2093; 4 Cond.—2094.
•Also available in spool of 500′, prices on request.
®TM: Copperweld of Copperweld Steel Co.; Mylar of DuPont.

All cables on this page (except unshielded control cable) available with other jacket colors: data and prices on request.

MINIATURE FOIL SHIELDED CABLE TWO 22 GAUGE CONDUCTORS (FIG. A)

Each conductor tinned solid or stranded copper, color coded polypropylene insulation, aluminum/Mylar* foil shield, drain wire, gray vinyl jacket overall. Designed for space-saving in miniature and sub-miniature instrumentation and audio applications. Temp. rating, −55° C to +105° C. Voltage rating, 200 volts. Nominal wall thickness, .008". **Color Code of Conductors:** Black, red.
*Reg. DuPont trademark.

Conductor		Nom. Jacket		Alpha	Net per Spool*	
Size	Strand	Th.	O.D.	No.	1000′	100′
22	Solid	.018"	.118"	2460	$49.43	$7.60
22	7/30	.020"	.135"	2461	57.60	8.13

MINIATURE SHIELDED CABLE CLEAR PLASTIC JACKET (FIG. B)

Each conductor stranded tinned copper, color coded polyvinylchloride insulation, conductors twisted, fine braided tinned copper shield overall, clear polyvinylchloride jacket overall. Temp. rating, −20° C to +80° C. Voltage rating, 200 volts. Nominal wall thickness, .010". Nominal jacket thickness, .010".

Conductor				Nom.	Alpha	Net per Spool*	
No.	Size	Strand	Color*	O.D.	No.	1000′	100′
2	28	7/36	1–4	.105"	1120	$153.18	$18.97
3	28	7/36	1–4	.115"	1121	180.72	21.95
4	28	7/36	1–4	.120"	1122	228.27	27.23

***Color Code of Conductors:** 1, Black; 2, Red; 3, White; 4, Green.

PLASTIC SPEAKER CABLE COLORED AND CLEAR INSULATION (FIG. C)

Conductors parallel, stranded bare copper, color coded polyvinylchloride insulation, conductors separate easily when slit apart. Designed for hi-fi speaker cable, miniature juke box speaker connection and rear auto speaker extension cable. Clear insulation will blend with interior room decor. Temp. rating, −20° C to +60° C. **Stock Colors:** Alpha No. **1944,** brown, black, white, gray, tan. **1945,** clear. **1948,** gray. **1949,** gray, clear. **1977,** brown, black, white, gray, clear. **1979,** clear.

Conductors			Nominal	Alpha	Net per Spool*	
No.	Size	Strand	O.D.	No.	1000′	100′
2*	24	7/32	.057" x .120"	1944	$18.75	$ 3.13
2*	24	7/32	.057" x .120"	1945	18.75	3.13
2*	22	Solid	.057" x .120"	1948	20.52	3.85
2*	20	7/28	.073" x .146"	1949	31.20	4.83
2	18	41/34	.115" x .215"	1977	60.23	7.57
2	18	41/34	.115" x .215"	1979†	84.09	10.70

*1 conductor tinned, 1 bare. †UL Listed.

TELEPHONE STATION CABLE 22-GAUGE SOLID CONDUCTOR (FIG. D)

Solid, annealed 22-gauge bare copper conductor, color coded polyethylene insulation, conductors cabled with PVC jacket overall. Jacket designed to resist weathering and abrasion. For use in telephone and intercom installation. May be used in building duct or outside installations. Cable may be easily installed to baseboards or walls with staple gun or clamps. Beige jacket. Insulation .015" thk.

No. of Conductors	Jkt. Thickness	Nom. O.D.	Conductor Color Code	Alpha No.	Net per Spool*	
					1000′	100′
2	.020"	.155"	Red, Green	1202	$34.50	$5.65
3	.020"	.163"	Red, Green, Yellow	1203	42.90	6.38
4	.022"	.185"	Red, Green, Yellow, Black	1204	52.95	7.45

HEADSET CABLE FOR LANGUAGE LABS (FIG. E)

Conductors consist of combination tinned copper and Copperweld* strands, color coded, polyethylene insulation. Spiral wrapped, tinned copper shield. Chrome gray vinyl jacket. Flat configuration. Extra sturdy, steel reinforced conductor and polyethylene jacket resists pulling and abrasion. Designed for two channel stereo application in audio-visual education, language laboratories, etc. Conductor colors, red and clear. Insulation thickness, .017". Jacket thickness, .020". *Reg. Copperweld Steel Corp.

Conductor			Nom.	Alpha	Net per Spool*	
No.	Size	Strand	O.D.	No.	1000′	100′
2	25	7/33	.108" x .215"	1985	$123.96	$15.93

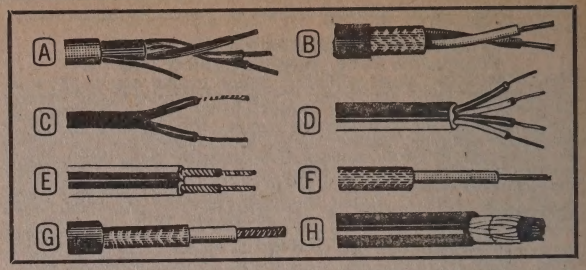
HI-FI AND STEREO INTERCONNECTING CABLE PHONO WIRE (FIG. F)

Each conductor stranded tinned copper, color coded polyvinylchloride insulation, conductors twisted. Alpha Nos. 1101–1107, conductors twisted with extra tight lay for flexibility. Overall shield designed for extreme limpness so not to impede phono arm when tracking. Temp. rating, −55° C to +105° C. WV, 200 V.

UNSHIELDED

Conductors			Nom.	Color	Alpha	Net per Spool	
No.	Size	Strand	O.D.	Code*	No.	1000′	100′
2	30	7/38	.065"	1, 2	1115	$61.62	$ 9.05
3	30	7/38	.070"	1–3	1116	89.48	12.15
STEREO (UNSHIELDED)							
3	32	7/40	.053"	1–3	1101	$116.72	$15.00
4	32	7/40	.061"	1–4	1102	163.62	20.15
STEREO (SHIELDED)							
2	32	7/40	.055"	1, 2	1105	$142.01	$17.75
4	32	7/40	.068"	1–4	1107	209.91	25.37

***Color Code:** 1, black; 2, red; 3, white; 4, green.



LOW CAPACITANCE SHIELDED MICROPHONE CABLE, UL STYLE 1354 (FIG. G)

Single conductor, stranded tinned copper, white foam polyethylene insulation, braided tinned copper shield, chrome gray polyvinylchloride jacket. Two conductors, stranded tinned copper, color coded foam polyethylene insulation, 1 white and 1 black, cabled with fillers, textile wrap, braided tinned copper shield, chrome gray polyvinylchloride jacket. Temp. rating, −20° C to +80° C. Low loss foam polyethylene provides lower capacitance and attenuation increasing effective length of usable cable without loss of signal. Nominal jacket thickness, .030". **Color Code of Conductors:** 1, white; 2, black.

Conductor			Nom. Wall	Nom.	Alpha	Net per Spool*	
No.	Size	Strand	Thickness	O.D.	No.	1000′	100′
1	24	10/34	.035"	.180"	2311	$ 78.24	$ 9.88
1	24	10/34	.055"	.225"	2312	136.01	17.58
2	22	16/34	.035"	.300"	2323	291.71	37.37

UNSHIELDED CONTROL CABLE (FIG. H)

Heavy-duty multi-conductor cable with rugged neoprene jacket. Each conductor stranded bare copper, color coded rubber insulation, cabled with fillers where necessary, wrap over conductors. Used for remote control of automatic electrical equipment and sub-stations, telemetering, voltage pressure and motor control, signal transmission. Also for outside installation. Resists oil, ozone, sunlight, moisture abrasion and impact. Voltage rating, 600 volts.

18 GAUGE #41/34 BARE COPPER, 2/64" THICK INSUL.

No. of Cond.	Jacket Thickness	Nom. O.D.	Alpha No.	Net per Foot*			
				25-99	100-499	500-999	1000 Up
5	.078"	.485"	4505	$2.85	$1.76	$1.50	$1.43
6	.078"	.510"	4506	3.33	1.98	1.76	1.65
8	.078"	.560"	4508	4.49	2.70	2.45	2.28
9	.078"	.595"	4509	5.39	3.45	3.03	2.85
10	.078"	.620"	4510	6.03	3.60	3.24	3.03
14	.094"	.710"	4514	7.49	4.49	3.96	3.74

16 GAUGE #65/34 BARE COPPER, 2/64" THICK INSUL.

5	.078"	.520"	4605	$ 3.18	$ 1.92	$ 1.71	$ 1.61
6	.078"	.540"	4606	3.69	2.19	1.97	1.82
7	.078"	.540"	4607	4.29	2.57	2.30	2.15
8	.078"	.580"	4608	5.13	3.08	2.70	2.57
10	.094"	.720"	4610	6.50	3.89	3.48	3.26
12	.094"	.745"	4612	7.76	4.73	4.17	3.89
14	.094"	.765"	4614	8.40	5.06	4.49	4.19
16	.094"	.810"	4616	9.08	5.46	4.83	4.56
19	.094"	.840"	4619	11.07	6.63	5.93	5.63
20	.094"	.890"	4620	11.67	6.96	6.24	5.84
22	.094"	.920"	4622	12.17	7.29	6.50	6.11
24	.109"	1.000"	4624	12.93	7.74	6.93	6.47
26	.109"	1.030"	4626	14.99	9.02	8.01	7.61
30	.109"	1.080"	4630	15.78	9.47	8.40	7.91
37	.109"	1.130"	4637	19.25	11.55	10.28	9.63
40	.109"	1.210"	4640	20.51	12.30	10.98	10.28
44	.109"	1.275"	4644	22.61	13.58	12.08	11.36
50	.125"	1.320"	4650	25.13	15.08	13.43	12.57
60	.125"	1.470"	4660	30.80	18.48	16.43	15.38

14 GAUGE #41/30 BARE COPPER, 3/64" THICK INSUL.

5	.095"	.675"	4705	$ 4.65	$2.78	$2.46	$2.36
6	.094"	.705"	4706	5.76	3.45	3.08	2.85
7	.094"	.710"	4707	6.24	3.74	3.33	3.09
8	.094"	.760"	4708	7.37	4.43	3.93	3.69
9	.094"	.810"	4709	8.93	5.34	4.77	4.52
10	.094"	.870"	4710	9.39	5.63	4.98	4.73
12	.094"	.900"	4712	10.19	6.14	5.45	5.13

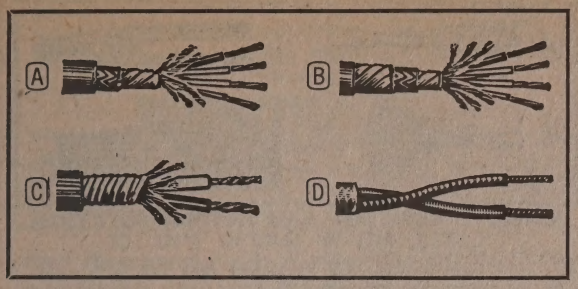
12 GAUGE #65/30 BARE COPPER, 3/64" THICK INSUL.

5	.094"	.740"	4805	$ 5.66	$3.41	$3.03	$2.84
6	.094"	.790"	4806	6.47	3.89	3.45	3.24
7	.094"	.790"	4807	7.37	4.43	3.93	3.69
8	.094"	.820"	4808	8.39	4.98	4.46	4.17
9	.109"	.900"	4809	10.19	6.14	5.45	5.18
10	.109"	1.010"	4810	10.73	6.45	5.67	5.34
12	.109"	1.040"	4812	11.67	6.96	6.17	5.82
16	.109"	1.160"	4816	14.24	8.55	7.61	7.13
18	.109"	1.220"	4818	16.26	9.72	8.69	8.09

10 GAUGE #104/30 BARE COPPER, 3/64" THICK INSUL.

5	.094"	.800"	4825	$ 7.85	$4.97	$4.46	$4.17
6	.094"	.850"	4826	9.23	5.84	5.22	4.89
8	.094"	.910"	4828	11.78	7.49	6.65	6.30
10	.109"	1.120"	4830	13.05	8.28	7.41	6.95

*Standard spool put-up cut to specific lengths. All orders non-cancellable. **Color-Code:** Neoprene jacketed control cables conforms to IPCEA standards. (See another Alpha Wire page for color code.) •Available in 500′ spools; prices on request.



MULTI-CONDUCTOR CONTROL CABLE

•Spool of 500′ also available; prices on request.

SHIELDED GENERAL PURPOSE PLASTIC JACKET (FIG. A)

Each conductor, stranded tinned copper with color-coded polyethylene insulation .014″ thick, cabled with fillers where necessary; rayon wrap; braided, tinned copper shield; chrome gray polyvinylchloride jacket overall. Rated 600 volts. Temp., −20° C to +80° C. **Conductors' Color Code:** 1 thru 20, per color code table* below.

Conductors			Nom. Jacket		Alpha	Net per Spool•	
No.	Size	Strand	Th.	O.D.	No.	1000′	100′
2	20	26/34	.030″	.245″	1712†	$ 243.00	$ 28.00
3	20	26/34	.035″	.250″	1713‡	179.10	22.50
4	20	26/34	.035″	.260″	1715§	197.10	24.17
5	20	26/34	.035″	.275″	1716	230.55	27.70
6	20	26/34	.035″	.300″	1717	511.05	59.22
8	20	26/34	.035″	.330″	1719	693.47	78.07
10	20	26/34	.035″	.375″	1721	853.05	96.87
12	20	26/34	.035″	.380″	1723	1348.29	136.62
15	20	26/34	.035″	.410″	1726	2091.20	210.66
20	20	26/34	.035″	.455″	1728	2724.12	274.55

†UL Style 2373; ‡2093; §2094.

SHIELDED, RUBBER INSULATED, RUBBER JACKET (FIG. B)

Each conductor stranded, tinned copper with color-coded rubber insulation .020″ thick, cabled with fillers where necessary; cotton wrap; braided tinned copper shield; cotton wrap; tough black rubber jacket overall. Extra flexible for control, video and audio uses. Temp., −20° C to +60° C. **Conductors' Color Code:** 1 thru 20, per color code table* below.

2	18	41/34	.035″	.295″	1250/18	$ 408.14	$ 47.07
2	20	26/34	.035″	.270″	1250	210.50	24.83
3	20	26/34	.035″	.285″	1251	230.25	27.25
4	20	26/34	.035″	.305″	1252	259.80	30.67
5	20	26/34	.035″	.330″	1253	322.80	37.17
6	20	26/34	.035″	.345″	1254	393.23	45.75
7	20	26/34	.035″	.355″	1255	431.21	49.83
8	20	26/34	.035″	.385″	1255/8	481.92	56.42
10	20	26/34	.035″	.440″	1255/10	1299.89	139.46
12	20	26/34	.065″	.525″	1255/12	1930.77	203.07
15	20	26/34	.065″	.595″	1255/15	2529.11	263.00
20	20	26/34	.065″	.660″	1255/20	3162.51	326.60

UNSHIELDED, RUBBER INSULATED, RUBBER JACKET (FIG. C)

Each conductor stranded, tinned copper with color-coded rubber insulation .020″ thick, cabled with fillers where necessary; cotton wrap; tough black rubber jacket overall. Temp., −20° C to +60° C. **Conductors' Color Code:** 1 thru 20, per color code table* below.

2	20	26/34	.035″	.240″	1244	$ 238.14	$ 28.13
3	20	26/34	.035″	.255″	1245	261.98	30.80
4	20	26/34	.035″	.275″	1246	297.50	34.67
5	20	26/34	.035″	.300″	1247	389.42	46.50
6	20	26/34	.035″	.315″	1247/6	478.61	56.55
7	20	26/34	.035″	.325″	1247/7	559.52	68.52
8	20	26/34	.035″	.360″	1247/8	610.65	71.25
10	20	26/34	.035″	.410″	1247/10	956.12	104.90
12	20	26/34	.035″	.435″	1247/12	1361.70	145.68
15	20	26/34	.035″	.505″	1247/15	1947.39	204.29
20	20	26/34	.035″	.570″	1247/20	2596.58	275.46

*MULTI-CONDUCTORS' COLOR CODE

No.	Color	No.	Color	No.	Color
1	Black	8	Orange	15	White/Blue
2	White	9	Gray (Slate)	16	White/Brown
3	Red	10	Violet (Purple)	17	White/Purple
4	Green	11	White/Black	18	White/Slate
5	Yellow	12	White/Red	19	Black/Red
6	Blue	13	White/Green	20	Black/Yellow
7	Brown	14	White/Yellow		

SHIELDED, HEAVY DUTY NEOPRENE JACKET (FIG. B)

Each conductor stranded tinned copper; color-coded rubber insulation (.020″ th., 18 ga. cables; .025″ th., 16 ga. cables; .030″ th., all others), cabled with fillers where necessary; cotton wrap; braided tinned copper shield; cotton wrap and black neoprene jacket overall. Rated 300 volts. Temp., −20° C to +60° C. **Conductors' Color Code:** 1 thru 20, per color code table* below.

#18 GAUGE CABLE

Conductors			Nom. Jacket		Alpha	Net per Spool•	
No.	Size	Strand	Th.	O.D.	No.	1000′	100′
2	18	41/34	.035″	.295″	1450	$ 470.81	$ 54.00
3	18	41/34	.035″	.305″	1451	807.08	99.90
4	18	41/34	.035″	.330″	1452	1008.86	110.07
6	18	41/34	.035″	.370″	1454	1573.89	167.45
8	18	41/34	.035″	.420″	1456	2197.35	230.30
10	18	41/34	.035″	.480″	1458	2714.13	281.99
12	18	41/34	.065″	.555″	1459	3684.57	388.41
15	18	41/34	.065″	.640″	1459/15	4640.82	481.73
20	18	41/34	.065″	.730″	1459/20	5238.50	541.44

#16 GAUGE CABLE

2	16	65/34	.035″	.335″	1450/16	$ 843.78	$103.97
3	16	65/34	.035″	.355″	1451/16	1033.32	112.52
4	16	65/34	.035″	.385″	1452/16	1189.25	128.12
6	16	65/34	.040″	.445″	1454/16	2137.05	227.45
8	16	65/34	.040″	.510″	1456/16	2620.59	272.58

#14 GAUGE CABLE

2	14	41/30	.040″	.395″	1400	$1077.39	$110.85
3	14	41/30	.040″	.425″	1401	1307.97	140.15
4	14	41/30	.040″	.455″	1402	1588.53	160.55
6	14	41/30	.040″	.515″	1404	2251.16	226.35

#12 GAUGE CABLE

2	12	65/30	.040″	.440″	1410	$1806.00	$189.96
3	12	65/30	.040″	.465″	1411	2097.93	211.17

#10 GAUGE CABLE

2	10	105/30	.040″	.495″	1420	$2254.79	$226.97

TEFLON FEP EXTRUDED JACKET OVER SHIELD MIL-W-16878D, UL STYLE 1212, 1213 (FIG. D)

Each conductor stranded silver plated copper, Type E extruded TFE insulation color coded, cabled, braided silver plated copper shield 90% coverage, extruded FEP white Teflon jacket overall. Temp. rating, −65° C to +200° C. Voltage rating, 600 volts. Resists acids, alkalis, oil, flame, moisture, solvents and fungus. Nominal wall thickness, .010″; jacket thickness, .010″. **Conductors' Color Code:** 1 = White; 2 = Black; 3 = Red.

Conductors			Nom.	Alpha	Net per Spool	
No.	Size	Strand	O.D.	No.	1000′	100′
1	24	19/36	.085″	2831	$396.00	$ 52.72
2	24	19/36	.130″	2831/2	578.61	73.20
3	24	19/36	.135″	2831/3	827.61	100.70
1	22	19/34	.091″	2834	395.49	52.72
2	22	19/34	.150″	2834/2	621.59	77.87
3	22	19/34	.158″	2834/3	946.92	102.51
1	20	19/32	.100″	2837	437.12	57.38
2	20	19/32	.168″	2837/2	696.41	86.05
3	20	19/32	.178″	2837/3	1048.64	112.79

SPIRAL WRAP TUBING

The SW Series tubing simplifies wire harnessing, cabling, and bundling work. The tubing clings tightly to the wire or cable being bundled, yet is flexible and simple to apply. Available in: polyethylene, meeting MIL-I-631D; flame-resistant polyethylene, meeting MIL-E-500F; nylon, meeting MIL-M-20693A; Teflon, meeting MIL-I-22129C; and ultraviolet-resistant polyethylene for use outdoors.

Alpha No.	Material	Max. Dia. Wire/Cable (in.)	Nom. Wall Thickness (in.)	Pitch (in.)	Color	Net 25′*
SW-1		½	.031	.250		$ 1.20
SW-2		2	.046	.375		1.93
SW-3	Poly-	3	.052	.437	Natural	3.00
SW-4	ethylene	4	.060	.562		3.66
SW-5		5	.065	.750		6.85
SW-6		6	.095	1.000		9.64
SW-10		½	.031	.250		1.69
SW-11	Flame	2	.046	.375		3.39
SW-12	Resistant	3	.052	.437	White	5.67
SW-13	Poly-	4	.060	.562		7.67
SW-14	ethylene	5	.065	.750		9.54
SW-20		½	.016	.250		2.51
SW-21	Nylon	2	.025	.375	Natural	4.37
SW-22		3	.035	.437		9.37
SW-23		4	.035	.562		12.31
SW-30		½	.030	.250		20.73
SW-31		2	.030	.375		36.55
SW-32	Teflon	2½	.030	.437	Natural	57.49
SW-33		3	.030	.562		78.16
SW-34		3½	.030	.750		135.52
SW-35		4	.040	1.000		214.85
SW-40		½	.030	.250		1.24
SW-41	Ultra-	2	.045	.375		2.60
SW-42	violet	3	.050	.437		3.13
SW-43	Resistant	4	.060	.562	Black	3.82
SW-44	Poly-	5	.065	.750		8.24
SW-45	ethylene	6	.095	1.000		18.13

*Larger put-ups available.

All of the MIL-W-16878 cables on this page available with other jacket colors; data and prices on request.

SHIELDED NYLON PVC CONDUCTORS MIL-W-16878D/B (FIG. A)

Each conductor stranded tinned copper, .010" polyvinylchloride insulation, color coded, clear nylon (polyamide) jacket, conductors cabled, braided tinned copper shield 90% coverage, white polyvinylchloride jacket overall. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists acids, alkalis, oil, flame, moisture, fungus, solvents. Nominal wall thickness, .010"; nylon thickness, .003".

Conductor No.	Size	Strand	Nom. Overall Jacket	Nom. O.D.	Alpha No.	Net per Spool* 1000′	100′
1	26	7/34	.010"	.087"	3200	$ 74.09	$ 8.65
2	26	7/34	.014"	.138"	3201	100.71	11.75
3	26	7/34	.014"	.142"	3202	136.89	15.97
4	26	7/34	.016"	.162"	3203	161.34	18.87
1	24	19/36	.010"	.092"	3210	78.45	9.42
2	24	19/36	.016"	.152"	3211	112.65	13.08
3	24	19/36	.016"	.161"	3212	144.90	16.92
4	24	19/36	.017"	.172"	3213	175.95	20.92
1	22	19/34	.010"	.100"	3220	86.94	11.13
2	22	19/34	.016"	.168"	3221	160.55	19.30
3	22	19/34	.017"	.178"	3222	209.46	24.87
4	22	19/34	.019"	.194"	3223	214.23	26.23
1	20	19/32	.010"	.106"	3230	86.25	10.58
2	20	19/32	.019"	.186"	3231	158.70	19.58
3	20	19/32	.019"	.196"	3232	208.80	24.00
4	20	19/32	.021"	.218"	3233	250.80	29.08
1	18	19/30	.012"	.120"	3240	119.70	14.85
2	18	19/30	.021"	.210"	3241	206.66	24.53
3	18	19/30	.022"	.227"	3242	274.86	32.30
4	18	19/30	.023"	.250"	3243	305.46	37.43
1	16	19/29	.016"	.137"	3245	115.95	14.00
2	16	19/29	.023"	.236"	3246	205.35	23.58
3	16	19/29	.023"	.240"	3247	280.80	32.58
4	16	19/29	.025"	.274"	3248	346.80	41.25
22 GAUGE, 5-12 CONDUCTOR CABLE							
5	22	19/34	.020"	.212"	3335	$779.49	$88.00
6	22	19/34	.020"	.235"	3336	853.34	96.22
8	22	19/34	.025"	.257"	3337	1189.71	120.23
10	22	19/34	.025"	.284"	3340	1337.42	134.97
12	22	19/34	.030"	.310"	3342	1599.99	161.24

COLOR CODE OF CONDUCTORS

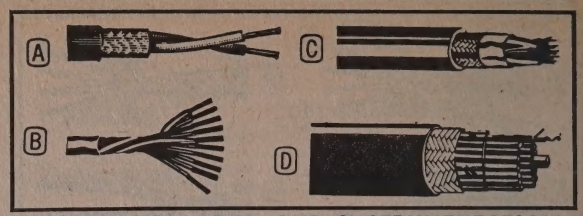
Pair No.	Color Combination	Pair No.	Color Combination
1	Black paired with Red	7	Black paired with Orange
2	Black paired with White	8	Red paired with Green
3	Black paired with Green	9	Red paired with White
4	Black paired with Blue	10	Red paired with Blue
5	Black paired with Brown	11	Red paired with Yellow
6	Black paired with Yellow	12	Red paired with Brown

IRRADIATED CONDUCTOR CABLE, 600 VOLTS, 105° C, MIL-W-16878D/B, UL 1429 (FIG. B)

Miniature shielded cable with both military specifications and UL listings. Ideal for application on crowded circuit boards where terminals must be soldered. Prevents shrinkback, melting or charring when used in production line soldering. Stranded tinned copper conductors, color coded, irradiated PVC (RX-7000) insulation (braided, tinned copper shield) white PVC jacket overall. Nom. jacket thickness, .025". Nom. insul. thickness, .010". **Conductors' Color Code:** 1 = White; 2 = Black; 3 = Red; 4 = Green.

UNSHIELDED

Conductor No.	Size	Strand	Nom. O.D.	Alpha No.	Net per Spool* 1000′	100′
1	24	7/32	.90"	6621A	$ 94.16	$12.08
2	24	7/32	.129"	6622A	143.39	19.28
3	24	7/32	.139"	6623	186.41	23.93
4	24	7/32	.150"	6624A	248.06	31.87
1	22	7/30	.98"	6631	100.37	12.85
2	22	7/30	.149"	6632A	167.73	21.52
3	22	7/30	.155"	6633	218.76	26.80
4	22	7/30	.168"	6634A	300.35	38.55
1	20	7/28	.105"	6641A	119.52	15.37
2	20	7/28	.163"	6642A	172.38	22.12
3	20	7/28	.178"	6643	243.75	31.30
4	20	7/28	.187"	6644A	324.53	41.67
1	18	7/26	.115"	6651A	131.43	16.87
2	18	7/26	.182"	6652A	215.87	27.70
3	18	7/26	.193"	6653	287.07	36.85
4	18	7/26	.212"	6654A	401.49	51.55
SHIELDED						
1	24	7/32	.115"	7621	$113.01	$14.50
2	24	7/32	.158"	7622A	172.07	23.15
3	24	7/32	.164"	7623	223.71	28.67
4	24	7/32	.176"	7624A	297.68	38.23
1	22	7/30	.122"	7631	120.45	15.47
2	22	7/30	.172"	7632A	201.26	25.82
3	22	7/30	.180"	7633	262.50	32.18
4	22	7/30	.193"	7634A	360.47	46.25
1	20	7/28	.130"	7661	143.39	18.40
2	20	7/28	.188"	7662	206.87	26.55
3	20	7/28	.197"	7663	292.52	37.55
4	20	7/28	.212"	7664	389.45	49.96
1	18	7/26	.140"	7671	157.73	20.23
2	18	7/26	.208"	7672	259.02	33.22
3	18	7/26	.218"	7673	344.48	44.20
4	18	7/26	.237"	7674	481.80	61.82



SHIELDED CONTROL AND INSTRUMENTATION CABLE, MIL-W-16878D (FIG. C)

Used as interconnecting cables for electronic equipment, instrumentation and control cable, telemetry data, remote control of sensitive recording instruments. Each conductor stranded tinned copper, color coded, polyvinylchloride insulation, cabled, Mylar® wrap. Braided tinned copper shield 90% coverage, chrome gray polyvinylchloride jacket overall. Temp. rating, −55° C to +105° C. Resists acids, alkalis, oil, flame, moisture, solvents and fungus.

MINIATURE SHIELDED CONTROL CABLE— 600 VOLT—TYPE B CONDUCTOR

Nominal Wall Thickness: .010".

Conductor No.	Size	Strand	Nom. Jkt.	Nom. O.D.	Alpha No.	Net per Spool* 1000′	100′
2	B-28	7/36	.012"	.125"	3302	$216.99	$ 25.80
3	B-28	7/36	.012"	.130"	3303	289.70	34.10
4	B-28	7/36	.012"	.140"	3304	353.61	41.18
6	B-28	7/36	.015"	.170"	3306	451.98	52.02
8	B-28	7/36	.015"	.175"	3308	514.68	59.00
10	B-28	7/36	.018"	.210"	3310	653.60	74.38
12	B-28	7/36	.018"	.215"	3312	739.79	85.78
15	B-28	7/36	.020"	.230"	3315	898.95	103.15
20	B-28	7/36	.022"	.260"	3320	1122.18	115.37

18 GAUGE HEAVY DUTY SHIELDED CONTROL CABLE 1000 VOLT, TYPE C CONDUCTOR

Nominal Wall Thickness: .016".

5	C-18	19/30	.025"	.300"	3405	$ 911.58	$104.47
8	C-18	19/30	.030"	.350"	3408	1225.83	141.59
10	C-18	19/30	.035"	.405"	3410	1629.92	166.20
12	C-18	19/30	.035"	.430"	3412	1955.67	225.90
15	C-18	19/30	.040"	.470"	3415	2225.45	225.81
20	C-18	19/30	.045"	.530"	3420	3009.09	304.07
30	C-18	19/30	.055"	.650"	3430	4450.94	454.58

16 GAUGE SHIELDED CONTROL CABLE 1000 VOLT, TYPE C CONDUCTOR

Nominal Wall Thickness: .016".

4	16	19/29	.031"	.326"	3444	$1334.15	$134.66
5	16	19/29	.032"	.346"	3445	1483.07	149.79
6	16	19/29	.034"	.369"	3446	1590.93	160.55
8	16	19/29	.041"	.424"	3448	1995.47	201.06
10	16	19/29	.044"	.470"	3450	2350.76	236.57
12	16	19/29	.048"	.511"	3452	3017.81	303.50

COLOR CODE OF CONDUCTORS (CONFORMS TO MIL-C-915)

No.	Color	No.	Color	No.	Color
1	Black	11	Blue/Black	21	Orange/Green
2	White	12	Black/White	22	Black/White/Red
3	Red	13	Red/White	23	White/Black/Red
4	Green	14	Green/White	24	Red/Black/White
5	Orange	15	Blue/White	25	Green/Black/White
6	Blue	16	Black/Red	26	Orange/Black/White
7	White/Black	17	White/Red	27	Blue/Black/White
8	Red/Black	18	Orange/Red	28	Black/Red/Green
9	Green/Black	19	Blue/Red	29	White/Red/Green
10	Orange/Black	20	Red/Green	30	Red/Black/Green

COMPUTER CABLE

COAXIAL—UL STYLE 2386 (FIG. D)

Used for interconnection of modules and data transmission. Individual miniature coax cables, grouped together under common overall shield and jacket. Individual cables of #26 AWG solid silver-plated copper conductor, air-spaced, flame-retardant polyethylene dielectric spiral-wrapped 29 AWG tinned copper drain wire, braided tinned copper shield, overall .016" PVC jacket. Nominal dia., .155". Completed cable constructed of miniature coaxial cables cabled with PVC fillers, clear Mylar wrap, overall gray PVC jacket. Shielded cables have braided tinned copper shields with spirally wrapped #26 AWG solid copper alloy drain wires. Nominal impedance, 95 ohms. Attenuation at 400 MHz max., 10.2 dB/100 ft. Velocity propogation, 83%. Voltage, 750 V, max.

Type	No. of Indiv. Coax Cables	Jacket Thickness	Nom. O.D.	Alpha No.	Net per Spool*† 1000′	100′
Unshielded	20	.085"	.978"	2453	$4967.76	$509.19
Unshielded	24	.085"	1.075"	2454	6458.09	658.23
Shielded	24	.080"	1.110"	2456	6954.87	707.90

UL STYLE 2343—18 GAUGE (FIG. C)

Used for interconnection of computer modules. Each conductor stranded tinned copper. Color coded, 80° C PVC insulation. Cabled with PVC fillers, .001" clear Mylar wrap. Braided tinned copper shield, 85% coverage. Gray PVC jacket. Nom. wall thickness, .016".

Conductor No.	Strand	Jacket Thickness	Nom. O.D.	Alpha No.	Net/Spool*† 1000′	100′
6	16/30	.062"	.394"	2458	$596.13	$67.62

*Also available in 500 ft. spools. Prices on request. †Available also cut to customer's length requirement. Minimum order 25 ft. per item. All orders non-cancellable. ®Registered DuPont TM.

UNSHIELDED AND SHIELDED COMPUTER AND CONTROL CABLES

UNSHIELDED COMPUTER AND CONTROL CABLE UL STYLE 1061 CONDUCTORS, 600 VOLTS

For control and signal application in computers, industrial equipment and instrumentation. Stranded tinned copper conductor, .010″ color-coded PVC insulation. Cabled singly or in pairs. Gray vinyl jacket overall. Cable rated at +80° C, 300 volts. Individual conductors rated +105° C, 600 volts.

UNSHIELDED MULTI-CONDUCTOR CABLES

24 GAUGE

Nominal O.D. conductor, .045″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D., In.	Net per Spool 1000′	Net per Spool 100′
5200	5	.218	$ 375.26	$ 55.05
5201	7	.251	405.71	59.50
5202	12	.301	560.37	82.22
5203	15	.328	761.91	100.56
5204	19	.341	825.80	108.99
5205	27	.394	1104.09	145.74
5206	37	.418	1521.56	200.85
5207	48	.470	1912.77	252.50
5208	60	.508	2283.47	301.41

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5210	5	.202	$ 406.05	$ 59.57
5211	7	.272	435.71	63.90
5212	12	.332	613.65	90.00
5213	15	.352	823.52	108.69
5214	19	.372	905.64	119.54
5215	27	.432	1206.77	159.29
5216	37	.481	1665.27	219.83
5217	48	.533	2080.44	274.61
5218	60	.574	2582.31	340.70

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5220	5	.277	$ 460.80	$ 67.58
5221	7	.293	515.55	75.60
5222	12	.363	734.55	107.73
5223	15	.393	987.77	130.37
5224	19	.412	1120.07	147.84
5225	27	.494	1489.62	188.02
5226	37	.521	2050.79	270.69
5227	48	.584	2593.71	342.38
5228	60	.644	3152.60	416.16

UNSHIELDED PAIRED CABLES

24 GAUGE

Nominal O.D. conductor, .044″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Pairs	Nom. O.D., In.	Net per Spool 1000′	Net per Spool 100′
5230	5	.332	$ 540.65	$ 79.30
5231	7	.352	620.48	91.02
5232	12	.438	984.23	118.02
5233	15	.488	1142.88	150.86
5234	19	.507	1298.01	171.35
5235	27	.595	1761.08	232.46
5236	37	.665	2361.03	311.67
5237	48	.747	2947.29	389.04
5238	60	.819	3763.95	496.85

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5240	5	.368	$ 593.12	$ 86.98
5241	7	.393	686.66	100.70
5242	12	.475	1008.29	133.11
5243	15	.551	1325.37	174.95
5244	19	.563	1489.62	196.64
5245	27	.604	1975.52	260.76
5246	37	.755	2653.04	350.19
5247	48	.856	3428.64	452.58
5248	60	.984	4243.01	560.07

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5250	5	.398	$ 707.18	$103.73
5251	7	.445	850.89	112.32
5252	12	.545	1275.20	168.33
5253	15	.607	1546.65	204.15
5254	19	.634	1934.45	255.33
5255	27	.749	2586.86	341.48
5256	37	.826	3554.09	469.14
5257	48	.955	4477.98	591.09
5258	60	1.045	5536.44	730.80

SHIELDED COMPUTER AND CONTROL CABLE UL STYLE 1061 CONDUCTORS, 600 VOLTS, 80° C

Used for control and signal application in computers, industrial equipment and instrumentation. Stranded tinned copper conductor, .010″ color-coded PVC insulation. Braided tinned copper shield. Cabled singly or in pairs; gray vinyl jacket overall. Cable rated at 80° C, 300 volts. Individual conductors rated 105° C, 600 volts.

SHIELDED MULTI-CONDUCTOR CABLES

24 GAUGE

Nominal O.D. conductor, .045″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D., In.	Net per Spool 1000′	Net per Spool 100′
5300	5	.247	$ 451.68	$ 66.23
5301	7	.277	497.30	72.92
5302	12	.328	672.96	98.70
5303	15	.353	885.09	116.85
5304	19	.367	960.39	126.78
5305	27	.418	1263.78	166.82
5306	37	.447	1717.74	226.77
5307	48	.497	2151.17	283.95
5308	60	.538	2545.80	336.05

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5310	5	.287	$ 497.30	$ 72.92
5311	7	.298	538.37	78.97
5312	12	.357	739.10	108.42
5313	15	.382	962.66	127.07
5314	19	.397	1053.90	139.11
5315	27	.458	1402.94	185.18
5316	37	.513	1907.06	251.75
5317	48	.563	2356.47	311.06
5318	60	.603	2846.91	375.80

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5320	5	.302	$ 563.46	$ 82.63
5321	7	.318	627.33	92.02
5322	12	.387	875.99	115.62
5323	15	.417	1142.88	150.86
5324	19	.437	1272.90	168.03
5325	27	.518	1726.86	227.94
5326	37	.552	2317.68	305.94
5327	48	.612	2908.52	351.95
5328	60	.673	3499.32	461.91

SHIELDED PAIRED CABLES

24 GAUGE

Nominal O.D. conductor, .044″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Pairs	Nom. O.D., In.	Net per Spool 1000′	Net per Spool 100′
5330	5	.357	$ 666.12	$ 97.70
5331	7	.378	761.91	100.56
5332	12	.378	1113.21	146.94
5333	15	.513	1384.70	182.76
5334	19	.533	1560.33	205.95
5335	27	.622	2075.87	274.01
5336	37	.693	2716.91	358.62
5337	48	.778	3355.64	442.94
5338	60	.847	4215.63	556.46

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5340	5	.392	$ 736.85	$108.07
5341	7	.418	844.04	111.41
5342	12	.497	1259.21	166.22
5343	15	.578	1608.24	202.19
5344	19	.584	1791.83	236.37
5345	27	.672	2331.36	307.76
5346	37	.784	3070.47	405.32
5347	48	.883	3903.11	515.19
5348	60	.960	4815.59	635.66

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5350	5	.422	$ 864.57	$114.12
5351	7	.468	1056.20	139.41
5352	12	.572	1560.33	205.95
5353	15	.633	1973.24	260.46
5354	19	.665	2276.63	300.50
5355	27	.778	2995.20	395.37
5356	37	.854	4021.73	530.87
5357	48	.983	5061.96	668.19
5358	60	1.074	6177.45	815.42

COLOR CODE OF CONDUCTORS (Colors Repeated)

No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color
1	Black	4	Orange	7	Blue	10	White	13	Wht/Red	16	Wht/Grn	19	Wht/Gray
2	Brown	5	Yellow	8	Violet	11	Wht/Blk	14	Wht/Org	17	Wht/Blue	20	Wht/Blk/Brn
3	Red	6	Green	9	Gray	12	Wht/Brn	15	Wht/Yel	18	Wht/Violet	21	Wht/Blk/Red

20/10 PVC NYLON UNSHIELDED STATION CONTROL CABLE

Heavy-duty, multi-conductor cable with plastic jacket. Used for remote control of automatic electrical equipment, recording and relaying devices, telemetering, temperature voltage pressure and motor control, etc. Each conductor stranded bare copper, .020" polyethylene insulation on 14 and 12 gauge cable; .015" on 16 gauge cable. .010" polyvinylchloride jacket over each conductor. Moisture resistant tape, black polyvinylchloride jacket overall. Rated 600 volts. Cable cut to specific lengths, minimum 25 ft. All orders are non-cancellable. **Color Code:** Conforms to IPCEA standards either with full color code or surface printed with color name and number.

16 GAUGE, 26/30 BARE COPPER

Alpha No.	No. of Cond.	Jkt. Thick-ness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
4102	2	.045"	.320"	$ 0.98	$0.63	$0.48	$0.47
4103	3	.045"	.340"	1.65	1.01	.80	.71
4105	5	.045"	.400"	2.67	1.67	1.32	1.17
4106	6	.045"	.435"	3.03	1.88	1.50	1.35
4107	7	.045"	.435"	3.41	2.12	1.71	1.50
4108	8	.045"	.480"	3.80	2.37	1.92	1.71
4110	10	.060"	.580"	4.77	2.97	2.37	2.15
4112	12	.060"	.590"	5.78	3.60	2.87	2.61
4114	14	.060"	.605"	6.14	3.83	3.08	2.76
4116	16	.060"	.665"	7.43	4.65	3.74	3.35
4119	19	.060"	.690"	8.72	5.46	4.35	3.93
4121	21	.060"	.735"	9.23	5.76	4.52	4.29
4122	22	.060"	.760"	10.10	6.30	5.06	4.52
4124	24	.060"	.805"	10.58	6.62	5.28	4.77
4126	26	.060"	.805"	11.40	6.90	5.34	5.13
4130	30	.080"	.900"	12.77	7.95	6.41	5.67
4137	37	.080"	.965"	16.37	10.20	8.22	7.37
4140	40	.080"	1.010"	18.35	11.48	9.18	8.28
4150	50	.080"	1.100"	21.96	13.68	11.00	9.87
4160	60	.080"	1.200"	27.00	16.82	13.50	12.15

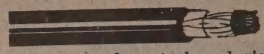
14 GAUGE, 19/27 BARE COPPER

4202	2 Rd.	.045"	.380"	$ 1.11	$0.69	$0.59	$0.48
4203	3 Rd.	.045"	.390"	1.80	1.11	.93	.80
4204	4	.045"	.425"	2.19	1.35	1.10	.98
4205	5	.045"	.465"	2.91	1.82	1.46	1.32
4206	6	.045"	.520"	3.39	2.09	1.67	1.50
4207	7	.045"	.520"	3.80	2.37	1.88	1.71
4208	8	.060"	.580"	4.25	2.67	2.12	1.92
4209	9	.060"	.635"	4.88	3.03	2.45	2.19
4210	10	.060"	.690"	5.28	3.33	2.67	2.40
4212	12	.060"	.705"	6.45	4.05	3.18	2.87
4214	14	.060"	.750"	6.81	4.25	3.41	3.08
4216	16	.060"	.785"	8.28	5.15	4.14	3.74
4219	19	.060"	.835"	9.71	6.03	4.83	4.35
4224	25	.080"	1.010"	11.78	6.65	5.87	5.28
4227	27	.080"	1.200"	13.20	8.28	6.62	5.94
4230	30	.080"	1.070"	14.19	8.88	7.10	6.41
4234	34	.080"	1.140"	16.76	10.46	8.39	7.56
4237	37	.080"	1.160"	18.20	11.39	9.09	8.22
4240	40	.080"	1.175"	20.39	12.74	10.19	9.18

12 GAUGE, 19/25 BARE COPPER

4302	2 Twin	.045"	.415"	$ 1.41	$0.87	$0.69	$0.63
4303	3 Rd.	.045"	.445"	2.12	1.32	1.10	.98
4304	4	.045"	.485"	2.57	1.61	1.29	1.13
4305	5	.045"	.530"	3.39	2.09	1.67	1.50
4306	6	.045"	.610"	3.96	2.46	1.98	1.80
4307	7	.060"	.610"	4.26	2.69	2.15	1.92
4308	8	.060"	.660"	4.89	3.08	2.45	2.19
4309	9	.060"	.700"	5.24	3.26	2.67	2.37
4310	10	.060"	.770"	6.56	4.10	3.26	2.97
4312	12	.060"	.790"	7.26	4.56	3.66	3.26
4314	14	.060"	.830"	7.76	4.88	3.89	3.50
4315	15	.080"	.915"	8.69	5.39	4.29	3.89
4316	16	.080"	.915"	9.50	5.93	4.74	4.26
4318	18	.080"	.970"	10.43	6.50	5.22	4.73
4319	19	.080"	.970"	11.12	6.95	5.55	4.98
4320	20	.080"	1.020"	11.60	7.26	5.82	5.28
4322	22	.080"	1.050"	12.87	8.04	6.45	5.78
4325	25	.080"	1.130"	13.98	8.72	6.96	6.30
4327	27	.080"	1.050"	15.02	9.39	7.53	6.74
4330	30	.080"	1.200"	16.31	10.19	8.21	7.35
4334	34	.080"	1.270"	19.13	11.94	9.57	8.61
4337	37	.080"	1.285"	20.79	12.99	10.41	9.35

15/5 PVC NYLON CONTROL CABLE 600 VOLTS, 90° C



Widely used for all types of control and signal circuits. Bare stranded copper conductor, .015" PVC insulation. .005" nylon jacket over each conductor. Has moisture resistant tape, black PVC jacket overall. Suitable for underground burial. Conductors color coded per IPCEA standards. See color code, below. Meets UL, ASTM, IPCEA S-61-402. Available cut to customer's length requirement. Minimum order 25 ft. per item. Orders are non-cancellable.

AWG NO. 16 (26 X 30)

Alpha No.	No. of Cond.	Jkt. Thick-ness	Approx. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
7500	2 (Flat)	.045"	.295"*	$ 1.28	$0.80	$0.63	$0.59
7501	2	.045"	.310"	1.61	.98	.80	.71
7502	3	.045"	.310"	1.77	1.11	.93	.80
7503	4	.045"	.335"	2.15	1.35	1.10	.98
7504	5	.045"	.360"	2.91	1.82	1.46	1.32
7505	6	.045"	.395"	3.35	2.09	1.67	1.49
7506	7	.045"	.395"	3.77	2.36	1.88	1.67
7507	8	.045"	.420"	4.17	2.61	2.09	1.88
7508	9	.045"	.455"	4.82	3.00	2.40	2.15
7509	10	.045"	.490"	5.22	3.26	2.61	2.37
7511	12	.045"	.505"	6.33	3.96	3.17	2.85
7513	14	.060"	.560"	6.74	4.26	3.39	3.03
7514	15	.060"	.590"	7.43	4.65	3.66	3.35
7515	16	.060"	.590"	8.21	5.13	4.08	3.69
7517	18	.060"	.620"	9.03	5.63	4.52	4.08
7518	19	.060"	.620"	9.62	5.97	4.82	4.29
7519	20	.060"	.650"	10.10	6.30	5.06	4.52
7520	21	.060"	.650"	10.61	6.62	5.28	4.77
7521	22	.060"	.680"	11.09	6.93	5.55	4.97
7522	23	.060"	.680"	11.39	7.10	5.67	5.13
7523	24	.060"	.720"	11.60	7.26	5.84	5.24

*Approx. O.D., .200" x .295".

AWG NO. 14 (19 X 27)

7525	2 (Flat)	.045"	.325"*	$ 1.49	$0.98	$0.78	$0.69
7526	2	.045"	.325"	1.67	1.02	.81	.78
7527	3	.045"	.345"	1.98	1.28	1.01	.93
7528	4	.045"	.375"	2.40	1.49	1.26	1.10
7529	5	.045"	.405"	3.24	2.04	1.65	1.46
7530	6	.045"	.440"	3.69	2.30	1.82	1.67
7531	7	.045"	.440"	4.17	2.61	2.09	1.88
7532	8	.045"	.475"	4.65	2.91	2.36	2.09
7533	9	.045"	.510"	5.34	3.35	2.69	2.40
7534	10	.060"	.585"	5.84	3.66	2.91	2.61
7536	12	.060"	.605"	7.05	4.43	3.56	3.17
7538	14	.060"	.630"	7.53	4.73	3.77	3.39
7539	15	.060"	.665"	8.31	5.15	4.14	3.74
7540	16	.060"	.665"	9.08	5.66	4.56	4.08
7542	18	.060"	.700"	10.04	6.26	4.98	4.52
7543	19	.060"	.700"	10.68	6.65	5.31	4.82
7544	20	.060"	.735"	11.19	6.96	5.63	5.06
7545	21	.060"	.735"	11.76	7.35	5.93	5.28
7546	22	.060"	.770"	12.36	7.73	6.15	5.55
7547	23	.060"	.770"	12.65	7.89	6.32	5.67
7548	24	.060"	.815"	12.96	8.04	6.47	5.84

*Approx. O.D., .240" x .325".

AWG NO. 12 (19 X 25)

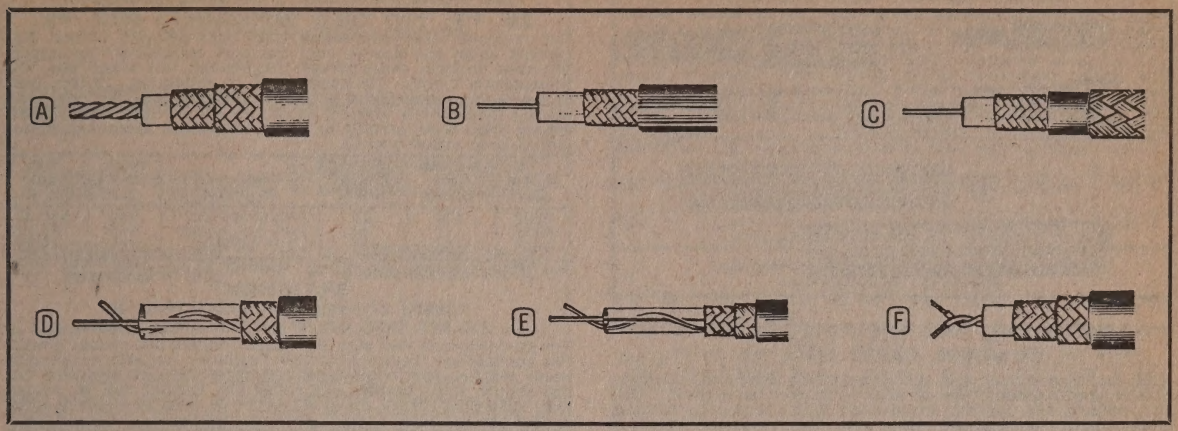
7550	2 (Flat)	.045"	.365"*	$ 1.88	$1.17	$0.96	$0.81
7551	2	.045"	.365"	2.09	1.29	1.02	.96
7552	3	.045"	.385"	2.36	1.46	1.17	1.02
7553	4	.045"	.420"	2.84	1.77	1.43	1.29
7554	5	.045"	.460"	3.69	2.30	1.82	1.67
7555	6	.045"	.500"	4.40	2.70	2.19	1.98
7556	7	.045"	.500"	4.74	2.97	2.37	2.12
7557	8	.060"	.570"	5.39	3.39	2.69	2.45
7558	9	.060"	.615"	5.78	3.60	2.87	2.61
7559	10	.060"	.665"	7.22	4.49	3.60	3.26
7561	12	.060"	.685"	8.01	4.98	4.02	3.60
7563	14	.060"	.720"	8.60	5.34	4.26	3.86
7564	15	.060"	.760"	9.51	5.94	4.77	4.26
7565	16	.060"	.760"	10.43	6.50	5.22	4.73
7567	18	.060"	.800"	11.48	7.20	5.76	5.15
7568	19	.060"	.800"	12.24	7.64	6.14	5.54
7569	20	.080"	.880"	13.14	8.01	6.41	5.82
7570	21	.080"	.880"	13.46	8.40	6.72	6.11
7571	22	.080"	.925"	14.15	8.84	7.05	6.33
7572	23	.080"	.925"	14.52	9.03	7.25	6.56
7573	24	.080"	.975"	14.87	9.30	7.43	6.65

*Approx. O.D., .260" x .365".

SERIES AWG No. 10 (19 x 23) also available. Prices on request.

IPCEA COLOR CODE SHOWING CONDUCTOR NO. AND COLOR

No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color
1	Black	18	Orange/Red	35	Wht/Red/Org	52	Red/Org/Blk	69	Wht/Grn/Blue	86	Blue/Green
2	White	19	Blue/Red	36	Org/Wht/Blue	53	Grn/Red/Blue	70	Red/Grn/Blue	87	Black/Orange
3	Red	20	Red/Green	37	Wht/Red/Blue	54	Org/Blk/Blue	71	Grn/Wht/Red	88	White/Orange
4	Green	21	Orange/Green	38	Blk/Wht/Grn	55	Blue/Blk/Org	72	Org/Red/Blk	89	Red/Orange
5	Orange	22	Blk/Wht/Red	39	Wht/Blk/Grn	56	Blk/Org/Grn	73	Blue/Red/Blk	90	Green/Orange
6	Blue	23	Wht/Blk/Red	40	Red/Wht/Grn	57	Wht/Org/Grn	74	Blk/Org/Blue	91	Blue/Orange
7	White/Black	24	Red/Blk/Wht	41	Grn/Wht/Blue	58	Red/Org/Grn	75	Red/Org/Blue	92	Black/Blue
8	Red/Black	25	Grn/Blk/Wht	42	Org/Red/Grn	59	Grn/Blk/Blue	76	Grn/Red/Blk	93	White/Blue
9	Green/Black	26	Org/Blk/Wht	43	Blue/Red/Grn	60	Org/Grn/Blue	77	Org/Wht/Grn	94	Red/Blue
10	Orange/Black	27	Blue/Blk/Wht	44	Blk/Wht/Blue	61	Blue/Grn/Org	78	Blue/Wht/Grn	95	Green/Blue
11	Blue/Black	28	Blk/Red/Grn	45	Wht/Blk/Blue	62	Blk/Red/Blue	79	Red/Wht/Org	96	Orange/Blue
12	Black/White	29	Wht/Red/Grn	46	Red/Wht/Blue	63	Wht/Org/Blue	80	Grn/Wht/Org	97	Yellow
13	Red/White	30	Red/Blk/Grn	47	Grn/Org/Red	64	Red/Blk/Blue	81	Blue/Blk/Grn	98	Yellow/Black
14	Green/White	31	Grn/Blk/Org	48	Org/Red/Blue	65	Grn/Org/Blue	82	Orange/White	99	Yellow/White
15	Blue/White	32	Org/Blk/Grn	49	Blue/Red/Org	66	Org/Wht/Red	83	Green/Red	100	Yellow/Red
16	Black/Red	33	Blue/Wht/Org	50	Blk/Org/Red	67	Blue/Wht/Red	84	Black/Green		
17	White/Red	34	Blk/Wht/Org	51	Wht/Blk/Org	68	Blk/Grn/Blue	85	White/Green		



POLYETHYLENE DIELECTRIC RG/U COAXIAL CABLES

Manufactured in accordance with the latest military specification MIL-C-17. Factory tested to assure physical and electrical performance. Production runs are subjected to electrical property tests to determine capacitance, impedance and attenuation. Further tests are made for corona extinction and physical properties. Dielectrics and insulating jackets are subjected to aging and flow tests in a special forced-draft oven; plus, exposure to extreme low temperatures in sub-zero environmental chamber to determine cold-bend properties. All have solid polyethylene dielectric (VP, 65.9%) except as noted. Dimensions shown are max.

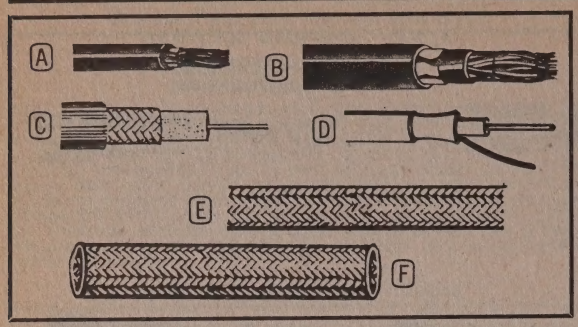
Alpha No.	MIL No. RG-	Fig.	Center Conductor			Shields*		Jacket		Oper. Volts rms	Nom. Imped. Ohms	Cap., pF/ ft.	Net Price per Put-Up		
			Mat.*	Strand	O.D., In.	1st	2nd	Mat.*	O.D., In.				100′ Put-Up	500′ Put-Up	1000′ Put-Up
9006A	6A/U	A	CW	1	.0285	SC	C	NCV	.336	2700	75	20	$ 61.04	$ 297.86	$595.55
9008♦	8/U	B	C	7/.0285	.086	C	.....	V	.415	5000	52	29.5	30.38	129.18	258.38
9008A♦	8A/U	B	C	7/.0285	.086	C	.....	NCV	.415	5000	52	29.5	35.70	148.34	296.67
9009B	9B/U	A	SC	7/.0285	.086	SC	SC	NCV	.430	5000	50	30	99.33	487.14	973.17
9011	11/U	B	TC	7/.0159	.048	C	.....	V	.415	5000	75	20.5	27.45	114.51	229.02
9011A♦	11A/U	B	TC	7/.0159	.048	C	.....	NCV	.412	5000	75	20.5	30.90	131.93	263.85
9012A‡	12A/U	C	TC	7/.0159	.048	C	.....	NCV	.412	5000	75	20.5	47.54	221.72	443.39
9014A	14A/U	A	C	1	.102	C	C	NCV	.558	7000	52	29.5	76.17	370.85	741.68
9017A	17A/U	B	C	1	.188	C	.....	NCV	.885	11000	52	29.5	155.78	758.07	1516.16
9019A	19A/U	B	C	1	.250	C	.....	NCV	1.135	14000	52	29.5	248.34	1158.86	2317.73
9055	55/U	A	C	1	.032	TC	TC	NP	.206	1900	53.5	28.5	19.53	89.73	179.31
9055B	55B/U	A	SC	1	.032	TC	TC	BP	.206	1900	53.5	28.5	23.55	111.41	222.45
9058♦	58/U	B	C	1	.032	TC	.....	V	.200	1900	53.5	28.5	12.50	39.95	79.88
9058A	58A/U	B	TC	19/.0071	.0375	TC	.....	V	.199	1900	50	29.5	12.90	40.88	81.77
9058C	58C/U	B	TC	19/.0071	.0375	TC	.....	NCV	.199	1900	50	29.5	14.25	44.38	96.77
9059♦	59/U	B	CW	1	.0253	C	.....	V	.250	2300	73	21	12.75	40.97	81.93
9059B♦	59B/U	B	CW	1	.023	C	.....	NCV	.246	2300	75	20.5	14.85	51.23	102.47
9062*♦	62/U	D	CW	1	.025	C	.....	V	.250	750	93	13.5	16.05	57.30	114.62
9062A*	62A/U	D	CW	1	.025	C	.....	NCV	.249	750	93	13.5	16.43	58.68	118.86
9062B*♦	62B/U	D	CW	1	.025	TC	TC	BP	.250	750	93	13.5	19.05	72.30	144.59
9063B*	63B/U	D	CW	1	.0253	C	.....	NCV	.415	1000	125	10	41.25	177.75	355.50
9071B*♦	71B/U	E	CW	1	.025	C	TC	BP	.250	750	93	13.5	22.26	98.45	196.89
9174	174/U	B	CW	7/.0063	.019	TC	.....	V	.105	1500	50	30	8.70	28.47	56.93
9212	212/U	A	SC	1	.056	SC	SC	NCV	.336	3000	50	29.5	87.29	406.37	812.72
9213♦	213/U	B	C	7/.0296	.090	C	.....	NCV	.412	5000	50	30.5	35.70	148.34	296.67
9214	214/U	A	SC	7/.0296	.090	SC	SC	NCV	.432	5000	50	30.5	112.50	500.88	1001.75
9215‡	215/U	C	C	7/.0296	.090	C	.....	NCV	.412	5000	50	30.5	48.96	231.78	460.67
9217	217/U	A	C	1	.106	C	C	NCV	.555	7000	50	30	76.29	359.90	719.79
9218	218/U	B	C	1	.195	C	.....	NCV	.880	11000	50	30	202.50	948.21	1896.42
9219§	219/U	C	C	1	.195	C	.....	NCV	.880	11000	50	30	285.00	1317.87	2635.73
9223♦	223/U	A	SC	1	.036	SC	SC	NCV	.216	1900	50	30	41.25	186.00	371.99

MINIATURE TEFLON® COAXIAL CABLES

Temp., −65° C to +200° C except RG-161/U, −55° C to +105° C.

Alpha No.	MIL No. RG-	Fig.	Center Conductor			Shields*		Jacket		Oper. Volts rms	Nom. Imped. Ohms	Cap., pF/ ft.	Net Price per Put-Up		
			Mat.*	Strand	O.D., In.	1st	2nd	Mat.*	O.D., In.				100′ Put-Up	500′ Put-Up	1000′ Put-Up
9178B	178B/U	B	SCW	7/.004	.....	SC	.....	FEP	.075	1000	50 ± 2	27.9	$ 25.95	$ 99.63	$199.25
9179B	179B/U	B	SCW	7/.004	.....	SC	.....	FEP	.105	1200	75 ± 3	20.4	39.98	169.62	339.23
9180B	180B/U	B	SCW	7/.004	.....	SC	.....	FEP	.145	850	93 ± 2	15.3	53.25	235.29	470.58
9187A	187A/U	B	SCW	7/.004	.....	SC	.....	TFE	.110	1200	75 ± 3	19.5	35.85	162.96	325.44
9188A	188A/U	B	SCW	7/.0067	.....	SC	.....	TFE	.110	1200	50 ± 2	27.5	35.85	157.52	315.03
9195A	195A/U	B	SCW	7/.004	.....	SC	.....	TFE	.155	1500	95 ± 3	14.5	78.89	375.21	750.39
9196A	196A/U	B	SCW	7/.004	.....	SC	.....	TFE	.080	1000	50 ± 2	28.5	28.25	115.16	230.30

*Materials—Conductors and Shields: C, copper; CW, copper-covered steel; SC, silver-covered copper; SCC, silver-coated cadmium bronze; SCW, silver-plated, Copperweld®; TC, tinned copper. Jackets: BP, black polyethylene, Type IIIA; FEP, extruded FEP Teflon; NCV, non-contaminating polyvinylchloride, Type IIA; NP, natural polyethylene, Type III; NY, nylon; PE, solid polyethylene; TFE, fused TFE Teflon tape; V, polyvinylchloride, Type I. ‡Armor .475″ O.D. alum. wire. §Armor .945″ O.D. alum. wire. *Dielectric is SPP (semi-solid polyethylene), 84% VP. ®Reg. TM's: Teflon of DuPont; Copperweld of Copperweld Steel Corp. ♦Available in 1000-ft. put-ups with max. of 3 lengths per put-up, where continuous lengths are not necessary; to order, add prefix **L** (e.g., **L**9608A) and **deduct 10% from 1000′ put-up price shown.**



TELEMETERING AND SUPERVISORY SHIELDED CONTROL CABLE (FIG. A)

Used for remote control of rocket recording data and test-firing control, transmission of signals which telemeter temperature, voltage pressure, etc., control of multiple circuits, measuring devices, quality control equipment, radar antenna. For aerial, duct and conduit installations. Double jacketed types have higher dielectric strength, suited for direct burial installations. Each conductor bare solid copper. High molecular weight polyethylene insulation. Color coded, twisted into pairs, cabled with a non-hygroscopic binder tape .008" aluminum shield, black polyethylene jacket overall. Voltage rating, 300 V. Double jacketed types have additional inner black polyethylene jacket over binder, and .005" copper shield. **Standard Put-up:** Cut to specification, minimum, 25 ft. Orders non-cancellable. **Color Code:** Fully color coded in accordance with REA standards.

22 AWG SOLID

Nominal insulation thickness, .015".

Alpha No.	No. of Pairs	Nom. Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3706	6	.060"	.51"	$2.21	$1.50	$1.35	$1.26
3712	12	.060"	.62"	3.08	2.19	1.92	1.76
3718	18	.060"	.71"	3.60	2.76	2.40	2.15
3725	25	.060"	.79"	4.73	3.33	2.87	2.70
3750	50	.070"	1.05"	7.25	5.34	4.88	4.35

19 AWG SOLID

Nominal insulation thickness, .015".

3806	6	.060"	.56"	$ 2.76	$1.97	$1.71	$1.50
3812	12	.060"	.70"	3.83	2.78	2.46	2.21
3818	18	.060"	.80"	4.83	3.45	3.14	2.85
3825	25	.060"	.91"	6.62	4.73	4.19	3.83
3850	50	.070"	1.20"	11.07	8.01	7.26	6.62

16 AWG SOLID

Nominal insulation thickness, .020".

3863	3	.060"	.56"	$ 4.14	$ 2.87	$ 2.69	$ 2.45
3864	6	.060"	.69"	5.51	3.66	3.33	3.00
3865	12	.060"	.88"	7.29	5.22	4.73	4.25
3866	18	.070"	1.04"	9.93	7.04	6.47	5.84
3867	25	.070"	1.18"	12.87	9.18	8.36	7.61
3868	50	.080"	1.62"	25.37	18.00	16.34	14.96

DOUBLE JACKET—HEAVY DUTY (FIG. B)

22 AWG SOLID

Nominal insulation thickness, .015". Nominal inner jacket, .047".

Alpha No.	No. of Pairs	Outer Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3906	6	.060"	.56"	$2.91	$2.12	$1.92	$1.76
3912	12	.060"	.67"	4.02	2.85	2.61	2.37
3918	18	.060"	.76"	4.88	3.45	3.14	2.85
3925	25	.060"	.84"	5.55	4.02	3.66	3.33
3950	50	.070"	1.10"	9.03	6.41	5.82	5.28

19 AWG SOLID

Nominal insulation thickness, .015". Nominal inner jacket, .047".

4006	6	.060"	.61"	$ 3.83	$2.70	$2.45	$2.09
4012	12	.060"	.75"	4.88	3.56	3.18	2.85
4018	18	.060"	.85"	5.55	4.02	3.60	3.26
4025	25	.080"	.96"	7.41	5.31	4.83	4.43
4050	50	.070"	1.25"	13.20	9.18	8.36	7.59

MICRO-MINIATURE COAXIAL CABLE— 50, 75, 100 OHM IMPEDANCES (FIG. D)

For computer instrumentation and ultra-compact wiring. Extremely small and flexible coax has high cut-through resistance. Provides uniform characteristic impedance, low losses and low propagation delays. Crosstalk kept to minimum. Center conductor, solid silver-plated copper with 40 micro-inch minimum plating. Aluminized Mylar® shield, 30 AWG. Solid silver-plated copper drain wire, parallel to center conductor. Flame-retardant, blue-colored jacket overall.

Alpha No.	Impedance, Ohms	Conductor AWG	Dielectric Material	Nom. Cable O.D.	Net per 100 Ft.
9500	100	32	Polypropylene*	.080"	$49.07
9475	75	30	Polypropylene*	.065"	49.07
9450	50	32	FEP Teflon®	.40"	49.07

*Cellular polypropylene. ®Reg. DuPont trademarks.

BRAIDING

TINNED COPPER FLAT BRAID (FIG. E) TO MIL SPEC QQ-W-343/5, ASTM-B-33

For shielding insulated wire and cable, bonding and ground straps. For applications requiring extreme flexibility (pigtails, component leads, connecting moving parts, etc). Very fine, soft annealed tinned copper wires, braided and rolled flat. Strand size, 36, except Nos. 1239 thru 1242/4 which are 30 AWG. Also available in spool of 500' except: 1240-1242/4; prices on request.

Width In.	Alpha No.	Net, Spool 1000'	100'	Width In.	Alpha No.	Net per Spool 1000'	100'
.025	1221	$ 75.50	$ 9.08	5/8	1233	$394.46	$ 40.98
1/32	1222	80.75	9.75	3/4	1234	907.55	93.90
1/16	1223	86.18	10.32	1	1235	973.56	100.52
3/32	1224	101.19	11.48	1 3/8	1239	1108.07	113.96
1/8	1229	113.04	12.93	1 1/2	1240	.....	159.66
5/32	1230	125.84	14.09	1 3/4	1241	.....	319.32
1/4	1231	175.61	19.10	2	1242	.....	400.77
3/8	1232	289.56	30.56	3	1242/4	.....	773.16
1/2	1233/2	373.35	38.73				

TINNED COPPER OVAL BRAID (FIG. F)

Woven, tinned copper braid manufactured to a specific inside diameter but, due to its extreme flexibility, cannot maintain its completely round shape and becomes oval. Used as an electrostatic shield to cover a conductor, a series of conductors, cable etc. Specifically constructed and left in its tubular or oval form so that it can easily be slipped over wire, cable, or other components for which shielding is required. Each strand 34 AWG.

Nom. I.D.	Nominal Circ., Mil	Alpha No.	Net per Spool 1000'	500'	100'
1/16"	1192	2132	$ 83.31	$ 40.59	$ 9.08
1 1/64"	4770	2138	209.09	106.19	22.94
3/16"	5724	2140	.....	117.60	25.07
1/4"	6678	2142	.....	140.97	29.81
3/8"	7632	2144	.....	161.24	33.86
1/2"	13356	2146	.....	.....	64.19
5/8"	14264	2148	.....	.....	69.84
1 1/16"	19080	2150	.....	.....	86.18
2 5/32"	20988	2152	.....	.....	94.20

TINNED COPPER TUBULAR BRAID (FIG. F) TO MIL SPEC QQ-B-575

Maximum shielding against electrostatic interference for wires, cables, etc. Woven, tinned copper braid fully round per MIL Spec QQ-B-575. Each strand is soft, drawn, tinned copper wire, 36 AWG except as noted. Self-supporting to maintain the round shape. Shielding coverage 95%.

Nom. I.D.	Alpha No.	Net, Spool 250'	100'	Nom. I.D.	Alpha No.	Net, Spool 100'	50'
1/16"	2160	$15.20	$ 7.02	1/4"	2171	$ 57.74	.....
1/16"	2162	31.37	14.82	5/16"	2171/1†	60.24	.....
1/4"	2163	37.13	17.19	3/8"	2172	59.51	.....
1/4"	2164	49.95	23.09	7/16"	2173†	98.15	.....
3/8"	2166	53.96	24.09	1/2"	2174	81.56	.....
5/16"	2167	96.62	39.15	9/16"	2175†	150.59	.....
11/64"	2168	69.51	30.12	11/16"	2175/1†	230.85	.....
13/64"	2170*	42.68	.....	15/16"	2176	110.40	.....

*Braid 34 AWG. †Braid 30 AWG.

EXTRA LARGE TINNED COPPER TUBULAR BRAID (FIG. E)

Tubular braids manufactured to standards of QQ-B-575 although these sizes are not listed in the specification. Each strand 30 AWG.

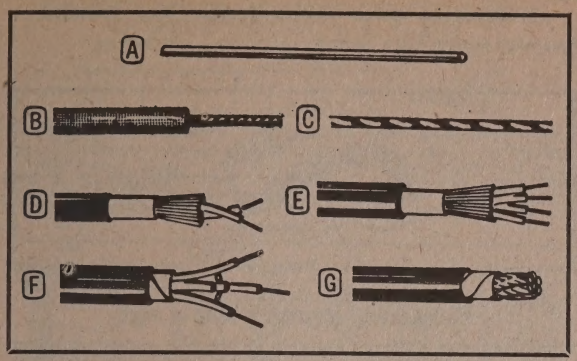
Nom. I.D.	Alpha No.	Net, Spool 100'	50'	Nom. I.D.	Alpha No.	Net, Spool 100'	50'
7/8"	2177	$158.16	$80.75	1 1/4"	2180	$209.91	$106.73
1"	2178	178.49	90.80	1 3/8"	2181	243.74	123.54
1 1/8"	2179	187.01	96.78	1 1/2"	2182	262.08	132.48

CATV, MATV, CCTV COAXIAL CABLE 6/U, 8/U, 11/U, 59/U TYPES (FIG. C)

Designed specifically for commercial and CATV, MATV and CCTV applications. Alpha Nos. 9830 and 9840 available in 500' and 100' spools, prices on request.

Alpha No.	Type	Size*	Dielectric Material	Shield*	Jkt. Material	Nom. O.D.	Nom. Impedance, Ohms	Channel 2	5	13	14	33	Stock Colors	Net per Spool 1000'
9843	6/U	18 Solid BC	Foam PE	Foil	PVC	.242"	75	1.5	1.9	3.1	5.0	7.0	Blk., Wht., Gray	$ 66.66
9846	8/U	13 (7 x 21) BC	Foam PE	BBC	PVC	.407"	50	1.2	1.7	2.5	3.9	5.5	Black Only	253.53
9847	11/U	14 Solid BC	Foam PE	BBC	PE	.405"	75	1.0	1.3	2.1	3.6	4.8	Black Only	273.81
9848	58/U	20 Solid BC	Foam PE	BTC	PVC	.195"	50	4.2	4.7	7.0	10.4	15.3	Black Only	89.39
9830	59/U	22 Solid BCW	Solid PE	BBC	PVC	.242"	75	2.0	2.7	4.5	6.8	10.0	Black Only	84.84
9840	59/U	22 Solid BCW	Foam PE	BBC	PVC	.242"	75	2.2	2.8	4.5	6.0	9.8	Black Only	101.06
9844	59/U	22 Solid BCW	Foam PE	Foil	PVC	.218"	80	1.9	2.6	3.8	6.5	9.1	Blk., Wht., Gray	58.26

***BC**—Bare Copper. **BCW**—Bare Copper Weld. **Foil**—Aluminum/Polyester Tape with 4-28 AWG Tinned Copper Weld drain wires. **BBC**—Braided Bare Copper. **BTC**—Braided Tinned Copper. **Foam PE**—Unicellular Foamed Polyethylene.



BUS BAR TINNED COPPER (FIG. A)

Solid wire for winding of coils, antennas, point-to-point wiring, bus-bar, component leads, ground wire. Pure electrolytic soft, drawn, solid copper annealed and tinned for quick soldering. MIL-W-3861 Type S, QQ-W-343 Type S and ASTM-B-33 specifications.

Cond. Size	Circ. Mil Area	Nom. O.D.	Alpha Number	Net per Spool 1000′	Net per Spool 100′
30AWG	100.5	.010″	299/3	$ 6.74	$ 1.61
28AWG	159.8	.013″	299/2	7.25	1.61
26AWG	254.1	.016″	299/1	8.12	1.68
24AWG	404.0	.020″	299	8.97	1.73
22AWG	642.4	.025″	298	11.04	1.80
20AWG	1022	.033″	297	15.02	2.15
18AWG	1642	.040″	296	21.74	2.87
16AWG	2583	.051″	295	34.29	4.01
14AWG	4107	.065″	286	50.55	6.09
12AWG	6530	.082″	289	75.36	9.15
10AWG	10380	.103″	292	177.75	18.00
8AWG	16510	.129″	292/8	276.15	30.78
6AWG	26250	.162″	292/6	444.44	47.63

TEFLON HOOK-UP WIRE (FIG. B) TYPE E MIL-W-16878D

Stranded silver-plated copper conductor, extruded TFE Teflon§ .010″ thick. **Temperature:** −65° C to +200° C. **Rated:** 600 V. Put-up on spools. **Colors:** 1–19 per Color Table*.

MIL-W Type	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
E-30	30	7/32	.028″	5851	$ 39.45	$ 7.43
E-28	28	7/36	.031″	5852	40.13	7.80
E-26	26	7/34	.035″	5853	45.90	8.62
E-24	24	19/36	.040″	5854	62.70	10.67
E-24	24	7/32	.039″	5854/7	50.93	9.08
E-22	22	19/34	.046″	5855	68.93	11.58
E-22	22	7/30	.045″	5855/7	60.38	10.50
E-20	20	19/32	.054″	5856	83.18	13.42
E-20	20	7/28	.053″	5856/7	79.20	12.50
E-18	18	19/30	.064″	5857	118.95	18.08
E-16	16	19/29	.073″	5858	149.63	22.00

*Per 100′ put-up. 1,000′ put-up prices on request. †Also available to order cut, marked and stripped. §Registered DuPont TM.

ANTENNA-AERIAL WIRE

Nos. 1161 and 1164 recommended especially for ship, short-wave and transmitter antennas where high tensile strength and corrosion resistance is required. Silicon bronze conductor. **Nos. 136 and 112** recommended for short wave and transmitter antennas. Suitable for commercial and amateur use. Easy to install, no "backlash". Bare copper conductor.

Alpha No.	Conductor Size	Conductor Strand	Breaking Strength	Nom. O.D.	Net per Spool 1000′	Net per Spool 100′
1161	12	7/20	650 lbs.	.100″	$258.30	$28.16
1163	10	7/18	1000 lbs.	.122″	407.40	42.92
1164	8	7/16	1600 lbs.	.150″	646.25	67.10
136	16	7/24	.....	.060″	34.68	4.40
112	14	7/22	.....	.075″	56.33	6.44

*STOCK COLORS

Prices listed are for solid colors only, specify. **Striping Charges:** Following striping charges apply for either one, two or three spiral tracers per item in any standard put-up. Plastic and nylon jacketed wire, **$1.50** per 1000′; Teflon wire, **$10.50** per 1000′. Other tracer colors available at extra cost. Write for information.

No.	Color	No.	Color	No.	Color
1	White	8	Orange	15	White/Blue
2	Black	9	Gray	16	White/Brown
3	Red	10	Violet	17	White/Orange
4	Green	11	White/Black	18	White/Gray
5	Yellow	12	White/Red	19	White/Violet
6	Lt. Blue	13	White/Green		
7	Brown	14	White/Yellow		

SERVICE AND POWER CORDS

Rubber Portable Cords, Type SV and SJ. Each conductor stranded bare copper, separator, color coded rubber insulation, cabled with fillers. Tough, black rubber jacket overall. **Neoprene® Portable Cords, Type SVO, SJO and SO.** Each conductor stranded bare copper, separator, color coded, rubber insulation cabled with fillers, separator. Black neoprene jacket overall. Oil, grease, ozone, acid, moisture resistant. Operating temp., −20° C to +60° C.

UL Type	Type of Usage	Voltage
SV, SVO	Light appliances such as fans, mixers, office equipment	300 V
SJ, SJO	Medium appliances, small motors, speakers, tools, amplifiers	300 V
SO	Heavy duty equipment, generators, heaters, tools, air-conditioners	600 V

RUBBER PORTABLE CORD, 300 VOLT STATIONARY SERVICE

Nos. 1951 and 1951/3 are **SV Type,** balance, **SJ Type.** Nom. jacket thickness, .032″.

Alpha No.	Conductor No.	Conductor Size	Insul. Thickness	Cur. Cap., Amps	Nom. O.D.	Net per Spool 250′	Net per Spool 100′	Net per Spool 50′
1951	2	18	.016″	7	.250″	$32.63	$14.24	$ 8.04
1951/3	3	18	.016″	7	.260″	37.47	16.37	9.23
1952	2	18	.032″	7	.305″	37.26	16.17	8.78
1952/3	3	18	.032″	7	.330″	54.48	22.95	12.24
1953	2	16	.032″	10	.330″	44.42	18.80	9.95
1953/3	3	16	.032″	10	.360″	69.15	28.70	14.87

NEOPRENE PORTABLE CORD, 300 VOLT STATIONARY SERVICE

No. 1931 is **SVO Type,** balance, **SJO.** Nom. jkt. thickness, .032″.

Alpha No.	Conductor No.	Conductor Size	Insul. Thickness	Cur. Cap., Amps	Nom. O.D.	Net per Spool 250′	Net per Spool 100′	Net per Spool 50′
1931	2	18	.016″	7	.250″	$33.62	$14.58	$ 7.92
1932	2	18	.032″	7	.305″	42.83	18.15	9.50
1932/3	3	18	.032″	7	.330″	53.13	24.08	12.20
1933	2	16	.032″	10	.330″	51.96	23.55	11.93
1933/3	3	16	.032″	10	.360″	68.31	29.21	15.02

NEOPRENE PORTABLE CORD, 600 VOLT SO TYPE

Alpha Nos. 1934 thru 1935/4 have nominal insulation thickness of .030″; nominal jacket thickness, .060″. **Nos. 1936 thru 1936/4** have nominal insulation thickness of .045″, nominal jacket thickness, .075″. Balance, insulation thickness, .045″, jacket thickness, .090″.

Alpha No.	Conductor No.	Conductor Size	Cur. Carrying Capac., Amps	Nom. O.D.	Net per Spool 250′	Net per Spool 100′	Net per Spool 50′
1934	2	18	7	.390″	$ 69.15	$ 29.70	$15.38
1934/3	3	18	7	.405″	79.05	33.51	17.24
1934/4	4	18	6	.435″	103.49	42.60	21.83
1935	2	16	10	.405″	80.37	34.26	17.69
1935/3	3	16	10	.430″	98.82	41.39	21.47
1935/4	4	16	8	.485″	127.37	54.54	28.25
1936	2	14	15	.530″	126.32	52.56	27.29
1936/3	3	14	15	.560″	162.29	67.07	34.82
1936/4	4	14	12	.605″	183.09	76.19	39.14
1937	2	12	20	.600″	176.54	72.90	37.56
1937/3	3	12	20	.635″	215.63	88.44	45.33
1937/4	4	12	16	.665″	260.34	106.32	54.26
1938	2	10	25	.640″	229.05	93.99	48.45
1938/3	3	10	25	.690″	284.30	120.56	62.57
1938/4	4	10	20	.745″	355.52	149.04	76.82

LOW LEAKAGE MEDICAL SAFETY CABLE UL TYPE SJT

Specially designed low leakage power cable reduces danger of electrical shock in medical and dental applications. Utilizes special low dielectric constant fillers and core for wider conductor spacing. Each conductor stranded and annealed copper. Insulation color coded FEP Teflon®. Paper tape wrap over core with red PVC jacket overall. Maximum leakage, 10 ft. length at 120 V is 6 μA to green, 16 μA through jacket. Three conductor, black, white, green. Nominal insulation thickness, .031″; jacket thickness, .050″.

Alpha No.	Conductor Size, AWG	Nom. O.D.	Net per Spool 100′	Net per Spool 250′	Net per Spool 500′	Net per Spool 1000′
1980	18	.430″	$219.81	$537.72	$1056.29	$2012.21
1981	16	.475″	251.79	616.95	1209.48	2303.78

NEOPRENE WELDING CABLE

Lightweight, flexible cables with high resistance to abrasion, impact, flexing and twisting. Stranded bare copper conductor, tape wrap, black Neoprene® rubber insulation. Sizes of cable recommended by NEMA Electric Welding Section for standard hand welding equipment based on lengths up to 90 ft. (i.e., 45 ft. of welding cable and 45 ft. of return cable): 100 A welder, 4 AWG; 150 A welder, 3 AWG; 200 A welder, 2 AWG; 300 A welder, 1/0 AWG; 400 A welder, 2/0 AWG; 500 A welder, 2/0 AWG; 600 A welder, 3/0 AWG.

Alpha No.	Conductor Size	Conductor Strand	Nom. O.D. Dia.	Cur. Cap., Amps	Net per Foot 25–99	Net per Foot 100–499	Net per Foot 500–999	Net per Foot 1000 Up
6112	6	266/30	0.38″	75	$1.80	$1.29	$1.17	$1.11
6113	4	420/30	0.43″	100	2.40	1.71	1.59	1.49
6114	3	532/30	0.43″	150	3.17	2.28	2.07	1.97
6115	2	665/30	0.51″	200	3.77	2.70	2.46	2.37
6116	1	833/30	0.54″	250	4.49	3.35	3.09	2.97
6117	1/0	1057/30	0.61″	300	5.45	3.83	3.48	3.33
6118	2/0	1317/30	0.67″	375	6.62	4.77	4.29	4.10
6119	3/0	1622/30	0.74″	450	8.36	6.15	5.61	5.31
6120	4/0	2109/30	0.86″	550	9.96	7.56	6.87	6.50

RETRACTILE COIL CORDS; LAMP, REPLACEMENT & EXTENSION CORDS

ALPHA WIRE

RETRACTILE COIL POWER CORDS

Neoprene jacket. Long extension. UL Approved.

RETRACTED LENGTHS 2 AND 4 FEET

Quality multi-conductor has stranded tinned copper conductors, rubber insulation and weather-resistant neoprene jacket, overall. Retracted length 2 ft. has extended length 12 ft.; retracted length 4 ft. has extended length 25 ft. Temp., −20° C to +60° C. **Conductors' Color Code:** 1 = Black; 2 = White; 3 = Green; 4 = Red.

Conductor			UL	Rating		Alpha	Net Ea., Lgth.	
No.	Size	Strand	Type	Amps	Volts	No.†	2 Ft.	4 Ft.
2	18	41/34	SVO	7	300	660/2	$ 9.11	$16.40
3	18	41/34	SVO	7	300	760/2	13.67	24.89
2	18	41/34	SJO	7	300	661/2	9.99	18.15
3	18	41/34	SJO	7	300	662/2	12.74	23.70
4	18	41/34	SJO	5.6*	300	663/2	14.96	28.05
2	16	65/34	SJO	10	300	664/2	12.42	23.15
3	16	65/34	SJO	10	300	665/2	16.10	30.42
4	16	65/34	SJO	8*	300	666/2	19.89	36.84
3	16	41/34	SO	10	600	670/2	22.25	41.54
4	16	65/34	SO	8*	600	671/2	24.57	46.26
3	14	41/30	SO	15	600	673/2	27.51	52.08
4	14	41/30	SO	12*	600	674/2	32.93	59.99

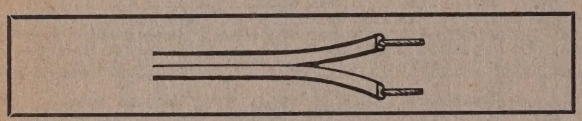
*For 4 conductors carrying current; if one lead is used as ground, amp rating is same as 2- and 3-conductor cords. †No. shown is for 2-ft. length; for 4-ft. length change suffix to /4 (example: 660/4).

POWER CORD SETS

Same as above, but with sturdy, molded male plug on one end; stripped on other end. All are 18″ long, retracted; 7½ ft. long, extended. Rated 300 volts. **Conductors' Color Code:** 1 = Black; 2 = White; 3 = Green.

Conductor			UL	Coil	Alpha	Net
No.	Size	Strand	Type	O.D., In.	Number	Each
2	18	41/34	SVO	7/8	654	$ 8.19
3	18	41/34	SJO	1 3/8	656	15.54
2	16	65/34	SJO	1 3/8	657	11.12
3	16	65/34	SJO	1 7/16	658	16.40

E-Z-STRIP LAMP CORDS



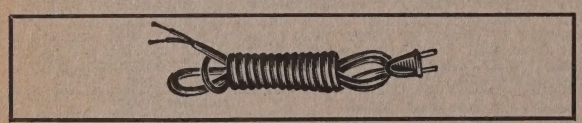
Parallel conductors, stranded extra flexible bare copper, color-coded insulation. Slit in jacket permits "E-Z" separation. For small instruments and appliances. **Temperature:** −20° C to +60° C. **Rating:** 300 V. UL Approved.

Conductor			Insul.	UL	Nominal		Alpha
No.	Size	Strand	Type	Type	Wall	O.D.	No.
2	18	41/34	Plastic	SPT-1	.032″	.215″ x .115″	1977
2	18	41/34	Plastic	SPT-2	.045″	.285″ x .150″	1978
2	18	41/34	Plastic	SPT-1	.032″	.215″ x .115″	1979

Alpha No.	Stock Colors*	Net per Spool			
		100 Ft.	250 Ft.	500 Ft.	1000 Ft.
1977	A, B, C, D, E	$ 7.57	$14.82	$30.14	$60.23
1978	Brown only	13.95	29.49	59.00	112.95
1979	Clear only	10.70	22.59	43.28	84.09

*Specify color: A, Brown; B, Black; C, White; D, Gray; E, Tan.

REPLACEMENT CORD SETS



Types SV and SVT for small tools, business machines and light duty equipment. Types SJ and SJT for heavier duty tools, electric saws, small motors, grinders, saws and sanders. Conductor bare copper, vinyl or rubber color coded insulation, cotton fillers, rubber or vinyl jacket overall. One end fitted with molded two or three conductor male plug; other end jacket stripped back 1½″ with 5/8″ bare conductors exposed. Available in individual boxes or coiled and tied in bulk packages. Prices for bulk packages of 10 or 25 available on request.

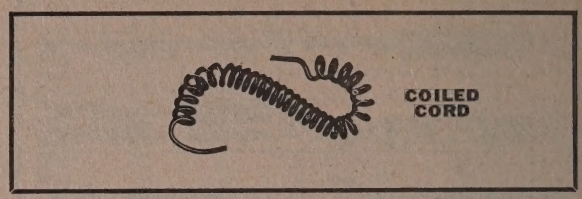
UL TYPES SV, SVT

Alpha No.	UL Type	Conductor No.	Size	Strand	Lgth., Ft.	Nom. O.D.	Net Each
600	SV	2	18	41/34	6	.245″	$1.67
602	SV	2	18	41/34	9	.245″	1.97
775	SV	3	18	41/34	6	.267″	1.44
776	SV	3	18	41/34	8	.267″	1.61
777*	ST	3	18	41/34	6	.257″	1.29
UL TYPES SJ, SJT							
615	SJ	3	18	16/30	6	.330″	$2.12
778	SJ	3	18	16/30	8	.330″	1.71
616	SJ	3	18	16/30	9	.330″	2.42
779*	SJT	3	18	16/30	8	.330″	1.50
618	SJ	3	16	26/30	6	.365″	3.02

*Cord material and color, gray vinyl; balance, black rubber.

RETRACTILE COIL COMMUNICATION CORDS

Neoprene jacket. Long extension.



RETRACTED LENGTHS 2 AND 4 FEET

Multi-conductor with extra flexible, tinned, soft cadmium copper with high flex life. Rated 1 amp, 120 volts. Units 2 ft. retracted are 12 ft. extended; 4 ft. retracted, 25 ft. extended. Some types (see table) have cadmium copper shield over individual conductors (rated 75 volts); shield can be pigtailed for direct solder connection. **Conductors' Color Code:** 1 = Black; 2 = White; 3 = Red; 4 = Green; 5 = Blue; 6 = Yellow; 7 = Brown.

Conductor			Shielded	Coil	Alpha	Net Ea., Lgth.	
No.	Size	Strand	Cond.	O.D., In.	No.*	2 Ft.	4 Ft.
2	23	21/36	No	3/4	680/2	$ 8.06	$14.36
3	23	21/36	No	13/16	681/2	9.99	16.97
4	23	21/36	No	15/16	682/2	11.27	19.61
5	23	21/36	No	1 1/16	683/2	15.33	26.34
6	23	21/36	No	1 1/8	684/2	18.15	34.62
7	23	21/36	No	1 1/4	685/2	19.77	37.50
1	24	41/40	Yes†	5/8	690/2	12.41	17.46
2	1–23	21/36	No‡	7/8	692/2	16.88	30.80
	1–24	41/40	Yes†				
3	2–23	21/36	No§	7/8	694/2	23.82	44.84
	1–24	41/40	Yes†				
4	2–23	21/36	No§	1	696/2	26.94	50.93
	2–24	41/40	Yes#				

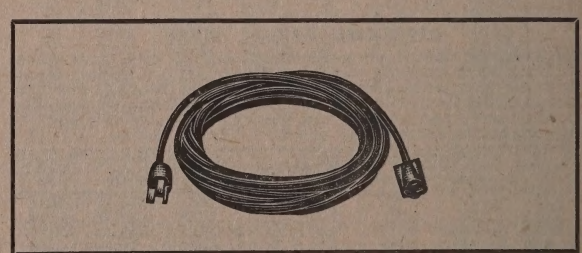
*Number shown is for 2-ft. length; for 4-ft., change suffix to /4 (i.e., 680/4). **Conductors' Color Code:** †White; ‡Black; §Black, Red; #White, Green.

MINIATURE COMMUNICATION COIL CORDS

Small diameter plastic cord with stranded tinned copper conductors for maximum flexibility. PVC insulated and jacketed. For low voltage power and communication equipment with space and weight limitations. Rated ½ amp, 100 volts. Retracted length, 2 ft.; extends approx. 10 ft. With 6″ straight lead on each end. **Conductors' Color Code:** 1 = Black; 2 = White; 3 = Green; 4 = Red.

Conductor			Shielded	Coil	Alpha	Net
No.	Size	Strand		O.D., In.	No.	Each
2	28	19/40	No	1/2	651	$7.98
4	28	19/40	No	1/2	652	9.36

EXTENSION CORD SETS



Flexible multi-conductor, black rubber cord with black molded plastic male and female plug on either end. Three-conductor type for use where one conductor requires grounding. UL and CSA Approved.

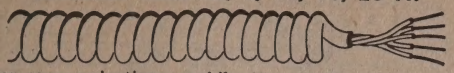
Conductor			UL	Nom.	Lgth.,	Alpha	Net
No.	Size	Strand	Type	O.D.	Ft.	No.	Each
2	18	41/34	SV	.245″	6	620	$ 1.88
2	16	26/30	SJ	.325″	10	628*	2.87
3	18	16/30	SJ	.330″	10	636	3.51
3	18	16/30	SJ	.330″	25	638	6.89
3	16	26/30	SJ	.365″	15	640	6.47
3	16	26/30	SJ	.365″	25	642	12.39
3	16	26/30	SJ	.365″	50	644	19.31

*Rated 10 amps; all others, 7 amps.

RETRACTILE CORDS, TEST LEAD WIRE, FIT® SHRINKABLE TUBING

PVC RETRACTILE COMMUNICATION CORDS

RETRACTED LENGTHS, 1, 2, 3, 4 FT.
EXTENDED LENGTHS, 6, 12, 18, 25 FT.



Ideal for communications, mobile, Ham radio equipment, headsets. Eliminates hazards and inconveniences caused by tangled straight cords. Plastic retractile coil cords are durable and long lasting. Each conductor stranded tinned copper PVC insulation and PVC jacket overall. Operating temp., −20° C to +60° C. 23 AWG conductor, 31/36 strands, 120 volts, 1 amp.

UNSHIELDED

Alpha No.†	Cond. No.	Nominal Coil O.D.	Nominal Cord O.D.	Net Each, Length* 1 Ft.	2 Ft.	3 Ft.	4 Ft.
702	2	¾″	.200″	$5.09	$ 8.84	$12.17	$15.42
703	3	¾″	.210″	5.51	9.92	13.76	17.34
704	4	1 3/16″	.240″	6.26	11.42	15.84	20.00
705	5	1″	.285″	7.34	13.01	17.84	22.67
706	6	1⅛″	.305″	9.17	16.67	22.08	27.84
707	7	1¼″	.320″	9.99	18.26	24.33	30.42
708	8	1 3/32″	.360″	.....	.....	.....	43.02
710	10	1 3/32″	.380″	.....	.....	.....	50.25
712	12	1 7/32″	.410″	.....	.....	.....	68.13
715	15	1 9/32″	.470″	.....	.....	.....	74.22

*Prices shown are for 1 to 9 quantity. For quantity prices 10 and up please write for information. †Number shown is for 1-ft. length; for 2-ft. length, add /2 to number, for 3-ft. add /3, for 4-ft. add /4 (i.e., 702/2, 702/3, 702/4).

COLOR CODE OF CONDUCTORS

No.	Color	No.	Color	No.	Color	No.	Color
1	Black	5	Blue	9	White/Black	13	White/Yellow
2	White	6	Yellow	10	White/Red	14	White/Brown
3	Red	7	Brown	11	White/Green	15	White/Orange
4	Green	8	Orange	12	White/Blue		

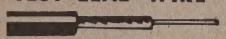
SHIELDED

Braided tinned copper shield.

Alpha No.	Std. Put-Up	Cond. No.	Coil O.D.	Shielding	Cond. Color	Net per Put-Up 1-9*
720/2	2 ft.	1	5/8″	1 Shielded	White	$16.67
722/2	2 ft.	2	7/8″	2 Shielded	White, Blk.	31.25
723/2	2 ft.	3	1″	2 Unshielded 1 Shielded	Blk., Red White	26.67
724/2	2 ft.	4	1¼″	2 Unshielded 2 Shielded	Red, Grn. White, Blk.	39.59
720/4	4 ft.	1	5/8″	1 Shielded	White	34.17
722/4	4 ft.	2	7/8″	2 Shielded	White, Blk.	60.17
723/4	4 ft.	3	1″	2 Unshielded 1 Shielded	Blk., Red White	50.00
724/4	4 ft.	4	1¼″	2 Unshielded 2 Shielded	Red, Grn. White, Blk.	77.51

*Quantity prices for 10 and up available on request.

TEST LEAD WIRE

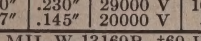


Used as test leads in analyzers, oscillators, multi-meters and test apparatus where extra flexible insulated wire is required. Heavy duty type designed for television, therapeutic equipment, analyzers, oscillators, etc. Single conductor, extra flexible stranded tinned soft annealed copper, separator, color coded rubber insulation. Smooth satin finish. Operating temp., −20° C to +60° C. Conductor size for **Numbers 1632** and **1633** is 20, balance, 18. Stock colors black and red, except **No. 1639**, black, red, green.

Alpha No.	Cond. Strand	Wall Thickness	Nom. O.D.	Voltage Breakdown†	Working Voltage	Net per Spool* 1000′	100′
1632	41/36	.040″	.125″	6000 V	1500 V	$45.02	$5.94
1635	41/36	.047″	.140″	12000 V	3000 V	46.79	6.18
1636	65/36	.045″	.140″	20000 V	5000 V	48.45	6.56
1638	65/36	.090″	.230″	29000 V	10000 V	73.80	8.78
1639*	65/36	.047″	.145″	20000 V	5000 V	55.20	7.28

*Military type spec MIL-W-13169B. †60 Hz. •Also available in 500′ spools, prices on request.

RETRACTILE TEST LEAD WIRE



RETRACTED LENGTH 12″, EXTENDED LENGTH 6 FT.

High grade quality rubber insulation for maximum flex life extruded over a single conductor of extra flexible tinned copper which gives long life. Available in 12″ retracted length with 6″ straight lead on each end. Cord extends to 6 feet. Black or red. Rated 5,000 volts.

Alpha No.	Conductor Size	Conductor Strand	Ampere Rating	Nominal Coil O.D.	Nominal Cord O.D.	Net/ Foot
650	20	41/36	4	¾″	.165″	$2.36

MEASURING AND COILING MACHINE

Easy to use, hand operated machine for measuring and dispensing small coils of wire from larger spools or coils. Consists of heavy duty measuring unit with capacity to 10,000 feet. Digital register accurately indicates feet and inches. Measuring unit has spring-loaded rollers that set for proper tension by adjusting control knob. Capacity up to one inch O.D. wire and cable. Wire winder has adjustable arms. Dispensing reel holds all diameters of spools, reels or coils.

Alpha No. WMD-1—Net Each..... **$356.71**

CABLE CLAMPS FOR WIRE, CABLE, TUBING DURABLE, LIGHTWEIGHT, NON-ABRASIVE

ETHYL CELLULOSE CLAMPS −65° F TO +175° F

All-purpose clamp has excellent corrosion, moisture and shock resistant properties. Specially treated with ultra-violet inhibitor compound for long lasting outdoor as well as inside applications.

NYLON CLAMPS −60° F TO +175° F MIL-C-21565 (NAS), MIL-P-17091-B, MIL-P-20693, MIL-STD-24E

For high temperature applications, or for surfaces subject to vibration or mechanical stress. Inside surfaces are smooth with rounded edges to prevent jacket chafing and damage. Clamp thickness, NCL-⅛ and NCL-½, .050″; balance, .060″. Clamp width, NCL-⅛ and NCL-½, ⅜″; balance, ½″. Distance from clamp edge to mounting center, 7/32″.

Alpha No. Cellulose	Net Each, Lots 1000	100	Alpha No. Nylon	Net Each, Lots 1000	100	I.D. (Closed)
CCL-⅛	$23.54	$2.71	NCL-⅛	$20.00	$2.30	.115″
CCL-3/16	23.54	2.71	NCL-3/16	21.25	2.44	.172″
CCL-¼	23.54	2.71	NCL-¼	22.08	2.54	.234″
CCL-5/16	26.25	3.02	NCL-5/16	23.33	2.68	.297″
CCL-⅜	28.33	3.26	NCL-⅜	24.38	2.80	.359″
CCL-7/16	30.21	3.47	NCL-7/16	25.21	2.90	.422″
CCL-½	31.25	3.59	NCL-½	26.47	3.04	.484″
CCL-9/16	36.46	4.19	NCL-9/16	38.54	4.43	.547″
CCL-⅝	38.55	4.43	NCL-⅝	40.83	4.70	.609″
CCL-11/16	46.88	5.39	NCL-11/16	.....	.....	.672″
CCL-¾	51.45	5.92	NCL-¾	42.72	4.91	.734″
CCL-⅞	58.33	6.71	NCL-⅞	44.79	5.15	.859″
CCL-1	63.54	7.31	NCL-1	51.88	5.97	.984″
CCL-1⅛	72.92	8.39	NCL-1⅛	56.25	6.47	1.102″
CCL-1¼	76.05	8.75	NCL-1¼	72.92	8.39	1.227″
CCL-1⅜	79.17	9.10	NCL-1⅜	78.13	8.99	1.352″
CCL-1½	83.33	9.58	NCL-1½	83.13	9.56	1.477″

FIT-400 FEP. TEFLON* HEAT SHRINKABLE TUBING

Requires less heat. Operating temperature, 400° C. Shrinkage ratio, 2:1 (50% shrinkage). Designed for use with heat-sensitive components, solid state devices, solder joints, FEP tubing is applied as a natural, transparent tubing and requires heat of 200° F to 350° F to shrink. Stock color, natural.

Alpha No.	Size, AWG	Expanded Inside Dia.	Recovered Inside Dia.	Nom. Wall Thickness	Net/100′ Pkg.
FIT-400-24	24	.032″	.027″	.008″	$ 44.20
FIT-400-22	22	.037″	.032″	.008″	46.24
FIT-400-20	20	.046″	.039″	.008″	48.22
FIT-400-18	18	.061″	.049″	.008″	50.27
FIT-400-16	16	.076″	.061″	.009″	56.27
FIT-400-14	14	.093″	.072″	.009″	58.29
FIT-400-12	12	.116″	.089″	.009″	60.29
FIT-400-10	10	.142″	.114″	.010″	65.29
FIT-400-9	9	.159″	.124″	.010″	89.22
FIT-400-8	8	.181″	.143″	.010″	93.42
FIT-400-7	7	.198″	.158″	.011″	110.73
FIT-400-6	6	.227″	.180″	.011″	116.18
FIT-400-5	5	.249″	.198″	.011″	121.56
FIT-400-4	4	.292″	.226″	.011″	128.42
FIT-400-3	3	.312″	.249″	.011″	149.51
FIT-400-2	2	.367″	.280″	.012″	160.13
FIT-400-1	1	.400″	.311″	.012″	171.40
FIT-400-0	0	.442″	.349″	.012″	190.49

*Registered Du Pont trademark.

PACKAGED ASSORTMENTS IN 6″ LENGTHS

Alpha No.	Tubing Size, Range	No. Lengths per Box	Net per 100′ Pkg.
FIT-400 MS-1	400-24–400-9	18	$3.80
FIT-400 MS-2	400-8–400-0	18	9.62

FIT-521 SURFACE IRRADIATED POLYOLEFIN TERMINAL SLEEVES SHRINKS AND MELTS

Flame-retardant polyolefin tubing selectively cross-linked. When heat of 135° C is applied, inner wall melts while outer wall shrinks down. Terminal becomes completely encapsulated and insulated in a hard, tough molding. One size fits most applications. 4½ to 1 shrinkage ratio. Black only. Fungus, solvent, oil and water resistant. Tensile strength, 1500 psi. Low temperature flex, no cracking at −55° C. Min. expanded I.D. as supplied, .315″. Max. recovered I.D., .070″. Longitudinal shrinkage, 15% max. Flammability, ASTMD-876.

Alpha No.*	Length	No. of Lengths	Total Footage	Net Each
FIT-521	4 ft.	25	100 ft.	$157.08
FIT-521	½ in.	600	25 ft.	67.02
FIT-521	1 in.	300	25 ft.	53.17

*Specify length required.

—WHAT IS ALPHA FIT TUBING?—
See next page for description of this method of insulating and jacketing wire and cable.

FIT-105 POLYVINYLCHLORIDE TUBING

Extra-flexible tubing, ideal for cable jackets. Conforms to MIL-I-23053/2. High flexibility, strength and 50% shrinkage make it suitable for insulating components and cables with wide shape and size variations. **Shrinkage Temp.:** Approx. 347° F (175° C). **Operating Temp.:** 105° C, continuous. **Tensile Strength:** 1800 psi, min. **Elongation:** 200% ultimate min. **Low Temp. Flexibility:** −20° F. **Dielectric Strength:** 750 V/mil, minimum. **Longitudinal Shrinkage:** 10%. **Environment Resistance:** Inert to fungus; excellent resistance to fuel, oil, hydraulic fluid, solvents, acids and alkalis. Self-extinguishing to flame; non-corrosive. Poor resistance to soldering irons. **Standard Put-Up:** Continuous lengths and 6″ lengths. **Color:** Black.

Alpha No. FIT-	Size, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	Net Price per Pkg. of 25′	100′	200′
105-3/64″	.046	.023	.020	$ 4.70	$15.44	$67.84‡
105-1/16″	.062	.031	.020	4.97	16.32	71.91‡
105-3/32″	.093	.046	.020	5.63	18.58	36.12
105-1/8″	.125	.062	.025	5.94	19.90	38.80
105-3/16″	.187	.093	.025	7.14	24.10	47.16
105-1/4″	.250	.125	.025	8.77	30.06	59.10
105-3/8″	.375	.187	.030	9.70	33.20	65.36
105-1/2″	.500	.250	.030	10.90	37.02	.....
105-3/4″	.775	.375	.035	14.48	49.86	.....
105-1″	1.000	.500	.040	20.41	71.34	.....
105-1 1/2″	1.500	.750	.045	40.97	123.58	.....
105-2″	2.000	1.000	.050	20.86§	101.09#	.....

*Before shrinking. †After shrinking. ‡Pkg. of 500′. §Pkg. of 10 available at $13.86. #Pkg. of 50.

PACKAGED ASSORTMENTS IN 6″ LENGTHS

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-105-MS1	3/64″–1/4″ (6 sizes)	10 per size (60 total)	$ 6.49
FIT-105-MS2	3/8″–1″ (4 sizes)	10 per size (40 total)	13.00
FIT-105-MS3	1 1/2″ and 2″ only	7 per size (14 total)	11.35

FIT-221 IRRADIATED POLYOLEFIN TUBING

Simple-to-use, all-purpose extruded tubing gives tight mechanical bond with thermal stability. Controlled shrinkage to correct predetermined size occurs in 7 seconds at 275° to 300° F, beginning at a slower rate at 235° F. Shrinks 50% (2:1 ratio) with only 5% maximum longitudinal shrinkage. Will not cold-flow or melt, but retains form stability throughout its temperature range. Clear tubing remains transparent over its full operating range, −67° F to 275° F. Though high temperature, material is flammable; will not burn, however, when shrunk over flame-resistant on non-flammable components. **Operating Temperature:** −55° C to +135° C continuous. **Tensile Strength:** 2000 psi min. **Elongation:** 200% min., ultimate. **Dielectric Strength:** 500 volts/mil, min. **Dielectric Constant:** 2.9 max. **Environment Resistance:** Will not support fungus. Non-corrosive. Max water absorption, 0.6%. Excellent resistance to fuel, oil, acids, alkalis and solvents. (Tested to Bell Labs tests.) **Colors:** Specify clear, black, white, red, yellow or blue when ordering.

Alpha No. FIT-	Size, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	4 Ft. Lengths Std. Pkg.	Pkg. Net	6″ Lengths Std. Pkg.	Pkg. Net
221-3/64″	.046	.023	.016	100′	$21.40	20′	$5.93
221-1/16″	.063	.031	.017	100′	22.50	18′	5.93
221-3/32″	.093	.046	.020	100′	25.95	16′	5.93
221-1/8″	.125	.062	.020	100′	27.70	14′	5.93
221-3/16″	.187	.093	.020	100′	33.80	12′	5.93
221-1/4″	.250	.125	.025	100′	42.40	10′	5.93
221-3/8″	.375	.187	.025	100′	46.90	8′	5.93
221-1/2″	.500	.250	.025	20′	53.40	7′	5.93
221-3/4″	.750	.375	.030	20′	71.15	6′	5.93
221-1″	1.000	.500	.035	20′	99.65	4′	5.93
221-1 1/2″	1.500	.750	.040	20′	164.25	2.5′	5.93
221-2″	2.000	1.000	.045	20′	226.75	1.5′	5.93
221-3″	3.000	1.500	.050	8′	359.70	1′	5.93
221-4″	4.000	2.000	.055	8′	523.95	.5′	5.93

PACKAGED ASSORTMENTS IN 6″ LENGTHS

Assorted, standard colors and sizes in 6″ lengths, all identified.

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-221-MS1	3/64″ thru 3/16″ (5 sizes)	6 per size (30 total)	$ 6.62
FIT-221-MS2	1/4″ thru 3/4″ (4 sizes)	4 per size (16 total)	13.23
FIT-221-MS3	1″ thru 4″ (5 sizes)	2 per size (10 total)	11.58

FIT-350 IRRADIATED KYNAR‡ TUBING

High-temperature, thin-wall tubing with excellent cut-through and abrasion resistance. Semi-rigid, polyvinylidene fluoride. Non-flammable; shrinkage ratio, 2:1 (50%); high dielectric strength. Supplied in clear only. Shrinks to half size at 175°C; forms permanent mechanical bond. Operates at temperatures from −55° C to +175° C; withstands intermittent heat shock to 350° C.

Alpha No. FIT-	Dimensions, Inches Min. I.D.*	Recov. I.D.†	Wall Th.	4 Ft. Lengths Std. Pkg.	Pkg. Net	6 In. Lengths Std. Pkg.	Pkg. Net
350-3/64″	.046	.023	.010	100′	$39.86	16′	$6.73
350-1/16″	.063	.031	.010	100′	43.44	14′	6.73
350-3/32″	.093	.046	.010	100′	52.08	12′	6.73
350-1/8″	.125	.062	.010	100′	56.86	10′	6.73
350-3/16″	.187	.093	.010	100′	88.50	8′	6.73
350-1/4″	.250	.125	.012	100′	111.34	6′	6.73
350-3/8″	.375	.187	.012	100′	146.42	4′	6.73
350-1/2″	.500	.250	.012	20′	48.36	2′	6.73
350-3/4″	.750	.375	.017	20′	88.98	1′	6.73
350-1″	1.000	.500	.019	20′	163.58	.5′	6.73

—WHAT IS ALPHA FIT TUBING?—

This concept in insulating and jacketing saves time and money and insures a better job. The user simply fits an expanded piece of FIT Tubing over the wire, cable, component or termination to be insulated, then uses heat to shrink it down to form a permanent, form-fitting seal. This expanded FIT Tubing eliminates forcing, covers irregular shapes and forms a skin-tight band. The irradiation process improves the properties of polymer tubing: Irradiated, cross-linked polymers will not flow at elevated temperatures; they are more resistant to chemical action; they are completely stress-crack resistant; longitudinal shrinkage is controlled and never exceeds 10%.

FIT-295 POLYOLEFIN SEMI-RIGID TUBING

Maximum strength at stress points; extremely strong, abrasion-resistant extruded tubing with heavy wall; good stability. Shrinkage 2:1 (50%) gives wide versatility. High temperature capability, though inflammable. **Shrinkage Temp.:** Approx. 275° F (135° C). **Operating Temp.:** 135° C, continuous. **Tensile Strength:** 2500 PSI, min. **Elongation:** 200% ultimate min. **Low Temp. Flexibility:** −67° F. **Dielectric Strength:** 500 V/mil, min. **Dielectric Constant:** 2.7. **Volume Resistance:** 10^{16} ohm/cm. **Environment Resistance:** Inert to fungus. Excellent resistance to fuel, oil, hydraulic fluid, solvents, acids and alkalis. Non-corrosive. Excellent resistance to soldering irons. No cracks or splits with heat aging 175° C (347° F) for 168 hours. **Standard Put-Up:** 4 ft. (prices given are per 100′) and 6″ lengths. **Colors:** Available in clear (specify) or color as indicated in table below.

Alpha No. FIT-	Clear or Color	Size, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	4 Ft. Lgths. Std. Pkg.	Pkg. Net	6″ Lengths Std. Pkg.	Pkg. Net
295-3/64″	Yellow	.046	.023	.020	100′	$27.20	20′	$6.80
295-1/16″	White	.063	.032	.020	100′	28.53	18′	6.80
295-3/32″	Blue	.093	.045	.020	100′	32.84	16′	6.80
295-1/8″	Red	.125	.063	.020	100′	35.16	14′	6.80
295-3/16″	Green	.187	.093	.025	100′	42.96	12′	6.80
295-1/4″	Slate	.250	.125	.025	100′	53.56	10′	6.80
295-3/8″	Brown	.375	.187	.030	100′	59.53	8′	6.80
295-1/2″	White	.500	.250	.030	20′	13.49	7′	6.80

PACKAGED ASSORTMENT IN 6″ LENGTHS

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-295-MS1	3/64″–1/2″ (8 sizes)	(40 total)	$6.80

FIT-300 IRRADIATED POLYOLEFIN TUBING

OUTER WALL SHRINKS . . . INNER WALL MELTS

Surface irradiated tubing has been developed to answer the need for easy-to-use, permanent encapsulation and jacketing material. Because only the outer wall of this tubing is irradiated, when heat is applied, only this outer wall shrinks. The inner wall, instead of shrinking, melts and the viscous plastic released by the heat, encapsulates the wire or component placed in the tubing. The pressure created by the outer wall shrinkage forces the melted plastic into every orifice, eliminating voids and resulting, when cooled, in a solid, homogenous molding. Alpha HG-1 hot air gun is recommended for heating tubing. However, excellent results may be achieved by use of an oven, hot liquids, soldering iron or even the flame of a match. **Shrinking and Melting Temperature:** 275° F (135° C). **Operating Temperature:** −55° C to +110° C. **Tensile Strength:** 2000 psi. **Elongation:** 400%. **Dielectric Strength:** 1100 V/mil. **Volume Resistance:** 10^{16} ohm/cm.

Alpha No. FIT-	Stock Color	Size, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	4 Ft. Lgths. Std. Net	Pkg. Net	6″ Lgth. Std. Pkg.	Pkg. Net
300-1/8″	Brown	.125	.023	.038	100′	$ 76.72	7′	$7.04
300-3/16″	Gray	.187	.060	.043	100′	93.74	6′	7.04
300-1/4″	White	.250	.080	.047	100′	116.72	5′	7.04
300-3/8″	Red	.375	.135	.050	100′	130.00	4′	7.04
300-1/2″	Blue	.500	.195	.055	20′	34.07	3′	7.04
300-3/4″	Yellow	.750	.313	.065	20′	52.60	2′	7.04
300-3/10″§	Blue	.300	.050	1.00	100′	296.18	2′	7.04

FIT-500 SHRINKABLE TEFLON TUBING

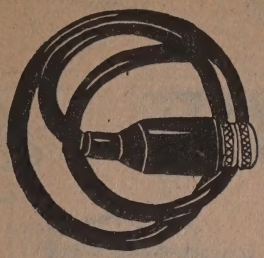
FIT-500 shrinkable tubing forms a tight, flexible protective covering for wires and electronic components; it is recommended for use as a mechanical shield and for friction-proofing. Resists chemical and corrosive agents; is non-burning, non-corrosive. Electrical characteristics remain stable throughout electrical range. It shrinks to approximately 65% of its supplied dia. at a temperature of 327° C; longitudinal shrinkage is less than 10%. **Operating Temperature:** −67° C to +250° C.

Alpha No. FIT-	Size, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	2 Ft. Lengths Std. Pkg.	Pkg. Net
500-30	.030	.022	.009	100′	$99.73
500-28	.035	.025	.009	100′	97.78
500-26	.040	.028	.010	100′	96.00
500-24	.050	.032	.010	100′	76.78
500-22	.055	.037	.010	100′	78.04
500-20	.060	.044	.012	100′	79.11
500-18	.076	.052	.012	100′	84.00
500-16	.093	.063	.012	100′	88.31
500-14	.121	.078	.012	100′	91.20
500-12	.153	.096	.012	50′	50.27
500-10	.191	.116	.012	50′	58.04
500-8	.240	.144	.015	50′	100.31
500-6	.302	.178	.015	20′	46.44
500-4	.370	.224	.015	20′	25.29
500-2	.430	.278	.015	20′	66.27
500-0	.470	.347	.015	20′	80.04

*Before shrinking. †After shrinking. ‡Pennsalt trademark. §Heavy walled tubing for use where a large volume of meltable material is needed.

FIT® TUBING ACCESSORIES, CAPS AND SOLDERING SLEEVES

FIT-600 NEOPRENE EXTRA FLEXIBLE-RUGGED IRRADIATED HEAT SHRINKABLE TUBING



MEETS MIL-R-46846A/1, MIL-1-23053/B/1, AMS-3623

Highly flexible, abrasion resistant heavy wall neoprene tubing ideal for fabrication in house short-run cables and harnesses. Widely used in prototype and repair work. At applied heat of 175° C, FIT-600 shrinks to approximately half its supplied diameter. Longitudinal shrinkage is less than 10%. Has good dielectric strength, excellent chemical and solvent resistance. Dielectric strength, 300 volts/mil. Flammability, self-extinguishing in 5 sec. Elongation, 250%.

Alpha No.	Size	Min. I.D. Before Shrinkage	Recov. I.D. After Shrinkage	Nom. Wall Thk.	Net per Pkg. 25′	Net per Pkg. 100′
FIT-600-¼	¼″	.250″	.143″	.035″	$ 53.23	$208.89
FIT-600-⅜	⅜″	.375″	.214″	.040″	63.72	249.78
FIT-600-½	½″	.500″	.286″	.048″	70.83	277.70
FIT-600-⅝	⅝″	.625″	.375″	.052″	79.62	312.22
FIT-600-¾	¾″	.750″	.428″	.057″	88.53	347.33
FIT-600-⅞	⅞″	.875″	.500″	.065″	99.00	388.22
FIT-600-1	1″	1.00″	.570″	.070″	108.01	423.56
FIT-600-1¼	1¼″	1.25″	.714″	.087″	149.70	587.33
FIT-600-1½	1½″	1.50″	.857″	.095″	174.93	686.00
FIT-600-1¾	1¾″	1.75″	1.00″	.107″	213.86	838.67
FIT-600-2	2″	2.00″	1.14″	.110″	248.77	975.56
FIT-600-3	3″	3.00″	1.71″	.125″	379.71	751.91*

*Pkg. of 50 Ft.

PACKAGED ASSORTMENTS IN 6″ LENGTH

Alpha No.	Tubing Size Range	Length	Lengths per Box	Net per Box
FIT-600 MS-1	¼″–⅞″	6″	12	$16.20
FIT-600 MS-2	⅞″–3″	6″	12	43.74

FIT-700 ADHESIVE LINED POLYOLEFIN CABLE AND CONNECTOR SLEEVES

Designed to protect cables used in overhead or underground installations from moisture penetration, corrosion and electrical breakdown. Sleeves are made of irradiated polyolefin tubing with an inner pre-coat of moisture resistant mastic for splice and connector protection on electrical, telephone, CATV cable. When heated to 275° F, tubing shrinks down and mastic flows to totally encapsulate wire splice or connector and cable insulation. Available in standard wall sleeves for use in general applications where wall thickness up to 600 volt cable is required, and in heavy wall sleeves for applications where extra mechanical protection or minimum wall thickness is needed, or where underground specifications must be met. Tough crystaline seal withstands external pressures to 100 psi. Operating temp., −40° C to +135° C. Dielectric strength, 300 volts/mil. Tensile strength, 2400 psi ASTM-D 2671. Black only.

STANDARD WALL SLEEVES

Alpha No.	Min. I.D. Expanded	Max. Recov. I.D.	Wall Thickness	Net per Pkg.*, Lengths 6″	9″	12″
FIT-700-1	.750″	.250″	.075″	$21.55	$18.15	$17.67
FIT-700-2	1.360″	.600″	.070″	31.93	28.33	26.93
FIT-700-3	1.400″	.400″	.070″	26.93	22.33	21.23
FIT-700-4	1.950″	.750″	.070″	39.38	35.92	33.82
FIT-700-5	2.750″	1.000″	.090″	40.80	.....	39.20

HEAVY WALL SLEEVES

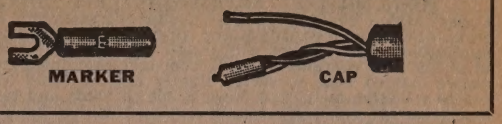
FIT-700-21	.750″	.220″	.110″	$25.00	$18.33	$ 17.50
FIT-700-22	1.200″	.300″	.165″	25.00	24.38	20.00
FIT-700-23	1.500″	.500″	.175″	35.00	30.00	27.50
FIT-700-24	1.920″	.600″	.175″	40.00	35.63	31.25
FIT-700-25	3.300″	1.000″	.175″	95.00	.....	95.00
FIT-700-26	4.500″	1.500″	.175″	112.50	.....	112.50

*6″ lgths. have 12 lgths. per pkg. 9″ lgths. have 8 lgths. per pkg. 12″ lgths. have 6 lgths. per pkg.

ASSORTMENT

Alpha No.	Description	No. of Lgths.	Net Each
FIT-700 MS-1	6″ lengths all sizes, standard sleeves	10	$32.48
FIT-700 MS-2	6″ lgths. all sizes, heavy wall sleeves	12	68.22

FIT-MARKERS AND FIT-CAPS



FIT-MARKERS—SHRINKABLE WIRE MARKERS

Pre-printed lengths of flexible black polyolefin tubing for permanent wire and cable identification. Printed in white type by hot stamping foil process; assures permanence even when subjected to a high degree of abrasion or certain chemical solvents. For numerical markers (two each 1–50) add suffix **NS** (example, MRK-B-**NS**); for alphabetical markers (4 each A–Z) add suffix **LS** (example, MRK-B-**LS**) to numbers below.

Alpha No.	Wire O.D., In.	Min. I.D.*, In.	Recov. I.D.†, In.	Marker Lgth., In.	Wall Th., In.	Net Pkg. 100
MRK-A	.049–.065	.098	.049	¾	.016	$4.50
MRK-B	.066–.095	.122	.061	¾	.016	4.50
MRK-C	.096–.150	.178	.089	¾	.016	4.50

FIT-CAPS

Shrinkable Polyolefin Wire Termination Caps—Semi-rigid tubing sealed on one end and specifically designed to act as termination caps over wire, cable and splices. Shrinkage ratio, 2:1.

Alpha No.	Color	Dimensions, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	Nom. Lgth.	Net per Standard Package Put-Up 1000	100
CAP-1	White	.063	.025	.016	¾	$ 91.67	$ 9.90
CAP-2	Red	.125	.050	.020	1	116.67	12.48
CAP-3	Slate	.250	.100	.025	1¼	160.00	16.80
CAP-5	Brown	.350	.175	.035	1⅛	516.67	52.70
CAP-4	Black	.500	.250	.040	1½	203.33	21.15

Self-Encapsulating Molded Caps—Molded, heat shrinkable, cross-linked polyolefin with two inserts: One at closed end of cap melts and flows between the splice forming a moisture-proof encapsulation; insert near open end acts as a dam. Cap shrinks and melts at 275° F. Black only.

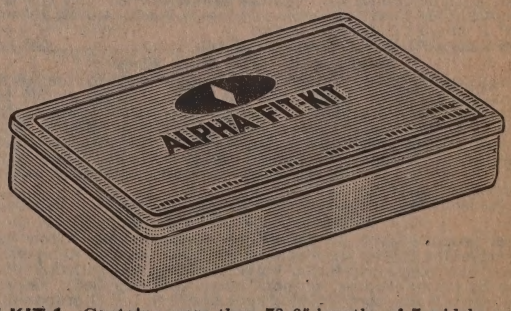
Alpha No.	Size, Inches Min. I.D.*	Recov. I.D.†	Nom. Lgth.	Nom. Wall Thk., Inch Inner	Outer	Net per Pkg. Pkg. of 10	Pkg. of 25
CAP-11	.160	.080	1.12	.013	.040	$26.52	$10.60
CAP-12	.250	.120	1.25	.020	.050	31.07	12.42
CAP-15	.360	.180	1.50	.030	.060	34.85	13.93

Molded Polyolefin Caps—Shrinks when heated (275° F) to a predetermined size and shape. Shrinkage ratio, 2:1. Black only.

Alpha No.	Dimensions, Inches Min. I.D.*	Recov. I.D.†	Wall Thk.	Nom. Lgth.	Net per Pkg* Pkg. of 10	Pkg. of 25
CAP-21	.16	.08	.04	1.12	$15.15	$ 6.07
CAP-22	.25	.12	.05	1.15	18.93	7.58
CAP-23	.36	.18	.06	1.40	22.73	9.08
CAP-24	.50	.25	.07	1.87	30.30	12.12
CAP-25	.75	.37	.08	2.70	45.45	18.18
CAP-26	1.00	.50	.09	3.50	60.60	24.25
CAP-27	1.50	.75	.10	4.00	79.55	31.82
CAP-28	2.00	1.00	.11	4.50	98.48	39.40

*Before shrinking. †After shrinking. *Larger quantity prices on request.

FIT-KITS—IDEAL R & D, OR PROTOTYPE SAMPLERS



FIT-KIT-1—Contains more than 70 6″ lengths of 7 widely used types of FIT Tubing in a variety of colors. Compartmented clear plastic box allows easy storage and quick identification. Includes lengths of FIT-105, FIT-221, FIT-295, FIT-300, FIT-350, FIT CAPS AND FIT MARKERS. Size, 11″ w. x 6½″ d. x 2″ h. Net Each..... **$29.15**

FIT-KIT-2—Contains all items in FIT-KIT-1, plus 6″ lengths of FIT-200, FIT-400, FIT-500, FIT-600, FIT-700, and 1″ cut pieces of FIT-200 and FIT-521. Kit is complete engineering, prototype, or laboratory inventory of all Alpha FIT-Tubing. Consists of two 11″ w. x 6½″ d. x 2″ h. compartmented clear plastic boxes. Net Each..... **$52.50**

FIT-SEAL—MOISTURE-RESISTANT FEEDTHROUGH SEAL

MEETS MIL-1-81765, MIL-E-917, MIL-STD-454

Covers cables from .38″ to 2½″. Reduces installation time and costs. May be used on ship-board, aircraft, control box or cabinet applications. May be used with plastic jacketed or armored cables or piping. Seal contains a sealing boot and a retaining ring. Heat causes molded boot to shrink tightly against cable while pre-coated adhesive melts and flows to fill all voids and establish a moistureproof seal. Meets requirements established for U.S. Navy and Coast Guard vessels.

Alpha No.	Cable O.D. Range	Drilled or Punched Hole*	Net Each
FIT-SEAL-2	.38″– .70″	1.285″	$18.75
FIT-SEAL-3	.65″–1.05″	1.750″	19.58
FIT-SEAL-4	1.00″–1.35″	2.055″	20.67
FIT-SEAL-5	1.28″–1.80″	2.930″	22.08
FIT-SEAL-6	1.77″–2.50″	3.808″	29.17

*± .030″.

FIT-CAP-P IRRADIATED HEAT SHRINKABLE TUBING

Completely pots connections. Assures absolute electrical protection. Inexpensive method of encapsulating crimped electrical connections. When heated with heat tool, outer jacket quickly shrinks forcing meltable inner wall to flow into every irregularity of the crimp. Dielectric strength, 1100 volts/mil. Stock color, black.

Alpha No.	Overall Length	I.D. Before Shrinking	Recovered I.D.	Nom. Thickness	Net per Pkg. 1000	Net per Pkg. 100
CAP-P-⅛	.875″	.125″	.023″	.045″	$ 26.67	$ 2.97
CAP-P-3/16	1.060″	.187″	.060″	.062″	36.33	4.00
CAP-P-¼	1.120″	.250″	.080″	.078″	62.17	6.83
CAP-P-⅜	1.375″	.375″	.090″	.082″	111.67	12.28
CAP-P-½	1.500″	.500″	.090″	.100″	188.00	20.68

FIT-BOOTS FOR D-SUBMINIATURE CONNECTORS*

Designed for subminiature rectangular connectors manufactured by ITT-CANNON, CINCH and AMPHENOL-BORG. Replace metal molds and plotting forms used on molded harnesses. Boots are molded of heat shrinkable, modified polyolefin compound. Shrinks tight over connector shells. Any Alpha heat gun may be used to shrink boots.

TOP ENTRY			
	Fits		
Alpha No.	Cannon, Cinch	Amphenol Series -17	Net Each
FIT-BOOT-1	DE-9	XX09X	$5.42
FIT-BOOT-2	DA-15	XX15X	5.83
FIT-BOOT-3	DB-25	XX25X	6.88
FIT-BOOT-4	DC-37	XX37X	8.33
FIT-BOOT-5	DD-50	XX50X	10.00

END ENTRY			SIDE ENTRY		
	Fits			Fits	
Alpha No.	Cannon, Cinch	Net Each	Alpha No.	Cannon, Cinch	Net Each
FIT-BOOT-6	DE-9	$5.42	FIT-BOOT-11	DE-9	$6.47
FIT-BOOT-7	DA-15	6.05	FIT-BOOT-12	DA-15	6.67
FIT-BOOT-8	DB-25	6.88	FIT-BOOT-13	DB-25	8.13
FIT-BOOT-9	DC-37	8.55	FIT-BOOT-14	DC-37	9.80
FIT-BOOT-10	DD-50	10.22	FIT-BOOT-15	DD-50	11.67

*Trademark, ITT Cannon.

HEAT GUNS AND ACCESSORIES

MINIATURE FIT GUN

For shrinking all FIT tubing and FIT sleeves. Durable, electric motor driven unit delivers a high volume of air to the nozzle. Lightweight, for bench or hand use. Easily replaceable heat elements; 3-position rocker switch. Rated 7 amps, 115 VAC. Includes tubing reflector and FIT sleeve reflector; stand for vertical or horizontal use. **Typical Temperatures:** 347° F without adapter; 401° F with adapter only; 446° F with tubing reflector; 664° F with FIT sleeve reflector.

Alpha Gun FG-1 FIT Gun—Net Each..... $61.25

INFRA-RED HEAT GUN FG-5

Shrinks tubing safely, in seconds. Ellipsoidal reflector focuses heat from quartz iodine lamp onto the tubing. Most visible light optically filtered to eliminate eyestrain. Reflectors permit operator to observe shrinking process, minimizing faulty installation. Noiseless, lightweight, no annoying heat build-up. Includes interchangeable tubing reflectors and small sleeve reflector. Input power, 105–120 VAC, 50–60 Hz, 4.2 amps. Lamplife, more than 1000 hrs. (intermittent). Weight, 1.6 lbs.

Alpha No. FG-5 Infra-Red Heat Gun—Net Each.... $287.37

FLAME TORCH KIT FG-10

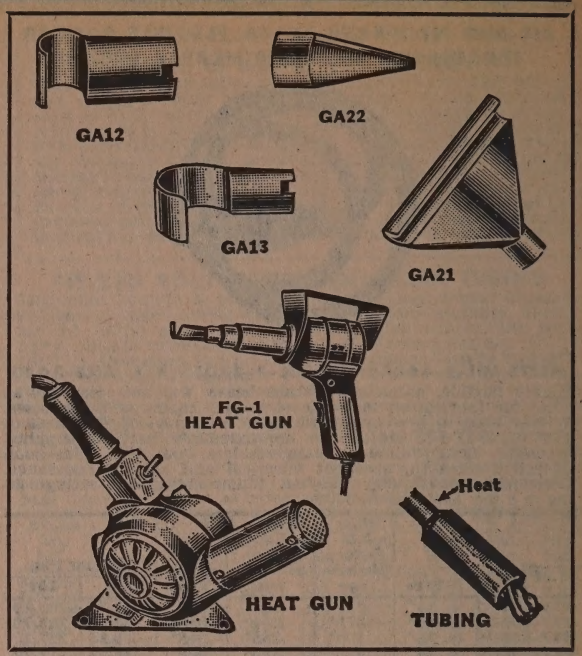
Ideal propane torch for in-field use. Supplies soft yellow flame for shrinking tubing without damage. Provides even-temperature flame. Has pistol grip torch. Valve assembly has control knob for attachment to ordinary propane bottle (not supplied). Assembly includes belt clip, torch holding hook. Has 6 ft. L.P.G. propane hose.

Alpha No. FG-10 Flame Torch Kit—Net Each..... $98.51

HEAT GUNS

The recommended tool for shrinking FIT tubing. A flameless, quiet-operating hot air torch that may be used for portable operations or secured permanently to a bench by means of a mounting bracket. Heavy-duty construction. Adjustable turbo fan air intake to control temperature and a double jacketed housing of diecast aluminum. With neoprene-jacketed 3-wire cord and plug and adapter for 2-prong receptacle. Motor for 115 VAC/DC. Length, 11″ overall.

Alpha No. HG-1 Heat Gun—Temp. up to 500° F. Net . $66.34
Alpha No. HG-2 Heat Gun—Temp., 750°–1000° F. Net. 79.48



HOT AIR PENCIL FG-4

Controls airflow temperature, velocity and direction. Used for precise selective heating of smaller diameter tubing and sleeves. Permits concentration of heat exactly where it is required. Ideal for crowded circuit areas. Uses factory or shop compressed air supply. Unit complete with stand, regulator, needle point tip, sleeve reflector and tubing reflector. Input power, 120 VAC, 4 amps. Airflow, 60 psig/min., 4 CFM.

Alpha No. FG-4 Hot Air Pencil—Net Each..... $167.07

ADAPTER NOZZLE

Concentrates heat and allows use of baffle accessories.

Alpha No. AN-1 Adapter Nozzle—Net Each..... $4.42

BAFFLES

Designed to concentrate heat in a confined working area. To be used with AN-1 Adapter Nozzle.

Alpha No. GA-12 Baffle—For small size cables. Net Ea.... $4.12
Alpha No. GA-13 Baffle—For larger sizes of cable. Net.... 6.16
Alpha No. GA-21 Baffle—For larger cables in long lengths. Net Each..... $35.25
Alpha No. GA-22 Baffle—Pointed design for spot shrinking. Net Each..... $22.84

FLAT BRAIDED TAPE

Nom. Thick.: .014″ (LC-134 is .010″, LC-162 is .012″). **Nom. Width:** 3/32″ (LC-134 is 1/16″). **Tensile Strength:** 50 lbs. (LC-134 is 30 lbs.). **Material:** Nylon (LC-162 is Dacron). **Finish:** Per MIL-T-713A except: LC-132 is synthetic rubber-like resin, melting point over 190° F; LC-140, non-slip fungistatic synthetic rubber; LC-143, "wax free" thermoplastic synthetic resin, melting point over 350° F. LC-136 meets MIL-T-713A, Type P, Class II.

Alpha No.	Color	Standard Put-Up	Net per Put-Up
LC-113 (Nylon)	White	½ lb. on spool	$ 5.58
	Black	½ lb. on spool	6.50
LC-114 (Nylon)	White	½ lb. on spool	5.58
	Black	½ lb. on spool	6.50
LC-115 (Nylon)	White	½ lb. on spool	10.00
	Black	½ lb. on spool	10.83
LC-132 (Nylon)	White	500 yds. on tube	11.08
	Black	500 yds. on tube	12.50
LC-134 (Nylon)	White	500 yds. on spool	9.58
	Black	500 yds. on spool	10.58
LC-136 (Nylon)	White	500 yds. on spool	10.00
	Black	500 yds. on spool	10.83
LC-140 (Nylon)	White	500 yds. on spool	11.00
	Black	500 yds. on spool	11.92
LC-143 (Nylon)	White	500 yds. on spool	9.00
	Black	500 yds. on spool	6.25
LC-162 (Dacron)	White	500 yds. on spool	10.00
	Black	500 yds. on spool	10.83

TEFLON COATED FIBERGLASS TAPE

FLAT BRAIDED

Teflon lubricated glass fibers minimize end fray. Operating temperature to 550° F. **Nominal Thickness:** .016″ (LC-201 is .012″, LC-202 is .014″, LC-206 is .018″).

Alpha No.	Nom. Width (Inches)	Standard Put-Up	Net Per Put-Up
LC-201	.048	500 yds. on spool	$25.00
LC-202	.062	500 yds. on spool	29.49
LC-203	.078	250 yds. on spool	18.26
LC-204	.090	250 yds. on spool	21.78
LC-205	.125	250 yds. on spool	32.31
LC-206	.225	250 yds. on spool	44.60

ALPHA POLYVINYLCHLORIDE PVC-105 MIL-I-631D PLASTIC TUBING

All-purpose, economical tubing is compounded with first quality, non-migratory resinous type plasticizers; designed to counteract chemical and environmental degradation. Rated for temperatures as high as 105° C with high dielectric strength. No loss in tensile strength or flexibility; resistant to abrasion. Retains its flexibility which permits it to cling to and protect irregular shapes. Meets MIL-I-631D, Type F, Form U, Grade C, Class I, Category 1.

Dielectric Strength: 800 V/mil. **Tensile Strength:** 2700–3300 psi. **Min. Volume Resis.:** 10^{11} ohm/cm. **Low Temperature Flexibility:** −20° C. **Specify Color:** #24 thru #2: Clear, black, white, yellow, red or green; #1 thru 1": Clear, black or white; 1⅛" thru 2½": Clear or black. **To Order:** Add gauge size to prefix **PVC-105/**, e.g., **PVC-105/24.**

Ga. Size	Nom. I.D., In.	Net per Spool of 100′	500′	1000′
24	.022	$6.20	.....	$18.03
22	.027	6.30	.....	18.76
20	.034	6.40	.....	19.12
19	.038	6.50	.....	19.85
18	.042	6.65	.....	20.59
17	.047	6.75	.....	21.32
16	.053	6.90	.....	22.06
15	.059	7.00	.....	22.79
14	.066	7.15	$13.33	.....
13	.076	7.40	14.17	.....
12	.085	.....	.....	.....
11	.095	.....	.....	.....
10	.106	7.90	15.83	.....
9	.118	9.45	21.03	.....

Ga. Size	Nom. I.D., In.	Net Price per Put-Up* Coil of 25′	Coil of 100′	Coil of 250′	Spool of 500′
8	.133	.....	$ 9.90	.....	$22.50
7	.148	.....	10.20	.....	23.53
6	.166	.....	10.70	.....	25.20
5	.186	.....	11.20	.....	26.87
4	.208	.....	11.80	$21.75	.....
3	.234	.....	12.65	23.75	.....
2	.263	.....	13.65	26.25	.....
1	.294	.....	14.70	28.95	.....
0	.330	.....	16.05	32.40	.....
5/16″	.312	.....	18.75	39.05	.....
3/8″	.375	.....	21.40	45.65	.....
7/16″	.438	.....	20.75	.....	.....
½″	.500	.....	23.50	.....	.....

Ga. Size	Nom. I.D., In.	Net Price per Put-Up* Coil of 25′	Coil of 50′	Coil of 100′
9/16″	.562	.....	.....	$31.00
5/8″	.625	.....	.....	33.90
¾″	.750	.....	$23.20	.....
⅞″	.875	.....	26.30	.....
1″	1.000	.....	29.20	.....
1⅛″	1.125	.....	38.15	.....
1¼″	1.250	.....	41.15	.....
1⅜″	1.375	.....	44.70	.....
1½″	1.500	.....	55.00	.....
1¾″	1.750	.....	70.45	.....
2″	2.000	.....	97.80	.....
2¼″	2.250	.....	117.05	.....
2½″	2.500	.....	140.25	.....

*Larger put-ups available. †On spool.

ALPHA POLYVINYLCHLORIDE LOC-TRAC ZIPPER TUBING

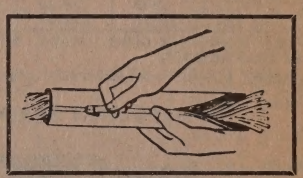
All-purpose, easy-to-use jacketing material; zips on in seconds without disconnecting or disturbing connections. Will not pop open even when bent into a U-shape. Does not need sealant nor adhesive. Track thickness when closed, .150", dielectric strength, 759V/mil; tensile strength, 3810 psi; ultimate elongation, 255%; operating temperature, −86 to +106°C; fungus proof; self-extinguishing. One metal slider with every 25 feet of tubing; additional sliders, AB-395, may be ordered at 10c each. **ZIP-41 Type:** MIL-I-631D, Grade C materials. All-purpose type. Wall thickness, .020". Clear or black. **ZIP-41M Type:** MIL-I-631D, Grade C materials. Wall thickness, .040" for heavy-duty use. Clear or black. **ZIP-60 Type:** Aluminum foil laminated between two sheets of polyvinyl. Wall thickness, .040". Silver-gray color.

Alpha No.	Net 100′*	Alpha No.	Net 100′*	Alpha No.	Net 25′	Net 50′	Net 100′*
ZIP-41M-¼″	$120.89	ZIP-60-¼″	$140.49	ZIP-41-¼″	$23.66	$46.58	$ 91.69
ZIP-41M-⅝″	129.06	ZIP-60-⅝″	150.29	ZIP-41-⅝″	24.54	48.34	95.17
ZIP-41M-¾″	137.23	ZIP-60-¾″	160.09	ZIP-41-¾″	25.45	50.15	98.77
ZIP-41M-⅞″	145.31	ZIP-60-⅞″	169.89	ZIP-41-⅞″	26.35	51.92	102.29
ZIP-41M-1″	154.86	ZIP-60-1″	181.31	ZIP-41-1″	27.38	53.97	106.37
ZIP-41M-1⅛″	163.11	ZIP-60-1⅛″	191.26	ZIP-41-1⅛″	28.28	55.78	109.97
ZIP-41M-1¼″	167.03	ZIP-60-1¼″	196.09	ZIP-41-1¼″	28.69	56.59	111.60
ZIP-41M-1½″	183.30	ZIP-60-1½″	215.69	ZIP-41-1½″	30.47	60.14	118.69
ZIP-41M-1¾″	199.60	ZIP-60-1¾″	225.46	ZIP-41-1¾″	32.27	63.72	125.80
ZIP-41M-2″	215.83	ZIP-60-2″	254.46	ZIP-41-2″	34.03	67.22	132.77

Write for prices on larger sizes. *Larger put-ups available.

ALPHA POLYVINYLCHLORIDE ZIPPER TUBING

All-purpose, easy-to-use jacketing material; zips on in seconds without disconnecting or disturbing connection. Track thickness (when closed), .095"; dielectric strength, 759 V/mil; tensile strength, 3,810 psi; ultimate elongation, 255%; operating temperature, upper limit, +106° C; lower limit, −86° C; fungus proof; self-extinguishing; lateral pull strength (permanently sealed) 59.8 #/In. One metal slider supplied with every 25 feet; additional sliders, AB-295, may be ordered at **10c** each. **ZIP-31M Type:** MIL-I-631D, Grade C materials. Temp., −20° C to +105° C. Wall thickness, .040"; for heavy duty construction. Clear or black. **ZIP-50 Type:** Aluminum foil laminated between two sheets of polyvinyl. Wall thickness, .040". Silver-gray color. **ZIP-31 Type:** MIL-I-631D, Grade C materials. All-purpose type. Wall thickness, .020". Temp., −20° C to +105° C. Clear or black.



Alpha No.	Net 100′*	Alpha No.	Net 100′*	Alpha No.	Net 25′	Net 50′	Net 100′*
ZIP-31M-¼″*	$ 95.17	ZIP-50-¼″*	$109.46	ZIP-31-¼″*	$20.81	$40.95	$80.57
ZIP-31M-⅜″*	100.57	ZIP-50-⅜″*	116.00	ZIP-31-⅜″*	21.39	42.11	82.86
ZIP-31M-½″	120.89	ZIP-50-½″	140.49	ZIP-31-½″	23.66	46.58	91.69
ZIP-31M-⅝″	129.06	ZIP-50-⅝″	150.29	ZIP-31-⅝″	24.54	48.34	95.17
ZIP-31M-¾″	137.23	ZIP-50-¾″	160.09	ZIP-31-¾″	25.45	50.15	98.77
ZIP-31M-⅞″	145.31	ZIP-50-⅞″	169.89	ZIP-31-⅞″	26.35	51.92	102.29
ZIP-31M-1″	154.86	ZIP-50-1″	181.31	ZIP-31-1″	27.38	53.9x	106.37
ZIP-31M-1⅛″	163.11	ZIP-50-1⅛″	191.26	ZIP-31-1⅛″	28.28	55.78	109.97
ZIP-31M-1¼″	167.03	ZIP-50-1¼″	196.09	ZIP-31-1¼″	28.69	56.59	111.60
ZIP-31M-1½″	183.30	ZIP-50-1½″	215.69	ZIP-31-1½″	30.47	60.14	118.69
ZIP-31M-1¾″	199.60	ZIP-50-1¾″	225.46	ZIP-31-1¾″	32.27	63.72	125.80
ZIP-31M-2″	215.83	ZIP-50-2″	254.86	ZIP-31-2″	34.03	67.22	132.77

*Write for prices on larger put-ups. *Cannot be closed with slider; must be done manually.

EXTRUDED VINYL TUBING

PVC 8 AND PVC 150

Superior thermal, mechanical, and electrical properties with economical cost. Self-extinguishing. High dielectric strength. **Temperature Range:** PVC-80, −67°C to +80°C; PVC-150, −20°C to +105°C.

Alpha No. & AWG Wire Size	Nom. Wall Thk. (In.)	Net 25′*	Alpha No. & AWG Wire Size	Nom. Wall Thk. (In.)	Net 100′*
PVC-80-24	.012	$ 1.40	PVC-105-24	.013	$ 6.20
PVC-80-22	.012	1.50	PVC-105-22	.012	6.30
PVC-80-20	.016	1.95	PVC-105-20	.016	6.40
PVC-80-19	.016	2.00	PVC-105-19	.016	6.50
PVC-80-18	.016	2.10	PVC-105-18	.016	6.65
PVC-80-17	.016	2.25	PVC-105-17	.016	6.75
PVC-80-16	.016	2.35	PVC-105-16	.016	6.90
PVC-80-15	.016	2.45	PVC-105-15	.016	7.00
PVC-80-14	.016	2.50	PVC-105-14	.016	7.15
PVC-80-13	.016	2.55	PVC-105-13	.016	7.40
PVC-80-12	.016	2.65	PVC-105-12	.016	7.45
PVC-80-11	.016	2.70	PVC-105-11	.016	7.65
PVC-80-10	.016	2.75	PVC-105-10	.016	7.90
PVC-80-9	.020	3.20	PVC-105-9	.020	9.45
PVC-80-8	.020	3.35	PVC-105-8	.020	9.90
PVC-80-7	.020	3.85	PVC-105-7	.020	10.20
PVC-80-6	.020	3.95	PVC-105-6	.020	10.70
PVC-80-5	.020	4.35	PVC-105-5	.020	11.20

Alpha No. & AWG Wire Size	Nom. Wall Thk. (In.)	Net 25′*	Alpha No. & AWG Wire Size	Nom. Wall Thk. (In.)	Net 100′*
PVC-80-4	.020	4.75	PVC-105-4	.020	11.80
PVC-80-3	.020	5.20	PVC-105-3	.020	12.65
PVC-80-2	.020	5.85	PVC-105-2	.020	13.65
PVC-80-1	.020	6.35	PVC-105-1	.020	14.70
PVC-80-0	.020	7.00	PVC-105-0	.020	16.05
PVC-80-5/16″	.025	8.80	PVC-105-5/16″	.025	18.75
PVC-80-3/8″	.025	10.55	PVC-105-3/8″	.025	21.40
PVC-80-7/16″	.025	11.90	PVC-105-7/16″	.025	20.75
PVC-80-½″	.025	13.50	PVC-105-½″	.025	23.50
PVC-80-9/16″	.030	18.10	PVC-105-9/16″	.030	31.00
PVC-80-5/8″	.030	18.75	PVC-105-5/8″	.030	33.90
PVC-80-¾″	.035	27.25	PVC-105-¾″	.035	23.20†
PVC-80-7/8″	.035	31.20	PVC-105-7/8″	.035	26.30†
PVC-80-1″	.035	39.20	PVC-105-1″	.035	29.20†
PVC-80-1⅛″	.035	48.30	PVC-105-1⅛″	.035	38.15†
PVC-80-1¼″	.040	52.50	PVC-105-1¼″	.040	41.15†
PVC-80-1⅜″	.040	56.70	PVC-105-1⅜″	.045	44.70†
PVC-80-1½″	.045	68.95	PVC-105-1½″	.055	55.00†
PVC-80-1¾″	.055	77.00	PVC-105-1¾″	.055	70.45†
PVC-80-2″	.060	114.80	PVC-105-2″	.060	97.80†
PVC-80-2¼″	.065	136.50	PVC-105-2¼″	.065	117.05†
PVC-80-2½″	.070	164.15	PVC-105-2½″	.070	140.25†

*Larger put-ups and discounts are available. Please inquire. †Net per 50′.

BRAIDED FIBERGLASS SLEEVING

This series of fiberglass sleeving is the toughest and most pliable of insulating materials and is formulated to provide the maximum in electrical characteristics, chemical resistance, heat stability and abrasion resistance. Tubing is constructed from an inorganic, woven fiberglass sleeving. Ends will not fray when cut. **Type PIF-240:** plain sleeving not coated, usable to 240° C.; **Type PIF-150:** impregnated with acrylic resin, usable to 155° C, conforms to MIL-I-3190C; **Type PIF-200:** coated with silicone rubber, usable to 200° C., conforms to MIL-I-3190C; **Type PIF-130:** impregnated with vinyl plastic, usable to 130° C, conforms to MIL-I-3190B. Type PIF-130 is black; others are natural.

AWG Wire Size or Dia.	Nom. I.D. (In.)	Net Each*			
		PIF-130-100′	PIF-150-100′	PIF-200-100′	PIF-240-100′
24	.022	$ 8.33	$10.24	$26.89	$ 5.62
22	.027	8.33	11.04	27.07	5.62
20	.034	8.50	11.27	27.60	6.31
18	.042	8.84	11.47	28.98	6.62
17	.047	.....	11.47	29.91	6.62
16	.053	9.19	11.84	30.40	6.78
15	.059	.....	12.27	30.73	7.16
14	.066	9.24	12.40	32.11	7.16
13	.076	.....	13.20	33.02	7.27
12	.085	9.49	13.44	34.76	7.47
11	.095	.....	14.42	36.33	7.96
10	.106	10.30	14.98	38.29	8.16
9	.118	.....	15.40	39.84	8.80
8	.133	11.48	17.00	42.84	9.33
7	.148	.....	17.80	45.82	10.18
6	.166	13.68	18.93	49.00	10.87
5	.186	.....	20.53	53.91	12.20
4	.208	15.36	24.47	60.09	13.24
3	.234	.....	26.82	67.44	15.11
2	.263	19.11	30.76	79.76	16.98
1	.294	.....	34.96	91.33	19.20
0	.338	24.93	41.24	106.80	22.38
3/8″	.387	31.60	56.47	140.00	28.69
7/16″	.450	41.73	72.00	184.76	37.82
1/2″	.512	52.69	94.47	215.69	49.24
5/8″	.640	63.60	114.22	253.42	59.22
3/4″	.768	77.87	138.89	.....	72.80
7/8″	.893	95.36	170.87	.....	88.73
1″	1.018	115.07	202.29	.....	108.11

To complete the order number, add wire size or diameter at end of type number.

*Other put-ups and discounts are available upon request.

POLYOLEFIN SHRINKABLE TUBING

Designed primarily as a strain relief and insulation for "quick disconnects" and other terminals. The 50% shrink ratio allows four sizes to fit most of the common terminations in use. **Shrink Temperature:** 136° C–148° C.

Alpha No.	Original I.D. (In.)	Shrunk I.D. (In.)	Recommended Term. Size (In.)		Net Each 25 4-ft. Lengths 100′ Total
			Male (Width)	Female	
FIT-200-1	.220	.095	.220	1/8	$31.67
FIT-200-2	.300	.125	.300	3/16	39.73
FIT-200-3	.350	.150	.350	1/4	43.89
FIT-200-4	.460	.200	.460	3/8	10.00*

Other put-ups and discounts available upon request.

*Net for five 4-ft. lengths.

POLYOLEFIN SHRINKABLE TUBING WITH ADHESIVE LINING

The FIT-750 is a tubing with an adhesive lining that melts as the tubing is shrunk. The thermoplastic adhesive adheres to a wide variety of surfaces. **Dielectric Strength:** 500V/mil; **Shrink Temperature:** 121° C.

Alpha No.	Original Dia. (In.)	Shrunk Dia. (In.)	Net Each 25 4-ft. Lengths 100′ Total
FIT-750-1/4	.250	.125	$250.86
FIT-750-3/8	.375	.187	279.27
FIT-750-1/2	.500	.250	65.87*
FIT-750-3/4	.750	.375	101.73*
FIT-750-1	1.000	.500	125.78*
FIT-750-1 1/2	1.500	.750	179.27*

*Net for five 4-ft. lengths.

EXTRUDED TEFLON TUBING

Teflon tubing is completely inert and has zero moisture absorption. The tubing is rated for continuous operation from −65° C to +260° C and retains toughness and flexibility throughout this range. **Dielectric Strength:** 1400V/mil; **Dielectric Constant:** 2.2. Conforms to MIL-I-22129C, AMS 3651B, 3655, 3653, and Fed. Spec. P-403A.

AWG Wire Size	Nom. I.D. (In.)	Wall Thickness			Net Each		
		-200/	-250/	-400/	TFT-200/ 100′*†▲	TFT-250/ 100′*■	TFT-400/ 100′*#§
30	.012	.009	.....	.006	$13.13	.....	$13.33
28	.015	.009	.....	.006	13.75	.....	10.22
26	.018	.010	.....	.006	15.00	.....	9.53
24	.022	.010	.012	.006	15.95	$18.13	9.82
22	.027	.010	.012	.006	16.58	18.45	11.16
20	.034	.012	.016	.006	20.35	25.00	13.49
19	.038	.012	.016	.006	20.33	26.25	15.11
18	.042	.012	.016	.006	22.50	26.58	16.42
17	.047	.012	.016	.006	23.45	28.13	18.18
16	.053	.012	.016	.006	23.75	29.38	19.51
15	.059	.012	.016	.006	25.63	31.25	20.69
14	.066	.012	.016	.008	27.80	33.45	23.78
13	.076	.012	.016	.008	30.93	37.20	26.98
12	.085	.012	.016	.008	34.38	40.33	29.78
11	.095	.012	.016	.008	37.50	44.70	33.31
10	.106	.012	.016	.008	41.88	49.70	36.98
9	.118	.015	.020	.008	45.30	57.50	40.04
8	.133	.015	.020	.008	51.88	61.25	44.60
7	.148	.015	.020	.008	56.83■	71.88	48.27
6	.166	.015	.020	.010	61.88■	79.38	60.42
5	.186	.015	.020	.010	67.83■	85.63	67.91
4	.208	.015	.020	.010	74.70■	90.70	78.13
3	.234	.015	.020	.....	82.20■	107.83	.....
2	.263	.015	.020	.....	99.70■	119.08	.....
1	.294	.015	.020	.....	109.38■	134.70	.....
0	.330	.015	.020	.....	125.00■	149.08	.....

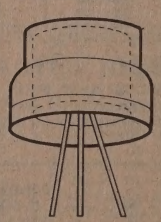
To complete the order number, add wire size to end of type number. *Other put-ups and discounts upon request. †Random lengths packed in 100′ coil. #Available as coils or on spools. ■Stock color is natural only. ▲Stock colors are natural and black. §Stock colors are natural, black, white, red, green, blue, orange, violet, brown, gray, and yellow.

EXTRUDED TEFLON TUBING IN FRACTIONAL SIZES

An extruded Teflon tubing with the same specifications as above, but available only in fractional sizes. Stock color is natural. Packaged as a 50′ coil of random lengths.

Alpha No. & Size	Nom. I.D. (In.)	Wall Thickness (In.)	Net Each 50′
TFT-300-1/8″	.125	.020	$ 48.88
TFT-300-3/16″	.192	.020	66.67
TFT-300-1/4″	.255	.020	82.22
TFT-300-5/16″	.321	.020	106.67
TFT-300-3/8″	.387	.025	157.78
TFT-300-7/16″	.451	.025	177.78
TFT-300-1/2″	.515	.025	202.22
TFT-300-5/8″	.643	.025	280.00
TFT-300-3/4″	.772	.030	384.44
TFT-300-7/8″	.902	.035	466.67
TFT-300-1″	1.030	.035	580.00
TFT-300-1 1/4″	1.287	.040	842.22
TFT-300-1 1/2″	1.550	.040	1002.22

FIT-JACS

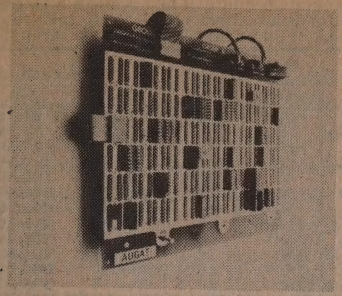


Fit-Jacs are preformed shapes of shrinkable tubing that can provide mechanical, environmental, and electrical protection for solid-state devices. Can be shrunk instantly to their predetermined size and shape by heating the lower skirt with hot air or soldering gun.

Alpha No.	Designed to Insulate	I.D. (In.)	Height (In.)	Net Each 100 Pieces
FIT-JAC 1	Diode P2-X*	.290	.400	$22.55
FIT-JAC 2	JEDEC TO-5*	.335	.345	26.14
FIT-JAC 3	JEDEC TO-18*	.200	.260	23.82
FIT-JAC 4	JEDEC TO-39*	.325	.250	26.14
FIT-JAC 5	JEDEC TO-99*	.335	.265	26.14
FIT-JAC 6	JEDEC TO-5†	.335	.345	29.08
FIT-JAC 7	JEDEC TO-18†	.200	.260	26.62

*Operating temp. 135° C, dielectric strength 1300V/mil, shrink temp. 275° F. †Oper. temp. 175° C, dielectric strength 1500V/mil, shrink temp. 350° F.

AUGAT Integrated Circuit Panels



HIGH-DENSITY PACKAGING PANELS FOR DUAL INLINE PLUG-IN IC'S

Double-sided panels accept plug-in IC packages with flat or round leads, 300-mil row spacing and 100-mil lead spacing. Large contoured, closed-entry contacts. Power and ground planes at each pattern (power plane on bottom): Types PG3, PG13, PG19, PG21, RG2, RG4, RG8 and RG10 have two dummy pins for power and ground; PG1, PG18, RG1 and RG7 have Pin 7 power and Pin 14 ground; types PG5, PG20, PG3 and PG9 have Pin 8 power and Pin 16 ground. All RG panels are 60-pattern panels; type UG1 is a universal type for any combination of 6 thru 40 lead dual-in-line IC's, available in any multiple of 9 rows up to 54 rows as indicated by the last part of the Augat Number; PG types are available as panels in any multiple of 30 patterns up to 180 patterns, as indicated by last part of Augat Number. To extend flexibility of Series 8136 panels, socket/terminals may be purchased separately; prices on request.

Augat No. 8136-	IC Leads	Vcc & Gnd Connections	Size, Inches W x D	Net Ea., Lots of 1-4	5-9*
PG1-30	14	7 & 14	2.675x6.875	$ 59.75	$ 53.75
PG1-30-TG	14	7 & 14	2.675x6.875	53.00	45.75
PG1-60	14	7 & 14	5.375x6.875	117.25	105.25
PG1-60-TG	14	7 & 14	5.375x6.875	99.25	88.75
PG1-90	14	7 & 14	8.075x6.875	174.00	156.25
PG1-90-TG	14	7 & 14	8.075x6.875	147.50	131.75
PG1-120	14	7 & 14	10.775x6.875	231.25	207.75
PG1-120-TG	14	7 & 14	10.775x6.875	196.00	175.75
PG1-150	14	7 & 14	13.475x6.875	288.75	259.25
PG1-150-TG	14	7 & 14	13.475x6.875	244.25	218.75
PG1-180	14	7 & 14	16.175x6.875	345.75	310.50
PG1-180-TG	14	7 & 14	16.175x6.875	292.50	261.50
PG3-30	14+2	V&G pins	2.675x6.875	63.25	56.75
PG3-30-TG	14+2	V&G pins	2.675x6.875	53.00	47.50
PG3-60	14+2	V&G pins	5.375x6.875	124.25	111.50
PG3-60-TG	14+2	V&G pins	5.375x6.875	103.50	92.50
PG3-90	14+2	V&G pins	8.075x6.875	184.50	165.50
PG3-90-TG	14+2	V&G pins	8.075x6.875	154.25	137.75
PG3-120	14+2	V&G pins	10.775x6.875	245.00	220.00
PG3-120-TG	14+2	V&G pins	10.775x6.875	205.00	183.25
PG3-150	14+2	V&G pins	13.475x6.875	306.00	274.50
PG3-150-TG	14+2	V&G pins	13.475x6.875	255.00	228.00
PG3-180	14+2	V&G pins	16.200x6.875	366.50	328.75
PG3-180-TG	14+2	V&G pins	16.200x6.875	305.50	273.00
PG5-30	16	8 & 16	2.675x6.875	66.00	59.25
PG5-30-TG	16	8 & 16	2.675x6.875	56.25	50.25
PG5-60	16	8 & 16	5.375x6.875	129.50	116.25
PG5-60-TG	16	8 & 16	5.375x6.875	109.75	98.00
PG5-90	16	8 & 16	8.075x6.875	193.50	173.25
PG5-90-TG	16	8 & 16	8.075x6.875	163.25	146.25
PG5-120	16	8 & 16	10.775x6.875	257.25	231.00
PG5-120-TG	16	8 & 16	10.775x6.875	217.00	194.25
PG5-150	16	8 & 16	13.475x6.875	320.75	288.00
PG5-150-TG	16	8 & 16	13.475x6.875	271.00	242.25
PG5-180	16	8 & 16	16.175x6.875	384.00	344.75
PG5-180-TG	16	8 & 16	16.175x6.875	324.25	289.75
PG13-30	16+2	V&G pins	2.675x6.875	71.00	63.75
PG13-30-TG	16+2	V&G pins	2.675x6.875	59.00	50.75
PG13-60	16+2	V&G pins	5.375x6.875	138.50	124.50
PG13-60-TG	16+2	V&G pins	5.375x6.875	115.25	103.25
PG13-90	16+2	V&G pins	8.075x6.875	207.00	187.75
PG13-90-TG	16+2	V&G pins	8.075x6.875	172.00	153.50
PG13-120	16+2	V&G pins	10.775x6.875	274.50	246.75
PG13-120-TG	16+2	V&G pins	10.775x6.875	228.50	204.25
PG13-150	16+2	V&G pins	13.475x6.875	343.25	308.75
PG13-150-TG	16+2	V&G pins	13.475x6.875	285.00	255.00
PG13-180	16+2	V&G pins	16.175x6.875	410.50	368.50
PG13-180-TG	16+2	V&G pins	16.175x6.875	341.25	305.00
PG18-30	14	7 & 14	2.675x6.875	59.00	53.00
PG18-30-TG	14	7 & 14	2.675x6.875	51.00	45.50
PG18-60	14	7 & 14	5.375x6.875	116.50	103.75
PG18-60-TG	14	7 & 14	5.375x6.875	99.00	88.50
PG18-90	14	7 & 14	8.075x6.875	172.00	154.50
PG18-90-TG	14	7 & 14	8.075x6.875	147.50	131.75
PG18-120	14	7 & 14	10.775x6.875	227.75	204.25
PG18-120-TG	14	7 & 14	10.775x6.875	195.75	174.00
PG18-150	14	7 & 14	13.475x6.875	284.00	255.25
PG18-150-TG	14	7 & 14	13.475x6.875	249.25	218.25
PG18-180	14	7 & 14	16.175x6.875	340.25	305.75
PG18-180-TG	14	7 & 14	16.175x6.875	292.25	260.75

*1/16" thick; all others 1/8".

Augat No. 8136-	IC Leads	Vcc & Gnd Connections	Size, Inches W x D	Net Ea., Lots of 1-4	5-9*
PG19-30	14+2	V&G pins	2.675x6.875	$ 67.25	$ 59.50
PG19-30-TG	14+2	V&G pins	2.675x6.875	52.75	47.25
PG19-60	14+2	V&G pins	5.375x6.875	126.50	114.00
PG19-60-TG	14+2	V&G pins	5.375x6.875	103.00	92.25
PG19-90	14+2	V&G pins	8.075x6.875	187.00	167.25
PG19-90-TG	14+2	V&G pins	8.075x6.875	153.25	137.00
PG19-120	14+2	V&G pins	10.775x6.875	245.25	222.25
PG19-120-TG	14+2	V&G pins	10.775x6.875	203.75	182.25
PG19-150	14+2	V&G pins	13.475x6.875	305.75	274.75
PG19-150-TG	14+2	V&G pins	13.475x6.875	254.00	227.25
PG19-180	14+2	V&G pins	16.175x6.875	365.00	327.50
PG19-180-TG	14+2	V&G pins	16.175x6.875	303.75	271.75
PG20-30	16	8 & 16	2.675x6.875	65.00	58.25
PG20-30-TG	16	8 & 16	2.675x6.875	55.75	50.00
PG20-60	16	8 & 16	5.375x6.875	127.50	114.50
PG20-60-TG	16	8 & 16	5.375x6.875	109.00	97.50
PG20-90	16	8 & 16	8.075x6.875	190.75	171.75
PG20-90-TG	16	8 & 16	8.075x6.875	162.25	145.00
PG20-120	16	8 & 16	10.775x6.875	253.25	227.50
PG20-120-TG	16	8 & 16	10.775x6.875	215.50	192.75
PG20-150	16	8 & 16	13.475x6.875	316.00	283.75
PG20-150-TG	16	8 & 16	13.475x6.875	268.75	240.50
PG20-180	16	8 & 16	16.175x6.875	377.75	339.50
PG20-180-TG	16	8 & 16	16.175x6.875	321.50	287.50
PG21-30	16+2	V&G pins	2.675x6.875	69.75	62.75
PG21-30-TG	16+2	V&G pins	2.675x6.875	58.50	52.50
PG21-60	16+2	V&G pins	5.375x6.875	136.50	122.50
PG21-60-TG	16+2	V&G pins	5.375x6.875	115.00	102.75
PG21-90	16+2	V&G pins	8.075x6.875	203.75	183.00
PG21-90-TG	16+2	V&G pins	8.075x6.875	171.00	157.25
PG21-120	16+2	V&G pins	10.775x6.875	270.50	242.75
PG21-120-TG	16+2	V&G pins	10.775x6.875	228.00	203.00
PG21-150	16+2	V&G pins	13.475x6.875	337.50	303.25
PG21-150-TG	16+2	V&G pins	13.475x6.875	283.25	253.25
PG21-180	16+2	V&G pins	16.175x6.875	403.75	362.75
PG21-180-TG	16+2	V&G pins	16.175x6.875	339.00	303.00
RG1	14	7 & 14	.....	141.25	126.75
RG1-TG	14	7 & 14	.....	122.50	109.50
RG2	14+2	V&G pins	.....	148.75	133.50
RG2-TG	14+2	V&G pins	.....	126.25	113.00
RG3	16	8 & 16	.....	153.00	137.25
RG3-TG	16	8 & 16	.....	132.50	118.75
RG4	16+2	V&G pins	.....	162.25	145.50
RG4-TG	16+2	V&G pins	.....	138.75	124.25
RG7*	14	7 & 14	.....	135.00	121.00
RG7-TG*	14	7 & 14	.....	116.50	104.25
RG8*	14+2	V&G pins	.....	144.00	128.25
RG8-TG*	14+2	V&G pins	.....	121.50	109.00
RG9*	16	8 & 16	.....	147.25	132.00
RG9-TG*	16	8 & 16	.....	126.50	113.25
RG10*	16+2	V&G pins	.....	155.75	139.75
RG10-TG*	16+2	V&G pins	.....	132.00	118.25
RG58	Blank card		.....	29.25	26.00
RG85*	Blank card		.....	26.00	23.25
RG86*	Extender card		.....	69.25	62.00
UG1-9	.....	V&G pins	.....	63.75	57.25
UG1-9-TG	.....	V&G pins	.....	54.75	49.00
UG1-18	.....	V&G pins	.....	128.75	115.50
UG1-18-TG	.....	V&G pins	.....	108.00	96.50
UG1-27	.....	V&G pins	.....	192.50	172.75
UG1-27-TG	.....	V&G pins	.....	161.25	144.00
UG1-36	.....	V&G pins	.....	256.50	230.25
UG1-36-TG	.....	V&G pins	.....	214.25	191.25
UG1-45	.....	V&G pins	.....	320.00	287.50
UG1-45-TG	.....	V&G pins	.....	267.50	239.25
UG1-54	.....	V&G pins	.....	385.00	345.75
UG1-54-TG	.....	V&G pins	.....	320.75	286.75
UG6-9	.....	V&G pins	.....	63.75	57.50
UG6-9-TG	.....	V&G pins	.....	53.50	48.00
UG6-18	.....	V&G pins	.....	126.75	113.50
UG6-18-TG	.....	V&G pins	.....	105.50	94.50
UG6-27	.....	V&G pins	.....	190.00	171.00
UG6-27-TG	.....	V&G pins	.....	157.50	141.00
UG6-36	.....	V&G pins	.....	252.25	226.50
UG6-36-TG	.....	V&G pins	.....	209.50	187.25
UG6-45	.....	V&G pins	.....	316.00	283.75
UG6-45-TG	.....	V&G pins	.....	261.75	234.00
UG6-54	.....	V&G pins	.....	378.50	340.00
UG6-54-TG	.....	V&G pins	.....	313.50	280.25
UG56-9	.....	Sckt/Terms	.....	65.25	58.75
UG56-9-TG	.....	Sckt/Terms	.....	56.75	50.75
UG56-18	.....	Sckt/Terms	.....	131.50	118.25
UG56-18-TG	.....	Sckt/Terms	.....	111.75	100.00
UG56-27	.....	Sckt/Terms	.....	197.25	177.00
UG56-27-TG	.....	Sckt/Terms	.....	167.00	149.00
UG56-36	.....	Sckt/Terms	.....	262.75	236.00
UG56-36-TG	.....	Sckt/Terms	.....	221.75	198.50
UG56-45	.....	Sckt/Terms	.....	328.25	294.25
UG56-45-TG	.....	Sckt/Terms	.....	277.25	247.75
UG56-54	.....	Sckt/Terms	.....	394.50	354.00
UG56-54-TG	.....	Sckt/Terms	.....	332.00	297.00
UG61-9	.....	Sckt/Terms	.....	66.00	59.50
UG61-9-TG	.....	Sckt/Terms	.....	55.75	49.50
UG61-18	.....	Sckt/Terms	.....	131.00	117.25

*1/16" thick: all others 1/8".

★LARGER DISCOUNTS AVAILABLE ON REQUEST

LISTING CONTINUED ON NEXT PAGE

HIGH DENSITY PACKAGING PANELS (CONTINUED)

Augat No. 8136-	IC Leads	Vcc & Gnd Connections	Size, Inches W x D	Net Ea., Lots of 1-4	5-9*
UG61-18-TG	.....	Sckt/Terms	.....	$109.50	$ 98.00
UG61-27	.....	Sckt/Terms	.....	195.25	175.25
UG61-27-TG	.....	Sckt/Terms	.....	163.25	146.00
UG61-36	.....	Sckt/Terms	.....	259.00	232.50
UG61-36-TG	.....	Sckt/Terms	.....	217.00	194.00
UG61-45	.....	Sckt/Terms	.....	324.25	291.00
UG61-45-TG	.....	Sckt/Terms	.....	271.25	242.50
UG61-54	.....	Sckt/Terms	.....	388.75	348.75
UG61-54-TG	.....	Sckt/Terms	.....	325.25	290.75
URG1	.....	V&G pins	.....	170.25	153.00
URG14*	.....	V&G pins	.....	163.50	146.75
WG1	14	7 & 14	7.353x6.95	141.75	127.00
WG1-TG	14	7 & 14	7.353x6.95	125.75	112.25
WG2	14+2	V&G pins	7.353x6.95	150.50	135.00
WG2-TG	14+2	V&G pins	7.353x6.95	131.00	117.50
WG3	16	8 & 16	7.353x6.95	154.25	138.50
WG3-TG	16	8 & 16	7.353x6.95	136.00	121.50
WG4	16+2	V&G pins	7.353x6.95	161.75	145.50
WG4-TG	16+2	V&G pins	7.353x6.95	141.75	127.50
WG7	14	7 & 14	.....	137.50	123.50
WG7-TG	14	7 & 14	.....	120.00	107.25
WG8	14+2	V&G pins	.....	144.75	129.75
WG8-TG	14+2	V&G pins	.....	125.25	111.75
WG9	16	8 & 16	.....	148.50	133.25
WG9-TG	16	8 & 16	.....	130.25	126.75
WG10	16+2	V&G pins	.....	157.00	141.00
WG10-TG	16+2	V&G pins	7.353x6.95	135.50	121.25
WG53	Extender card	.....	.....	108.25	96.50
WG58	Blank card	.....	.....	44.00	39.00
WG85	Blank card	.....	.....	40.25	36.00
WG86	Extender card	.....	.....	108.25	96.50
WG201	14	7 & 14	7.35x7.78	159.75	143.25
WG201-TG	14	7 & 14	.....	140.75	125.75
WG202	14+2	V&G pins	.....	170.25	152.75
WG202-TG	14+2	V&G pins	.....	147.50	132.00
WG203	16	8 & 16	.....	175.00	157.25
WG203-TG	16	8 & 16	.....	153.50	137.25
WG204	16+2	V&G pins	.....	185.50	166.50
WG204-TG	16+2	V&G pins	.....	159.75	143.00
WG207	14	7 & 14	.....	154.00	138.00
WG207-TG	14	7 & 14	.....	135.00	120.50
WG208	14+2	V&G pins	.....	164.00	147.25
WG208-TG	14+2	V&G pins	.....	141.25	126.25
WG209	16	8 & 16	.....	168.75	151.50
WG209-TG	16	8 & 16	.....	147.25	131.50
WG210	16+2	V&G pins	.....	179.00	158.75
WG210-TG	16+2	V&G pins	7.353x7.78	153.25	137.00
UWG1	.....	V&G pins	.....	181.25	153.50
UWG12	.....	V&G pins	.....	190.50	171.00
UWG12-TG	.....	V&G pins	.....	166.00	148.25
UWG18	.....	V&G pins	.....	184.00	165.00
UWG18-TG	.....	V&G pins	.....	159.00	142.25

***Larger quantity prices available on request.**

Augat No. 14005-1P1 Edge Connector—For 8136-R Series panels; 60 dual-contact, 120-termination.
Net Each, Lots of 1-4.....**$14.39**; 5-9.....**$12.86**
Net Each, Lots of 10-24..... **11.97**; 25-49..... **10.65**

METRIC SERIES HIGH DENSITY DIP PACKAGING PANELS

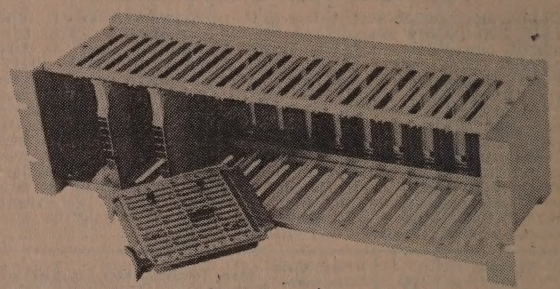
Panels accept 14 or 16 pin DIP's in 35 patterns spaced on .100 x .160 mm centers.

Augat No.	pins per Pat.	Vcc & Gnd Connections	Net Each, Lots of 1-4	5-9	10-24
8136-VG1	14	7 & 14	$63.75	$ 57.50	$ 53.50
8136-VG1T/G	14	7 & 14	56.50	50.75	47.00
8136-VG2	14+2	V&G pins	70.00	63.25	58.75
8136-VG2T/G	14+2	V&G pins	61.50	55.25	51.25
8136-VG3	16	8 & 16	70.00	63.25	58.75
8136-VG3T/G	16	8 & 16	62.00	55.75	51.75
8136-VG4	16+2	V&G pins	76.25	68.75	64.00
8136-VG4T/G	16+2	V&G pins	67.00	60.50	56.00
8136-VG7	double board		139.00	125.50	116.75
8136-VG7T/G	double board		121.50	109.50	101.50
8136-VG8	double board		153.50	138.75	129.00
8136-VG8T/G	double board		134.25	120.75	112.00
8136-VG9	double board		153.50	138.75	129.00
8136-VG9T/G	double board		134.25	120.75	112.00
8136-VG10	double board		168.50	152.25	141.75
8136-VG10T/G	double board		146.50	132.00	122.25
8136-UVG1	12 rows of 49 terms.		77.25	69.75	65.00
8136-UVG1T/G	12 rows of 49 terms.		68.00	61.25	56.75
8136-UVG2	28 rows of 49 terms.		169.00	152.75	142.25
8136-UVG2T/G	28 rows of 49 terms.		147.25	132.50	123.00

SCHOTTKY TTL DIP PACKAGING PANEL

Designed for the 54S/74S Schottky TTL Logic. Features expanded planar power distribution. Capacitive decoupling permitted at each DIP location. Three-plane design doubles ground surface area, increases the distributed capacitance, permits low impedance ground distribution and reduces high frequency noise. VZZ and Gnd pins are directly soldered to their respective planes for low impedance and eliminating need for wrapping those pins.

Augat No. 8136-	No. of Patterns	Pins per Pat.	Net Each, Lots of 1-4	5-9	10-24
SCH1-30	30	16	$ 72.00	$ 64.50	$ 60.25
SCH1-30-TG	30	16	64.00	57.25	53.25
SCH1-60	60	16	137.75	123.50	115.50
SCH1-60-TG	60	16	123.75	110.50	103.25
SCH1-90	90	16	206.25	185.00	173.00
SCH1-90-TG	90	16	183.25	164.00	153.25
SCH1-120	120	16	270.75	242.75	227.25
SCH1-120-TG	120	16	240.75	215.25	201.00
SCH1-150	150	16	339.25	304.25	284.75
SCH1-150-TG	150	16	301.50	269.50	251.75
SCH1-180	180	16	408.50	366.25	342.75
SCH1-180-TG	180	16	364.75	326.25	304.25



ENCLOSURES AND RACK ASSEMBLIES

Panel rack pivots for back panel accessibility. Specified in four ways permits application in a standard 19″ rack. Designed for 13 standard panels. Back panel easily removed for automatic wire wrapping. **Model 8160-EG10, -EG20, -EG21, -WG1,** and **-WG3:** Back panel only. **Model 8170-MG1, -RG1, -RG7, -RG14, -RG19:** Rack with back panel. **Model 8170-RG3, -RG16:** Rack only. **Size:** Enclosure, 17″ w. x 18.25″ d. x 8.75 h.; back panel, 16.4″ w. x .125″ d. x 8.25″ h.

Augat No.	Board Thck.	Net Each, Lots of 1-4	5-9	10-24
For M Series Boards				
8160-EG20	.....	$268.50	$240.00	$223.25
8170-MG1	.....	177.50	158.75	147.75
For R Series Boards				
8160-EG10	1/8	268.50	240.00	223.25
8160-EG21	1/16	265.25	236.75	220.25
8170-RG1	1/8	311.25	278.25	258.75
8170-RG14	1/16	308.75	276.00	256.25
8170-RG3	1/8	47.75	42.25	39.50
8170-RG16	1/16	47.75	42.25	39.50
For W Series Boards				
8160-WG1	1/8	$269.25	$240.75	$224.00
8160-WG3	1/16	269.25	240.75	224.00
8170-RG7	1/8	311.25	278.00	259.00
8170-RG19	1/16	311.25	278.00	259.00
8170-RG3	1/8	47.75	42.25	39.50
8170-RG16	1/16	47.75	42.25	39.50

DRAWER ASSEMBLIES

Pack up to 720 DIP's in one drawer assembly. Four panel frames are hinged from either side for accessibility or fast removal. Half drawers hold 2 frames. Top and bottom covers furnished providing protection and duct effect for blowers. Aluminum, gold iridite all frame members and front plate is of painted aluminum. **Size:** 17″ w. x 20.7″ d. x 3.5″ h. **Model 8170-DG1:** Drawer assembly with fan cut-out rear plate and perforated front plate. **Model 8170-DG2:** Drawer assembly with rear blank plate and front blank plate. **Model 8170-DG4:** ½ Drawer version of DG1. **Model 8170-DG5:** ½ Drawer version of DG2. **Model 8170-DG7:** ½ Drawer with perforated front plate and rear blank plate.

Augat No.	Net Each, Lots of 1-4	5-9	10-24
8170-DG1	$65.75	$58.50	$54.50
8170-DG2	59.50	53.25	49.50
8170-DG4	54.75	47.75	44.25
8170-DG5	50.25	45.25	42.00
8170-DG7	52.25	46.75	44.00

Augat No. 8170-14G1—Board frame to fit DG Series. Accepts boards 8136-PG1, -PG3, -PG5, -PG18, -PG19, -PG20, -UG1, -UG6, -UG56, and -UG61.
Net Each, Lots of: 1-4.....**$20.63**
5-9.....**$18.45**; 10-24.....**17.16**
Augat No. 8170-14G2—Board frame to fit DG Series. Accepts boards 8136-ECL21, -ECL23, -ECL24, -ECL25, -ECL26, -PG13, -PG21, and -SCH1.
Net Each, Lots of: 1-4.....**$20.63**
5-9.....**$18.45**; 10-24.....**17.16**

AUGAT Logic Panels and Cables

RIBBON CABLE PLUG ASSEMBLIES

Low profile plug assemblies (14 and 16 pin) with flat cable and twisted pairs (UL FR-1 type per MIL-W-16878). Encapsulated for cable strain relief and protection. Designed for use with series 8136 High Density Packaging Panels. Excellent retention and contact reliability. **Plug:** Glass filled nylon. **Contacts:** Brass, gold over nickel-plated. **Color Code:** Flat cable, 14 or 16 different colors (10 solid plus 4 or 6 strips); twisted pair, white common with 7 or 8 solid colors. Write for detailed color code wiring diagrams. **Overall Size:** .785″ w. x .490″ d. x .205″ h. **Pins:** .016″ sq. x .190″.

SINGLE ENDED PLUG ASSEMBLIES

Augat No.	No. of Pins	Type	Lgth., In.	Net Each, Lots of 1-99	100-499	500-999	1000-4999
1P14-3T12-1	14	Separate Wires .018″ Pins	12	4.19	3.80	3.16	2.90
1P14-3T24-1	14		24	5.07	4.60	4.07	3.51
1P14-3T36-1	14		36	5.95	5.39	4.77	4.11
1P16-3T12-1	16		12	5.01	4.17	3.94	3.39
1P16-3T24-1	16		24	5.91	5.02	4.75	4.08
1P16-3T36-1	16		36	6.93	5.89	5.56	4.78
1P14-4T12-1	14	Separate Wires .023″ Pins	12	4.19	3.80	3.16	2.90
1P14-4T24-1	14		24	5.07	4.60	4.07	3.51
1P14-4T36-1	14		36	5.95	5.39	4.77	4.11
1P16-4T12-1	16		12	5.01	4.17	3.94	3.39
1P16-4T24-1	16		24	5.91	5.02	4.75	4.08
1P16-4T36-1	16		36	6.93	5.89	5.56	4.78
2P14-1R12-1	14	Flat Cable Low-Profile Plug	12	1.83	1.60	1.39	1.22
2P14-1R24-1	14		24	2.05	1.79	1.56	1.37
2P14-1R36-1	14		36	2.28	1.99	1.73	1.52
2P16-1R12-1	16		12	2.08	1.82	1.59	1.39
2P16-1R24-1	16		24	2.34	2.04	1.78	1.56
2P16-1R36-1	16		36	2.59	2.27	1.98	1.74

DOUBLE ENDED PLUG ASSEMBLIES

Augat No.	No. of Pins	Type	Lgth., In.	Net Each, Lots of 1-99	100-499	500-999	1000-4999
1P14-3T12-2	14	Separate Wires .018″ Pins	12	7.19	6.12	5.78	4.98
1P14-3T24-2	14		24	8.30	7.05	6.66	5.72
1P14-3T36-2	14		36	9.38	7.98	7.55	6.49
1P16-3T12-2	16		12	8.44	7.18	6.77	6.11
1P16-3T24-2	16		24	9.70	8.25	7.79	6.71
1P16-3T36-2	16		36	10.98	9.43	8.80	7.58
1P14-4T12-2	14	Separate Wires .023″ Pins	12	7.19	6.12	5.78	4.98
1P14-4T24-2	14		24	8.30	7.05	6.66	5.72
1P14-4T36-2	14		36	9.38	7.98	7.55	6.49
1P16-4T12-2	16		12	8.44	7.18	6.77	6.11
1P16-4T24-2	16		24	9.70	8.25	7.79	6.71
1P16-4T36-2	16		36	10.98	9.43	8.80	7.58
2P14-1R12-2	14	Flat Cable Low-Profile Plug	12	3.34	2.93	2.55	2.24
2P14-1R24-2	14		24	3.57	3.12	2.72	2.39
2P14-1R36-2	14		36	3.80	3.32	2.89	2.54
2P16-1R12-2	16		12	3.82	3.35	2.92	2.56
2P16-1R24-2	16		24	4.08	3.57	3.11	2.73
2P16-1R36-2	16		36	4.34	3.80	3.31	2.90

ECL/SIP HIGH DENSITY WIRE WRAP DIP PACKAGING PANEL

High performance panel accepts 16 pin (ECL21 and ECL26) or 16 and 24 pin (ECL25) DIP ECL 10K logic. Each 27 or 30 pattern section accepts 2 (26 contact) plugs for I/O connections. Includes V_{tt} (−2 volt) plane for terminating load resistors. Series damping resistors easily utilized. Area provided for capacitive decoupling of voltage planes every 2½ DIP's. Thermal effects are minimized through the Wire Wrap socket array. Glass epoxy PC board with 3 layers of tin plated copper circuitry. **Terminals:** Brass, gold over nickel-plated. **Female Contacts:** Beryllium copper, gold over nickel-plated. **Size:** 30 pattern, 2.675″ w. x 7.475″ d. Add 2.7″ to width for each multiple of 30 pattern.

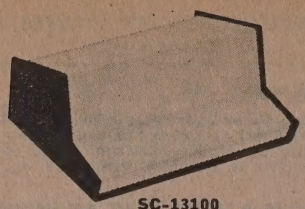
Augat No. 8136-	No. of Patterns	Net Each, Lots of 1-4	5-9	10-24
ECL21-30-2	30	$101.75	$ 91.50	$ 85.25
ECL21-30-2TG	30	90.00	80.75	75.00
ECL21-60-2	60	198.75	178.25	166.50
ECL21-60-2TG	60	175.25	156.75	146.25
ECL21-90-2	90	295.25	265.25	247.50
ECL21-90-2TG	90	260.50	233.00	216.75
ECL21-120-2	120	392.00	352.00	328.50
ECL21-120-2TG	120	345.50	309.25	288.00
ECL21-150-2	150	488.50	438.00	409.50
ECL21-150-2TG	150	432.50	387.25	360.75
ECL21-180-2	180	586.00	525.75	490.50
ECL21-180-2TG	180	518.50	464.00	429.25
ECL25-27-2	27	90.75	82.50	76.00
ECL25-27-2TG	27	80.50	72.00	67.00
ECL25-54-2	54	175.75	157.50	147.25
ECL25-54-2TG	54	155.00	138.75	129.25
ECL25-81-2	81	263.50	236.50	220.50
ECL25-81-2TG	81	232.75	208.25	193.50
ECL25-108-2	108	346.25	311.00	290.25
ECL25-108-2TG	108	305.50	273.25	254.75
ECL25-135-2	135	437.00	392.25	366.00
ECL25-135-2TG	135	385.25	344.75	321.00
ECL25-162-2	162	522.50	469.25	437.75
ECL25-162-2TG	162	461.00	412.50	384.00
ECL26-30-2	30	97.50	87.75	82.00
ECL26-30-2TG	30	86.50	77.25	72.00
ECL26-60-2	60	191.40	171.50	160.25
ECL26-60-2TG	60	167.25	149.50	139.25
ECL26-90-2	90	284.50	255.75	238.50
ECL26-90-2TG	90	250.75	224.50	208.75
ECL26-120-2	120	374.00	335.75	313.50
ECL26-120-2TG	120	329.50	294.75	274.50
ECL26-150-2	150	471.00	423.00	394.75
ECL26-150-2TG	150	414.50	370.75	345.25
ECL26-180-2	180	565.75	507.00	473.00
ECL26-180-2TG	180	497.00	444.75	414.00

SERIES 8136-M MINI RACK ASSEMBLY AND LOGIC PANELS

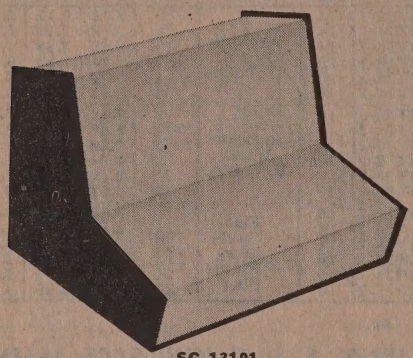
Designed for automatic wire wrapping, units available with 12, 18 or 24 patterns. Double sided board (1/16″ thick) with voltage and ground terminals preselected at each pattern. Additional socket terminals available for variable voltage and ground connection and plugging in capacitors. Edge connector take off accepts 72 contact (36 dual row) edge connector. **Terminal:** Brass, gold over nickel-plated. **Female Contact:** Beryllium copper, gold over nickel-plated. **Ejector Keys:** Nylon. **I/O Pins:** Phosphor bronze, gold over nickel-plated.

Augat No. 8136-	Pins Per Pat.	Pat. per Panel	V_{CC} & Gnd. Connections	Net Each, Lots of 1-4	5-9	10-24
MG1	14	24	7 & 14	$67.25	$60.50	$56.50
MG1-TG	14	24	7 & 14	58.50	52.50	49.75
MG2	14+2	24	V&G pins	71.00	63.75	59.50
MG2-TG	14+2	24	V&G pins	62.75	56.25	52.25
MG3	16	24	8 & 16	72.00	64.00	60.50
MG3-TG	16	24	8 & 16	63.50	56.25	53.00
MG4	16+2	24	V&G pins	77.50	68.00	63.25
MG4-TG	16+2	24	V&G pins	65.25	58.50	54.25
MG5	14	18	7 & 14	57.50	51.50	48.00
MG5-TG	14	18	7 & 14	51.50	46.25	42.75
MG6	14+2	18	V&G pins	60.75	54.25	50.75
MG6-TG	14+2	18	V&G pins	54.00	48.25	45.00
MG7	16	18	8 & 16	61.25	54.75	51.75
MG7-TG	16	18	8 & 16	54.75	49.00	45.75
MG8	16+2	18	V&G pins	64.00	57.50	53.50
MG8-TG	16+2	18	V&G pins	57.00	51.00	44.50
MG9	14	12	7 & 14	47.50	42.50	39.75
MG9-TG	14	12	7 & 14	43.75	39.00	36.50
MG10	14+2	12	V&G pins	49.00	44.00	41.25
MG10-TG	14+2	12	V&G pins	45.50	40.50	37.75
MG11	16	12	8 & 16	49.50	44.75	41.50
MG11-TG	16	12	8 & 16	45.50	40.75	37.75
MG12	16+2	12	V&G pins	51.50	46.25	43.00
MG12-TG	16+2	12	V&G pins	47.50	42.50	39.50
MG15	8 rows of 35 terms.		V&G pins	100.25	90.00	84.00
MG15-TG	8 rows of 35 terms.		V&G pins	86.50	77.25	72.25
UMG3	10 rows of 35 terms.		V&G pins	109.25	98.00	91.50
UMG3-TG	10 rows of 35 terms.		V&G pins	96.00	86.00	80.25

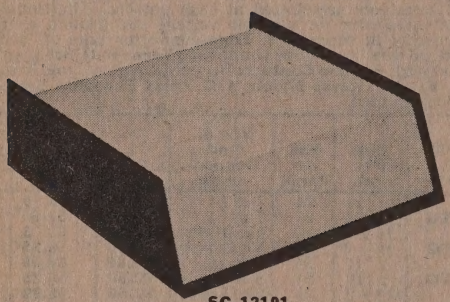
SPACE DOES NOT PERMIT LISTING OF ALL RELATED COMPONENTS. WRITE FOR INFORMATION ON UNLISTED ITEMS.



SC-13100



SC-13101



SC-12101

COMPUCAB SERIES

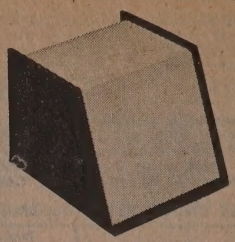
"Now Look" practical and adaptable to many types of instruments. New keyboard look matches today's advanced digital technology concept. All aluminum construction combines beauty, utility and sturdiness. No fasteners are visible on panel area. Shipped assembled. **Material:** Base, ⅛" aluminum; cover and back, 0.057" aluminum; feet, rubber, self-adhesive; 10-32 screws. **Finish:** Back and cover, smooth white enamel; base, black texture enamel; feet, black. **Assembled** with 6-32 screws. **Rear Panel:** One ⅞" dia. knockout centered, SC-13100; two ⅞" dia. knockouts and four sets of louvers, each set 2" w. x 1¾" h., SC-13101.

Bud No.	Overall Size, Inches W. x D. x H.	Net Each, Lots of 1-5	6-9	10-19
SC-13100	10 x 8⅞ x 5 11/32	$23.70	$21.35	$18.95
SC-13101	14 x 10¾ x 9 61/64	48.35	43.50	38.70

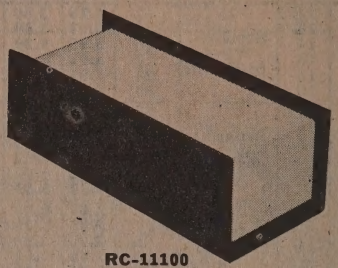
SLOPE SERIES

Sloping front enclosures for excellent visibility of panel mounted components. Modern concept in enclosures embodying clean vertical and horizontal lines. Highly desirable where quick access to the interior is needed. One-piece body is easily detached to provide access to interior components. No exposed fasteners. **Material:** Base, ⅛" aluminum; cover, 0.057" aluminum; feet, rubber, self-adhesive. **Finish:** Cover, smooth white enamel; base, black texture enamel. **Assembled** with 6-32 screws. **Rear Panel:** Single knockout centered, SC-12100; two knockouts, SC-12101. **Front Panel:** 20° slope.

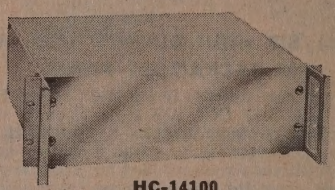
Bud No.	Overall Size, Inches W. x D. x H.	Top Depth	Net Each, Lots of 1-24	25-34	35-49
SC-12100	5 x 5 x 4¼	3 5/64	$10.60	$ 9.55	$ 8.50
SC-12101	12 x 10 x 3¼	8 7/16	22.05	19.85	17.65



SC-12100



RC-11100



HC-14100

LINEAR SERIES

Highly practical enclosures offer solutions to the designer of electronic subsystems and instrumentation. Attractive and functional; one-piece body can be removed to expose the entire interior. No visible fasteners. With self-adhesive rubber feet. **Material:** Base, ⅛" aluminum; cover, 0.057" aluminum. **Finish:** Cover, smooth white enamel; base, black texture enamel; feet, black. **Assembled** with 6-32 screws. **Rear Panel:** Single knockout centered, RC-11100; two knockouts, RC-11101.

Bud No.	Overall Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-34	35-49
RC-11100	5 x 10 x 3¼	$15.60	$14.05	$12.50
RC-11101	12 x 10 x 8	34.30	30.85	27.45

VALU/LINE CABINETS

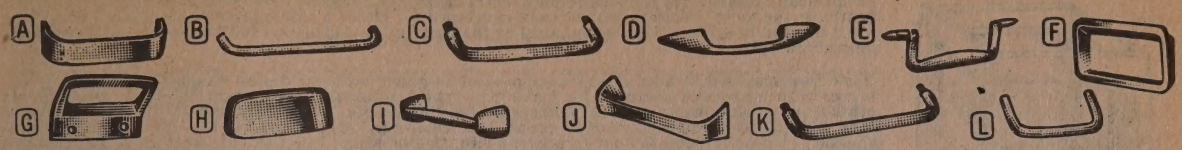
Classic and contemporary styling together with innovative engineering techniques result in a ruggedly built enclosure. Completely assembled unit includes two separate detachable rack mounting brackets and black rubber feet; adhesive paper protective covering on panels provides an excellent surface for indicating position when drilling or punching panel areas; ⅞" dia. knockout in rear. **Material:** Sides and front panel, ⅛" aluminum; base and cover, 0.057" aluminum; outer brackets, #11 gauge steel; inner brackets, 0.090" aluminum; handles, aluminum extrusion 6063-T5. **Finish:** Base and cover, white smooth enamel; sides, inner and outer brackets, white textured enamel; handles, caustic etch and clear lacquer. **Assembled** with 6-32 and 10-32 screws. Removable outer brackets for mounting in standard EIA 19" cabinet. Bails available as listed; slides also available.

Bud No.	Size, Inches D. x W. x H.	Handle Cutouts No.	H., In.	Net Each, Lots of 1-3	4-7	8-10
HC-14100	13 x 12¾ x 3½	1	2¾	$78.25	$70.45	$62.60
HC-14101	13 x 17 x 3½	1	2¾	82.60	74.35	66.10
HC-14102	13 x 12¾ x 5¼	1	3½	80.90	72.80	64.70
HC-14103	13 x 17 x 5¼	1	3½	85.15	76.65	68.10
HC-14104	13 x 17 x 7	1	3½	89.35	80.40	71.50
HC-14105	13 x 17 x 8¾	2	3½	93.70	84.35	74.95
HC-14106	13 x 17 x 10½	2	3½	97.95	88.15	78.35
HC-14107	15 x 17 x 10½	2	3½	102.20	92.00	81.75
HC-14108	15 x 17 x 12¼	2	3½	106.40	95.75	85.10
HC-14109	15 x 17 x 14	3	3½	114.90	103.40	91.90

Bud No.	Description	Net Each, Lots of 1-3	4-7	8-10
BC-14210	Bail, 10" long	$5.70	$5.15	$4.55
BC-14215	Bail, 15" long	6.95	6.25	5.55

BUD Cabinet Hardware, Brackets

BUD HANDLES



Fabricated from steel, brass or cast aluminum. Durable finish provides long wear and attractive appearance. Skin packed in pairs or bulk packed (priced singly) with all necessary mounting hardware. Designed for rugged applications, they have unlimited use in electronic, electrical and other fields.

Bud No.	Fig.	Description	Net per Pair, Lots of 1-49	50-99	100-149	Bulk Pack:* Net Ea., Lots of 1-99	100-199	200-499
H-9100	A	1″ x ¼″ chrome plated solid brass; 4″ x ½″ mtg. centers; 1″ hand clearance; four ½″ x 6-32 threaded screws	$13.25	$11.95	$10.60	$5.35	$4.80	$4.40
H-9101	A	Same, but 8″ x ½″ mtg. centers	20.05	18.05	16.05	8.75	7.90	7.00
H-9102	A	⅝″ x ¼″ chrome plated solid brass; 4″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 threaded screws	9.50	8.55	7.60	4.45	4.00	3.55
H-9103	A	Same, but has 6″ mounting centers	12.00	10.80	9.60	5.35	4.80	4.30
H-9110	B	⅜″ steel rod angular formed, chrome plated; 6″ mtg. centers; 1¼″ hand clearance; two ½″ x 10-32 screws	7.95	7.15	6.35	2.75	2.50	2.20
H-9111	B	⅜″ steel rod, chrome plated, 4″ mtg. centers; 1″ hand clearance; two ½″ x 10-32 threaded screws	4.25	3.85	3.40	1.90	1.70	1.50
H-9112	B	6″ mtg. center version of H-9111	4.75	4.30	3.80	2.10	1.90	1.70
H-9113	B	8″ mtg. center version of H-9111	5.40	4.85	4.30	2.15	1.95	1.70
H-9114	B	½″ steel rod, chrome plated; 8″ mtg. centers; 1½″ hand clearance; two ½″ x ¼-28 thd. screws	8.75	7.90	7.00	3.25	2.95	2.60
H-9115	C	⅜″ steel rod, chrome plated; 4″ mtg. centers; 1⅝″ hand clearance; two ¼-28 thd. nuts	6.60	5.95	5.30	2.60	2.35	2.10
H-9116	C	Same, but has 6″ mtg. centers	7.45	6.70	5.95	2.75	2.50	2.20
H-9120	D	Silver-anodized diecast aluminum; 4⅜″ inside, 5⅜″ outside mtg. centers; 1″ hand clearance; four ½″ x 6-32 threaded screws	11.60	10.45	9.30	5.10	4.60	4.10
H-9121	D	Same, except chrome plated alloy	15.45	13.90	12.35	6.75	6.10	5.40
H-9123	D	Similar to H-9120 but 4½″ mtg. centers; 1″ hand clearance; two ½″ x 10-32 thd. screws	7.70	6.95	6.15	3.15	2.85	2.50
H-9122	E	Silver-anodized diecast aluminum; hinged on ¼″ steel pins with 2 hinge blocks; 6½″ inside, 7¼″ outside mtg. centers; 1½″ hand clearance; four ⅜″ x 10-32 threaded screws	20.95	18.85	16.75	9.35	8.40	7.50
H-9130	F	Silver-anodized diecast aluminum; 3″ mtg. centers; two ⅜″ x 10-32 thd. screws; size 4⅛″ x 3″	17.10	15.40	13.65	7.75	7.00	6.20
H-9131	G	Silver-anodized diecast aluminum; size, 4″ x 2⅞″; 2¼″ mtg. centers; two ¾″ x ¼-28 thd. raised, countersunk screws and nuts	10.45	9.40	8.35	4.60	4.15	3.70
H-9140	H	Silver-anodized diecast aluminum; 3½″ mtg. centers; ¾″ hand clearance; two ½″ x 10-32 threaded screws	6.20	5.60	4.95	2.65	2.40	2.10
H-9149	.....	5¾″ x 3 13/16″ black shell, chrome handle; flip-up and out handle lies flat in frame when not in use; for Classic Series cabinets; four 8-32 x ½″ countersunk screws with nuts	20.45	18.40	16.35	9.10	8.20	7.30
H-9150	I	Silver-anodized diecast aluminum; 4″ x ⅝″ mtg. centers; 1¼″ hand clearance; four ½″ x 10-32 threaded screws	8.85	7.95	7.10	3.85	3.45	3.10
H-9151	J	Silver-anodized diecast aluminum; 5 5/32″ x ⅝″ mtg. centers; 1⅜″ hand clearance; four ½″ x 10-32 threaded screws	15.10	13.60	12.10	7.45	6.70	5.95
H-9152	J	Similar to above except 3⅞″ mtg. centers; 1⅛″ hand clearance; two ½″ x 10-32 threaded screws	11.70	10.55	9.35	5.10	4.60	4.10
H-9160	K	Chrome plated ⅜″ steel rod; 3½″ mtg. centers; 1 1/16″ hand clearance; two ¼″-28 hex nuts	7.25	6.55	5.80	2.75	2.50	2.20
H-9161	K	Same, but with 5¼″ mounting centers	8.20	7.40	6.55	2.75	2.50	2.20
H-9162	K	Same, but with 7″ mounting centers	8.45	7.60	6.75	3.00	2.70	2.40
H-9163	K	Same, but with 8¾″ mounting centers	8.75	7.85	7.00	3.25	2.95	2.60
H-9164	K	Same, but with 10½″ mounting centers	9.95	8.95	7.95	3.40	3.05	2.70
H-9165	K	Same, but with 12¼″ mounting centers	10.75	9.70	8.60	3.65	3.30	2.90
H-9166	L	Chrome plated ¼″ brass rod; 1 29/32″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 thd. screws	3.40	3.05	2.70	1.50	1.35	1.20
H-9168	L	Same, but 3″ mtg. centers; two ½″ x 6-32 thd. screws	3.60	3.25	2.90	1.50	1.35	1.20

*Number shown is for skin packed pairs. For bulk packed handles (priced singly), add suffix **B** to number (example: H-9100**B**).

TRUCK CASTERS

Use with all Bud relay racks and other floor mounted units. Ball bearing wheels are hard tread composition. **RC-7756** is for heavy duty applications; **RC-7758** is for extra heavy duty use (Series 60 Racks and Series 2000 Racks).

Bud No.	Height	Weight (Set of 4)	Net Each, Lots of 1-24	25-49	50-99
RC-7756	2⅝″	1¾ lbs.	$1.90	$1.70	$1.50
RC-7758	3¼″	6 lbs.	5.10	4.60	4.10

DOOR HANDLES, CATCH SETS

No. H-9347: Fits flush with cabinet door; exposed parts chrome plated. **Nos. H-3360 and HL-3361:** Lever-type handles are satin chrome plated with steel spindle and cam; fit Super Deluxe racks.

Bud No.	Description	Net Each, Lots of 1-49	50-99	100-149
H-3360	Non-locking handle	$ 7.45	$ 6.70	$ 5.95
HL-3361	3360 with lock and key	11.35	10.20	9.10
H-9347	Flush-mount catch set	2.20	2.00	1.75

RUBBER FEET

No. F-7264A: Has recessed head with mounting stud; rubber portion 15/16″ x 1 1/32″ thick. **No. F-8038:** May be applied to any surface; ¾″ dia. x ⅛″ thick self adhesive sponge rubber pad. **No. F-9653:** Press-fit type for 7/16″ hole.

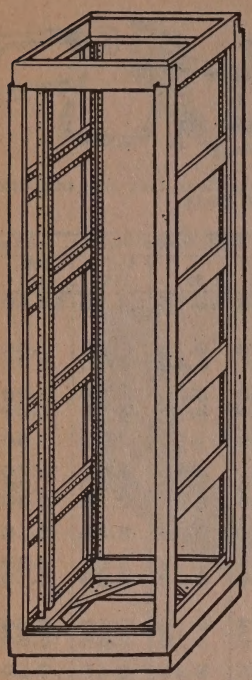
Bud No.	Description	Net per 100, Lots of 1-99	100-199	200-299
F-7264A	High grade black rubber	$ 1.80	$16.20	$14.40
F-8038	Sponge rubber pad	4.20	3.80	3.35
		1-49	50-99	100-149
F-9653	Top grade gray rubber	$ 7.95	$ 7.15	$ 6.35

SPEAKER ENCLOSURE HANDLES

Attach to any small housing or speaker enclosure to achieve portability. Made of aluminum tubing with etched finish.

Bud No.	Length, Inches	Mtg. Ctrs., Inches	Net Each, Lots of 1-49	50-99	100-149
UH-70A	5⅛	4⅝	$ 1.05	$ 0.95	$ 0.85
UH-71A	3¼	3¼	.90	.80	.70

BUD Series "60" Cabinet Racks



Ⓐ Upright Rack

Scientifically designed to meet all requirements for human needs as well as component physical specifications; the most practical cabinet rack developed for either a single piece of equipment or a large instrumentation system. Very economical to the user, units are shipped fully assembled and ready for immediate use.

Basic frame welded in a solid unit composed of 14-gauge cold-rolled steel channels. Sides have "U" braces with perforated channels for fastening vertical adjustable mounting rails. Rails also support other types of equipment such as brackets, shelves, slides, etc. Eliminates need of drilling holes in the rack. Sides and rear door made of 18 gauge steel. Door may be mounted to open left or right. Vertical channel, 4" wide, welded to door to prevent vibration or whip. Two pairs of panel mounting rails are supplied; fully adjustable. Panels may be mounted in front and rear at the same time. Front rails drilled and tapped 10-32 W.E. spacing. Rear rails are drilled according to universal spacing.

All Series Sixty enclosures may be quickly combined with each other to create units of any desired width as shown in the Add-A-Rack series. In addition, such accessories as desk tops, turrets, drawers, slides, sloping panel supports and front door are easily installed.

Standard finishes are textured baked enamel over primer. Specify two-tone gray by adding suffix **GGY.** For two-tone blue, add suffix **BBY** to order number. Standard Bud relay rack panels are available for the Series Sixty racks. (See Relay Rack Panels for colors available.)

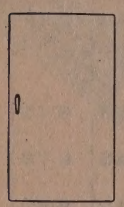
UPRIGHT CABINET RACKS (FIG. A)

Completely assembled 19" racks with sides, rear door and top. Standard units have plain sides and door and solid top. For greater ventilation, order units with louvered sides and rear door and solid top. Width, 24 1/16". Inside depth 20 1/2" clear on all units with 22" outside depth; 24", all others. Top opening 18 5/16" w. x 17" d. on units with 22" outside depth; 18 5/16" w. x 20 1/2" d., all others. **Specify Color When Ordering:** Add suffix **GGY** to number for gray; suffix **BBY** for blue.

COMPLETE 19" RACKS WITH PLAIN SIDES AND DOOR

Bud No.	Height	Outside Depth	Panel Space	Weight, Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2300	29 5/8"	22"	21"	118	$210.90	$189.80	$168.70
60-2301	40 1/8"	22"	31 1/2"	156	232.10	208.90	185.70
60-2302	50 5/8"	22"	42"	173	259.40	233.45	207.50
60-2303	61 1/8"	22"	52 1/2"	197	303.80	273.40	243.05
60-2304	69 7/8"	22"	61 1/4"	220	330.60	297.55	264.50
60-2305	78 5/8"	22"	70"	235	363.65	327.30	290.90
60-2306	87 3/8"	22"	78 3/4"	265	374.10	336.70	299.30
60-2307	29 5/8"	25 1/2"	21"	156	218.75	196.90	175.00
60-2308	40 1/8"	25 1/2"	31 1/2"	176	243.75	219.40	195.00
60-2309	50 5/8"	25 1/2"	42"	185	278.90	251.00	223.10
60-2310	61 1/8"	25 1/2"	52 1/2"	211	312.90	281.60	250.30
60-2311	69 7/8"	25 1/2"	61 1/4"	240	350.75	315.70	280.60
60-2312	78 5/8"	25 1/2"	70"	256	372.00	334.80	297.60
60-2313	87 3/8"	25 1/2"	78 3/4"	267	387.60	348.85	310.10

30" deep racks also available; prices on request.



Ⓑ Plain Door

COMPLETE 19" RACKS WITH LOUVERED SIDES AND DOOR

60-2700	29 5/8"	22"	21"	118	$219.15	$197.25	$175.30
60-2701	40 1/8"	22"	31 1/2"	156	242.10	217.90	193.70
60-2702	50 5/8"	22"	42"	173	272.95	245.65	218.35
60-2703	61 1/8"	22"	52 1/2"	197	328.80	295.90	263.05
60-2704	69 7/8"	22"	61 1/4"	220	350.65	315.60	280.50
60-2705	78 5/8"	22"	70"	235	385.50	346.95	308.40
60-2706	87 3/8"	22"	78 3/4"	265	394.50	355.05	315.60
60-2707	29 5/8"	25 1/2"	21"	156	226.80	204.10	181.45
60-2708	40 1/8"	25 1/2"	31 1/2"	176	262.75	236.50	210.20
60-2709	50 5/8"	25 1/2"	42"	185	301.20	271.10	240.95
60-2710	61 1/8"	25 1/2"	52 1/2"	211	338.40	304.55	270.70
60-2711	69 7/8"	25 1/2"	61 1/4"	240	379.35	341.40	303.50
60-2712	78 5/8"	25 1/2"	70"	256	402.40	362.15	321.90
60-2713	87 3/8"	25 1/2"	78 3/4"	267	418.80	376.90	335.05

ACCESSORIES FOR UPRIGHT CABINET RACKS

ACCESSORY DOORS

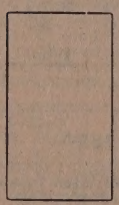
Doors are interchangeable; may be used for front or rear of rack; mount to open either left or right.

FOR 19" PANEL SPACE

Width, 18 15/16".

Plain Type (Fig. B) Bud No.	Net Each, Lots of 1-2	3-4	5-7	Ht.	Fits Rack With Panel Space of	Wt., Lbs.	Louvered Type (Fig. C) Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2340	$43.00	$38.70	$34.40	21 7/16"	21"	8	60-2540	$42.60	$38.35	$34.10
60-2341	46.20	41.60	36.95	31 5/16"	31 1/2"	11 1/2	60-2541	53.00	47.70	42.40
60-2342	51.00	45.90	40.80	42 7/16"	42"	15 1/2	60-2542	58.95	53.05	47.15
60-2343	56.85	51.15	45.50	52 5/16"	52 1/2"	19	60-2543	64.95	58.45	51.95
60-2344	62.70	56.45	50.15	61 1/16"	61 1/4"	22 1/4	60-2544	72.65	65.40	58.10
60-2345	73.45	66.10	58.75	70 7/16"	70"	25 1/2	60-2545	80.65	72.60	64.50
60-2346	76.05	68.45	60.85	79 3/16"	78 3/4"	29	60-2546	88.10	79.30	70.50

Ⓒ Louvered Door



Ⓓ Plain Side

ACCESSORY SIDES

Width, 22" except 60-2567–60-2573, 25 1/2". Sold in pairs only.

Plain Type (Fig. D) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7	Ht.	Fits Rack With Panel Space of	Wt., Lbs.	Louvered Type (Fig. E) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7
60-2560	$55.60	$50.05	$44.50	26 55/64"	21"	12 1/2	60-2580	$65.65	$59.10	$52.50
60-2561	73.40	66.05	58.70	37 23/64"	31 1/2"	17 1/2	60-2581	86.50	77.85	69.20
60-2562	85.50	76.95	68.40	47 55/64"	42"	21	60-2582	103.10	92.80	82.50
60-2563	98.70	88.85	78.95	58 23/64"	52 1/2"	26 1/4	60-2583	121.35	109.20	97.10
60-2564	108.80	97.90	87.05	67 7/64"	61 1/4"	30	60-2584	133.70	120.35	106.95
60-2565	97.95	88.15	78.35	75 55/64"	70"	34	60-2585	135.50	121.95	108.40
60-2566	137.35	123.60	109.90	84 39/64"	78 3/4"	38	60-2586	156.25	140.65	125.00
60-2567	70.15	63.15	56.10	26 55/64"	21"	14 1/2	60-2587	76.90	69.20	61.50
60-2568	91.80	82.60	73.45	37 23/64"	31 1/2"	20	60-2588	100.60	90.55	80.50
60-2569	105.90	95.30	84.70	47 55/64"	42"	24	60-2589	117.15	105.45	93.70
60-2570	123.15	110.85	98.50	58 23/64"	52 1/2"	29 1/2	60-2590	136.10	122.50	108.90
60-2571	134.80	121.30	107.85	67 7/64"	61 1/4"	34 1/2	60-2591	148.95	134.05	119.15
60-2572	150.15	135.15	120.10	75 55/64	70"	39	60-2592	164.10	147.70	131.30
60-2573	157.90	142.10	126.30	84 39/64"	78 3/4"	43 1/2	60-2593	172.85	155.55	138.30

Ⓔ Louvered Side

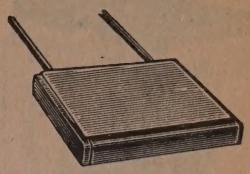
Series "60" Cabinet Racks

ACCESSORIES FOR UPRIGHT CABINET RACKS (CONT'D)

ACCESSORY PERFORATED TOP

Width, 21 15/16".

Bud No.	For Panel Space	Depth	Fits Upright Rack	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2370	19"	17"	With overall depth of 22"	6	$14.60	$13.15	$11.70
60-2371	19"	20½"	With overall depth of 25½"	7	15.45	13.90	12.35



F Desk Top

SERIES SIXTY DESK TOP (FIG. F)

May be used in connection with any Series Sixty enclosure. Furnished completely assembled with antique white Formica* surface. Fastens to panel mounting rails by two pre-drilled channels. Will support in excess of 200 lbs. Surface 24 1/16" wide, 19½" deep, 3 1/16" high. Available in three colors. **Specify Color:** Add suffix **GG** for gray; **BB** for blue; **HG** for gray hammertone.

Bud No.	Fits Series Sixty	Support Channel	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2360	With 22" depth	21 9/32" long	20¼	$71.05	$63.95	$56.85
60-2362	With 25½" depth	24 25/32" long	24¾	42.90	38.60	34.30

*Registered Synthane Corp. trademark.

INCLINED PANEL CABINET RACKS (FIG. G)

Completely assembled with sides, rear door and solid top. Available in two combinations of plain or louvered sides and rear door. **Specify Color When Ordering:** Add suffix **GGY** to number for gray; **BBY** for blue.

COMPLETE 19" RACKS WITH PLAIN SIDES AND DOOR

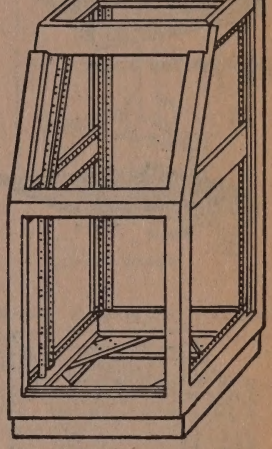
Size, 50 5/8" h. x 24 1/16" w. x 22" d., outside; 20½" d., clear inside. Weight, 165 lbs.

Bud No.	Incline Panel Height	Vertical Panel Height	Top Opening, W. x D.	Net Each, Lots of 1-2	3-4	5-7
60-2330	10½"	29¾"	18 5/16" x 11 53/64"	$259.05	$233.15	$207.25
60-2331	15¾"	24½"	18 5/16" x 10 1/32"	274.50	247.05	219.60
60-2332	17½"	22¾"	18 5/16" x 9 27/64"	274.50	247.05	219.60

30" deep racks also available; prices on request.

COMPLETE 19" RACKS WITH LOUVERED SIDES AND DOOR

Bud No.	Incline Panel Height	Vertical Panel Height	Top Opening, W. x D.	Net Each, Lots of 1-2	3-4	5-7
60-2730	10½"	29¾"	18 5/16" x 11 53/64"	$278.20	$250.40	$222.55
60-2731	15¾"	24½"	18 5/16" x 10 1/32"	294.55	265.10	235.65
60-2732	17½"	22¾"	18 5/16" x 9 27/64"	294.55	265.10	235.65



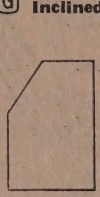
G Inclined Panel Rack

ACCESSORIES FOR INCLINED PANEL CABINET RACKS

ACCESSORY FRONT DOORS FOR 19" PANEL SPACE

Width, 18 15/16".

Plain Type (Fig. J) Bud No.	Net Each, Lots of 1-2	3-4	5-7	Height	Fits Rack Top Open. Size, In.	Wt., Lbs.	Louvered Type (Fig. K) Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2350	$46.25	$41.65	$37.00	30 3/16"	18 5/16 x 11 53/64	11	60-2550	$53.10	$47.80	$42.50
60-2351	43.00	38.70	34.40	24 15/16"	18 5/16 x 10 1/32	9½	60-2551	49.75	44.80	39.80
60-2352	42.05	37.85	33.65	23 3/16"	18 5/16 x 9 27/64	9	60-2552	48.10	43.30	38.50



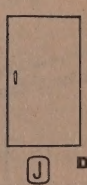
H Side Panels

I

ACCESSORY REAR DOORS FOR 19" PANEL SPACE

Size, 18 15/16" w. x 42 7/16" h.

Plain Type (Fig. J) Bud No.	Net Each, Lots of 1-2	3-4	5-7	Fits Rack Top Open. Size, In.	Wt., Lbs.	Louvered Type (Fig. K) Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2342	$51.00	$45.90	$40.80	All sizes	15½	60-2542	$58.95	$53.05	$47.15



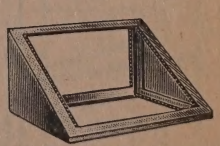
J

Doors K

ACCESSORY SIDES

Specify "L" for left side or "R" for right side, determined when facing front of rack. Size, 22" w. x 47 55/64" h. Sold in pairs only.

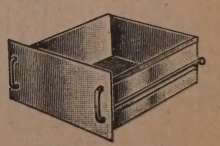
Plain Type (Fig. H) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7	Fits Rack Top Open. Size, In.	Wt., Lbs.	Louvered Type (Fig. I) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7
60-2574	$88.75	$79.90	$71.00	18 5/16 x 11 53/64	11	60-2594	$97.95	$88.15	$78.35
60-2575	91.70	82.55	73.55	18 5/16 x 10 1/32	9½	60-2595	101.05	90.95	80.85
60-2576	92.20	83.00	73.75	18 5/16 x 9 27/64	9	60-2596	102.30	92.05	81.85



L Turret

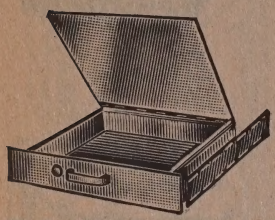
ACCESSORY PERFORATED TOPS FOR 19" PANEL SPACE

Bud No.	Width	Depth	Fits Rack Top Size, In.	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2372	21 15/16"	11 13/16"	18 5/16 x 11 53/64	3½	$11.35	$10.20	$9.10
60-2373	21 15/16"	10"	18 5/16 x 10 1/32	3½	10.95	9.85	8.75
60-2374	21 15/16"	9 13/32"	18 5/16 x 9 27/64	3¼	10.95	9.85	8.75



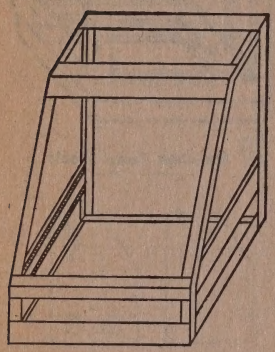
M Drawer

N Sliding Desk Top

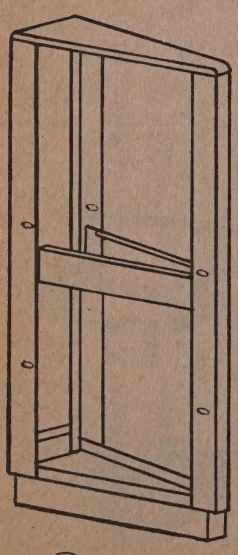


O Desk Top Drawer

P Shelf



Convertible Q



R 15° Wedge

ADD-A-RACK SERIES

Each assembly consists of frame, top, bottom, rear door and cowlings; used as an add-on unit to join any of the Series Sixty enclosures into a bank of two or more. One standard rack plus several Add-A-Racks make any desired number of racks combined for optimum width. Colors same as Inclined Racks.

FOR 19″ PANEL SPACE

Plain Door					Louvered Door				
Bud No.	For Add-on to Rack No.	Net Each, Lots of 1-2	3-4	5-7	Bud No.	For Add-on to Rack No.	Net Each, Lots of 1-2	3-4	5-7
60-2500	60-2300	$179.40	$161.45	$143.50	60-2900	60-2700	$177.45	$159.70	$141.95
60-2501	60-2301	186.95	168.25	149.55	60-2901	60-2701	192.25	173.05	153.80
60-2502	60-2302	205.80	185.20	164.65	60-2902	60-2702	211.60	190.45	169.30
60-2503	60-2303	224.45	202.00	179.55	60-2903	60-2703	231.30	208.15	185.05
60-2504	60-2304	251.10	226.00	200.90	60-2904	60-2704	258.25	232.45	206.60
60-2505	60-2305	279.75	251.80	223.80	60-2905	60-2705	287.80	259.00	230.25
60-2506	60-2306	300.50	270.45	240.40	60-2906	60-2706	308.95	278.05	247.15
60-2507	60-2307	200.85	180.75	160.70	60-2907	60-2707	203.25	182.95	162.60
60-2508	60-2308	210.25	189.25	168.20	60-2908	60-2708	213.75	192.40	171.00
60-2509	60-2309	229.50	206.55	183.60	60-2909	60-2709	235.35	211.80	188.30
60-2510	60-2310	250.70	225.65	200.55	60-2910	60-2710	256.90	231.20	205.50
60-2511	60-2311	280.20	252.20	224.15	60-2911	60-2711	287.05	258.35	229.65
60-2512	60-2312	312.00	280.80	249.60	60-2912	60-2712	320.10	288.10	256.10
60-2513	60-2313	345.30	310.75	276.25	60-2913	60-2713	353.85	318.45	283.10
60-2530	60-2330	219.20	197.30	175.35	60-2930	60-2730	221.80	199.60	177.45
60-2531	60-2331	233.75	210.40	187.00	60-2931	60-2731	239.55	215.60	191.65
60-2532	60-2332	233.75	210.40	187.00	60-2932	60-2732	239.55	215.60	191.65

SERIES SIXTY TURRETS (FIG. L)

Made of 16 gauge steel; designed so that any one of three sides may be attached to a Series Sixty upright rack or any horizontal surface. Accommodate standard 19″ panels. All mounting rails have universal spacing. Sides easily removed when a series of interconnecting turrets are desired. **Specify Color When Ordering:** Add suffix **GG** for dark gray; **BB** for dark blue; **HG** for gray hammertone. Order standard Bud panels with suffix **GY** for light gray; **BY** for light blue; **HG** for gray hammertone.

Bud No.	Width	Depth	Height	Panel Space Sloping	Bottom	Rear	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2364	22 1/16″	17 7/8″	12 5/16″	17 1/2″	14″	8 3/4″	17	$69.80	$62.80	$55.85
60-2365	22 1/16″	14 3/8″	10 3/16″	12 1/4″	10 1/2″	7″	14	58.35	52.50	46.70
60-2366	22 1/16″	20 13/16″	14 3/8″	21″	17 1/2″	10 1/2″	20	73.40	66.05	58.70

SERIES SIXTY DRAWER, DESK TOP, AND SHELF ACCESSORIES

No. 60-2368 Drawer: Fits into any Series Sixty cabinet rack. Slides easily on nylon rollers. Will support heavy loads. Extends to full depth; stops prevent drawer from falling out. Slides easily attach to panel supporting rails. Silver anodized handles. Shipped completely assembled. **No. 60-2361 Sliding Desk Top:** Fits all Series Sixty racks. Has smooth Formica* surface for writing, servicing or inspection. Fits flush with front of unit. Usable area when fully extended, 11″ x 17 5/8″. Occupies only 1 3/4″ of panel height. Will support 50 lbs. Ball-bearing slide mechanism mounts directly in Series Sixty racks; brackets included to fit other Bud cabinets and consoles. **No. 60-2363 Desk Top Drawer:** Fits Series Sixty racks. Has Formica surface. Fits flush with front of unit. Hinged desk top on drawer holds small tools or parts. Special front-panel latch both locks and releases drawer or top as desired. Mounts to cabinet U-braces; slides travel on nylon rollers. Hardware supplied. **No. 60-2380 and 60-2381 Shelves:** Ideal for support of chassis, power supplies or other equipment; also may be used as base plate for bottom support. Of one-piece 16 gauge steel with flanged front and rear for extra strength and rigidity. Easily bolted to cabinet U-braces. Will support 200 lbs. Hardware supplied.

Bud No.	Fig.	Size, Inches	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2368†	M	16 19/32 x 6 1/32 x 19 13/64 inside	28	$88.75	$79.90	$71.00
60-2361†	N	17 3/8 x 15 1/8 x 1 3/4 with std. 19″ panel	9 1/4	42.90	38.60	34.30
60-2363†	O	16 5/16 x 2 31/32 x 14 7/8 inside; 19 x 3 1/2 front panel	19	109.40	98.45	87.50
60-2380‡	P	17 29/32 w. x 19 9/32″ d.	8 1/4	14.10	12.70	11.30
60-2381‡	P	17 29/32 w. x 22 3/4 d.	8 1/2	14.75	13.30	11.80

*Synthane Corp. trademark. †Add suffix **GY** for light textured gray; **BY** for light textured blue; **WH** for white; **S** for sand; **HG** for gray hammertone. ‡Add suffix **GG** for dark textured gray; **BB** for dark textured blue; **WH** for white; **S** for sand; **HG** for gray hammertone.

SERIES SIXTY CONVERTIBLES (FIG. Q)

Affords optimum viewing angle when placed on a table or bench, or perched on top of a Series Sixty inclined panel cabinet rack. Max. access to the interior for installation of components or service is assured through sides, top, rear, bottom and front. Accepts standard 19″ panels in vertical and inclined panel spaces. Units assembled with lever type door handle, welded frame work, solid top, plain or louvered sides and/or rear door. Width, 24 1/16″; outside depth, 22″; clear inside depth, 20 1/2″; vertical panel space, 3 1/2″; all units. Available with dark gray body and light gray door or dark blue body and light blue door; **Specify Color When Ordering.**

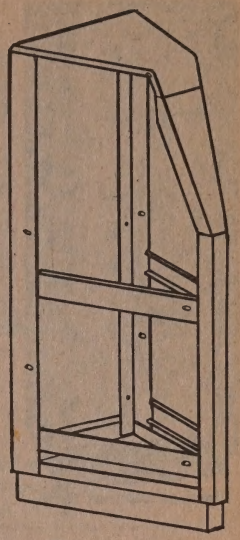
Plain Sides and Door				Inclined Panel Height	Louvered Sides and Plain Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7		Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-4600*	$230.05	$207.05	$184.05	10 1/2″	60-4700*	$239.55	$215.60	$191.65
60-4601†	232.65	209.40	186.10	15 3/4″	60-4701†	243.70	219.35	194.95
60-4602‡	235.45	211.90	188.35	17 1/2″	60-4702‡	246.45	221.80	197.15
Louvered Sides and Door					**Plain Sides, Louvered Door**			
60-4900*	$241.75	$217.60	$193.40	10 1/2″	60-4800*	$235.45	$211.90	$188.35
60-4901†	244.80	220.30	195.85	15 3/4″	60-4801†	238.20	214.40	190.55
60-4902‡	247.50	222.75	198.00	17 1/2″	60-4802‡	241.00	216.90	192.80

*Height, 22 25/32″; top opening, 18 5/16″ w. x 11 53/64″ d. †Height, 27 23/32″; top opening, 18 5/16″ w. x 10 1/32″ d. ‡Height, 29 23/64″; top opening, 18 5/16″ w. x 9 27/64″ d.

BUD Wedges, Cabinets and Accessories

SERIES SIXTY WEDGES

Helps in joining any number of Series Sixty upright or inclined panel units together to conform to any configuration or space requirement. These are quickly attached to the adjacent frame work by means of simple fasteners. Width, 7 3/16" (60-8300–60-8306); 8 3/32" (60-8307–60-8313); 18 3/32" (60-8400–60-8406); 20 61/64" (60-8407–60-8413). Available with dark gray frame and light gray panel or dark blue frame and light blue panel. **Specify Color When Ordering.**



Ⓢ 45° Wedge

FOR UPRIGHT RACKS

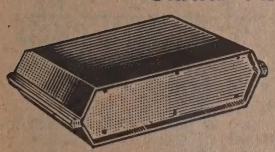
15° WEDGES (Fig. R)				For Cabs. With		45° WEDGES (Fig. S)			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Panel Ht.	Outside Depth	Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-8300	$ 95.70	$ 86.15	$ 76.55	21"	22"	60-8400	$106.15	$ 95.55	$ 84.90
60-8301	114.45	103.00	91.55	31½"	22"	60-8401	122.80	110.50	98.25
60-8302	125.40	112.85	100.30	42"	22"	60-8402	133.80	120.40	107.05
60-8303	138.40	124.55	110.70	52½"	22"	60-8403	144.90	130.40	115.90
60-8304	155.20	139.70	124.15	61¼"	22"	60-8404	164.20	147.80	131.35
60-8305	170.70	153.65	136.55	70"	22"	60-8405	179.70	161.75	143.75
60-8306	186.25	167.65	149.00	78¾"	22"	60-8406	194.55	175.10	155.65
60-8307	109.95	98.95	87.95	21"	25½"	60-8407	116.35	104.70	93.10
60-8308	127.50	114.75	102.00	31½"	25½"	60-8408	135.85	122.25	108.70
60-8309	142.35	128.10	113.90	42"	25½"	60-8409	151.30	136.15	121.05
60-8310	155.20	139.70	124.15	52½"	25½"	60-8410	164.20	147.80	131.35
60-8311	173.25	155.95	138.60	61¼"	25½"	60-8411	181.90	163.70	145.50
60-8312	194.55	175.10	155.65	70"	25½"	60-8412	203.10	182.80	162.50
60-8313	215.95	194.35	172.75	78¾"	25½"	60-8413	225.00	202.50	180.00

FOR INCLINED PANEL RACKS

Width, 7 3/16" (15° wedges); 18 3/32" (45° wedges).

15° WEDGES (Fig. R)				For Vert. Panel Height	45° WEDGES (Fig. S)			
Bud No.	Net Each, Lots of 1-2	3-4	5-7		Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-8330	$148.65	$133.80	$118.90	29¾"	60-8430	$155.85	$140.25	$124.70
60-8331	157.80	142.00	126.25	24½"	60-8431	166.80	150.10	133.45
60-8332	157.80	142.00	126.25	22¾"	60-8432	166.80	150.10	133.45

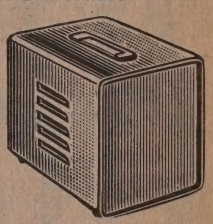
GRAND PRIX CABINETS



Excellent for audio equipment or wherever appearance is important. Match any decor. Upper and lower segments held together by aluminum extrusions. Body and panels of 20 gauge steel. Four rubber feet. Specify color by suffix: **GGY,** textured dark gray with light panel; **HG,** gray hammertone.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-49
MD-1	4⅛ x 19¼ x 10½	7¼	$31.55	$28.40	$25.25
MD-2	7⅛ x 19¼ x 10½	7¾	33.05	29.75	26.45
MD-3	4⅛ x 12¼ x 8¾	7	25.55	23.00	20.45

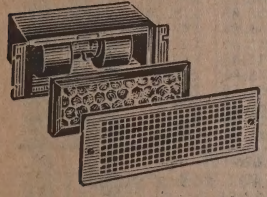
PORTACAB INSTRUMENT CABINETS



Attractive, versatile cabinets desirable as housings for instrumentation requiring highly stylized appearance. Custom, quality look achieved in standard production models. Made entirely of aluminum to minimize weight. Flexible recessed handle permits easy portability as well as vertical stacking. Well louvered for adequate ventilation. Louvers point inward, permitting side-to-side placement of cabinets without space loss. Aluminum front panel recessed ½". Welded back has opening. Perimeter of panel follows contour of body. Has four detachable rubber feet. Gray hammertone finish only.

Bud No.	Size, Inches W. x D. x H.	Wt., Lbs.	Bud Chassis	Net Each, Lots of 1-24	25-49	50-99
WA1540	6⅛ x 8 x 8	2	AC-402	$16.45	$14.80	$13.15
WA1541	8⅛ x 12 x 9	3½	AC-407	22.55	20.30	18.05
WA1542	10⅛ x 8 x 8	3¾	AC-406	19.20	17.30	15.35
WA1543	11⅛ x 18 x 11	5½	AC-416	27.90	25.10	22.30
WA1544	14⅛ x 18 x 12	8	AC-420	32.05	28.85	25.65

TRANS-AIRE BLOWER



Ideal for use where excessive heat is generated by equipment in an enclosed rack, cabinet or console. Brings in fresh air or exhausts heated air, enabling use as an exhaust or intake blower, depending upon mounting position. Unit will operate in any position—vertical or horizontal. May be mounted to rails of standard cabinet or rack. Use of Bud Chassis Supporting Angles SA-1349, SA-1350 or CE-2219 is recommended when blower is mounted in rack or cabinet. Motor is rubber mounted. Thermal overload protection to prevent overheating. Automatic reset. Oil impregnated, disposable fiberglass filter can be changed without removing unit from cabinet. Air displacement shown is at 0° static pressure. Double shielded, permanently lubricated ball bearings. B-50, B-52 and B-54 are short-depth models with single speed; others, dual speed. Complete with filter, nickel-plated grille and 24" three-wire cord. Light gray enamel finish.

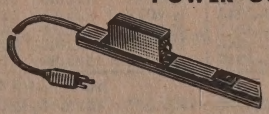
Bud No.	Size† D. x H.	Air c.f.m. High	Low	Motor Watts	rpm	Filters Bud No.
B-23A	12" x 3½"	180	130	125/100	1450/1250	BF-24
B-25A	14½" x 5¼"	350	160	375/200	1420/1075	BF-26
B-27A	14½" x 7"	515	280	550/350	1350/1150	BF-28
B-50*	6 13/32" x 3½"	150	.....	80	3150	BF-24
B-52*	9 1/32" x 5¼"	150	.....	80	3000	BF-53
B-54*	10 3/16" x 7"	300	.....	60	1550	BF-55

*Brings in fresh air only. †All for standard 19" rack.

TRANS-AIRE BLOWER AND FILTER PRICING

Bud No.	Net Each, Lots of 1-9	10-14	15-19	Bud No.	Net Each, Lots of 1-24	25-49	50-99
B-23A	$130.05	$117.05	$104.05	BF-24	$2.35	$2.10	$1.90
B-25A	148.45	133.60	118.75	BF-26	2.65	2.40	2.10
B-27A	159.55	143.60	127.65	BF-28	3.00	2.70	2.40
B-50	126.40	113.75	101.10	BF-53	2.65	2.40	2.10
B-52	127.90	115.10	102.30	BF-55	2.80	2.50	2.25
B-54	159.90	143.90	127.90				

POWER OUTLET STRIPS



For racks or cabinets with a number of instruments requiring individual power sources. Steel raceways protect cords from damage. Mount vertically or horizontally; snap into clips in housing. Grounding-type receptacles rated 15 A at 125 V and spaced on 6" centers except POS-4, designed for horizontal mounting. With pushbutton-reset overload breaker, 6-ft. cord and grounding plug. UL Recognized components. Light gray enamel finish.

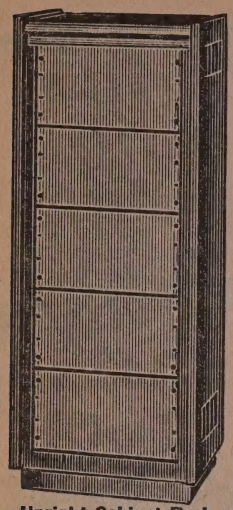
Bud No.	No. of Outlets	Length, Inches	Net Each, Lots of 1-5	6-11	12-17
POS-4	4	17½	$39.10	$35.20	$31.30
POS-7	7	48	41.20	37.10	32.95
POS-9	9	60	45.30	40.75	36.25
POS-11	11	72	49.35	44.40	39.50

"TEM-STAT" TEMPERATURE CONTROLS

Prevents costly damage to electronic components in enclosed cabinets, boxes, etc. Bimetal sensing element responds quickly to gradual or sudden temperature changes and actuates whatever warning device you use: Activates a light, bell, blower or other device; or, shuts off current. Activates snap-action, heavy duty, normally open switch contacts. High electrical ratings up to 300° F; fully adjustable temperature ranges. Screw terminals for easy attachment. UL Recognized. Small size, 2 15/16" lg. x 1" w. x 1 7/32" d., suitable for limited space applications. **UL Rating:** 8 amps, full load, 115 VAC (48 amps, locked rotor). 100,000 cycles motor rating; derate 50% for 230 VAC. Full load 13.8 amps 120 VAC (82.8 amps, locked rotor). 6,000 cycles motor rating; derate 50% for 240 VAC. Pilot duty, 125 VA at 115/230 VAC; or, 250 mV or more.

Bud No. TS-15—80°–170° F. Net Each, Lots of 1–9..... **$8.70**
Net Each, Lots of: 10–14..... **$7.85;** 15–19..... **6.95**

Series 2000 Cabinet Racks



Upright Cabinet Rack

SERIES 2000 UPRIGHT CABINET RACKS

Modern rack enclosures combine the dramatic appearance of sheer, square lines with rugged Bud construction. Basic frame is all-welded with 14 gauge steel members; 18 gauge steel door, sides and top. "U" braces welded to sides of frame augment its strength and rigidity and act as a mounting for the vertical rails, which can be horizontally adjusted. Front panel mounting rails are tapped 10-32; rear rails are pierced 9/32" dia. Caster bracket in base accepts Bud RC-7758 casters. All cabinets accept standard 19" panels. Shipped completely assembled. Width, 24 3/16". Available in royal blue or gray textured enamel with clear anodized aluminum cowl, or gold textured enamel with gold anodized aluminum cowl. **Specify Color When Ordering.** **30" deep racks also available; prices on request.**

23 7/8" OUTSIDE DEPTH—20 1/2" CLEAR INSIDE DEPTH

With Plain Sides and Door				Size, Inches			With Louvered Sides and Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Ht.	Panel Space	Wt., Lbs.	Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-2000	$228.85	$205.95	$183.10	30 1/4	21	125	E-2016	$243.55	$219.20	$194.85
E-2001	251.10	226.00	200.90	40 3/4	31 1/2	150	E-2017	263.95	237.55	211.15
E-2002	256.15	230.55	204.90	44 1/4	35	155	E-2018	269.10	242.20	215.30
E-2003	281.85	253.65	225.50	51 1/4	42	167	E-2019	296.25	266.65	237.00
E-2004	182.05	163.85	145.65	61 3/4	52 1/2	205	E-2020	334.75	301.30	267.80
E-2005	340.45	306.40	272.35	70 1/2	61 1/4	219	E-2021	357.90	322.10	286.30
E-2006	374.95	337.45	299.95	79 1/4	70	240	E-2022	394.15	354.75	315.30
E-2007	391.35	352.20	313.10	88	78 3/4	262	E-2023	411.40	370.25	329.10

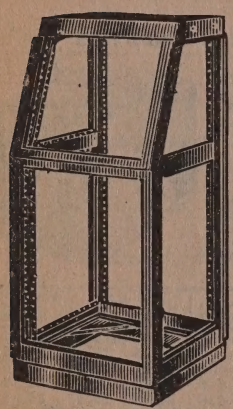
27 3/8" OUTSIDE DEPTH—24" CLEAR INSIDE DEPTH

E-2008	$235.50	$211.95	$188.40	30 1/4	21	135	E-2024	$247.50	$222.75	$198.00
E-2009	264.60	238.15	211.70	40 3/4	31 1/2	160	E-2025	277.95	250.15	222.35
E-2010	271.35	244.20	217.10	44 1/4	35	165	E-2026	285.10	256.60	228.10
E-2011	303.30	272.95	242.65	51 1/4	42	187	E-2027	318.70	286.85	254.95
E-2012	325.20	292.70	260.15	61 3/4	52 1/2	222	E-2028	341.80	307.60	273.45
E-2013	367.30	330.55	293.85	70 1/2	61 1/4	235	E-2029	385.95	347.35	308.75
E-2014	403.30	362.95	322.65	79 1/4	70	265	E-2030	423.85	381.45	339.10
E-2015	427.05	384.35	341.65	88	78 3/4	280	E-2031	448.65	403.80	358.90

SERIES 2000 INCLINED PANEL CABINET RACKS

Same modern styling and rugged construction as upright racks above, with 20° inclined panel for comfortable viewing of mounted instruments. Panel mounting rails in front vertical and inclined panel sections, as well as in the rear, are adjustable front-to-rear. Height, 51 1/4"; width, 24 3/16"; outside depth, 23 7/8"; clear inside depth, 20 1/2". Weight, 173 lbs. Available in same textured finishes as above. **Specify Color When Ordering.** **30" deep racks also available; prices on request.**

With Plain Sides and Door				Inclined Panel Space	Vertical Panel Space	With Louvered Sides and Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7			Bud No.	Net Each, Lots of 1-2	3-4	5-7
SE-2064	$279.40	$251.45	$223.50	10 1/2"	29 3/4"	SE-2067	$294.40	$264.95	$235.50
SE-2065	294.40	264.95	235.50	15 3/4"	24 1/2"	SE-2068	315.85	284.25	252.70
SE-2066	294.40	264.95	235.50	17 1/2"	22 3/4"	SE-2069	315.85	284.25	252.70



Inclined Panel Cabinet Rack

ADD-A-RACKS AND ACCESSORIES FOR SERIES 2000

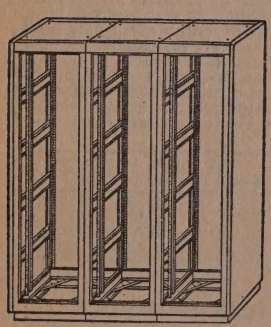
ADD-A-RACK SERIES FOR UPRIGHT CABINETS

Used as an add-on unit to join Series 2000 upright racks into a bank of two or more. Each assembly consists of a frame, top, bottom, rear door and cowlings. One standard rack must be used, plus any number of Add-A-Rack units. **Specify Color When Ordering;** same as above racks.

With Plain Door						With Louvered Door					
Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Wt., Lbs.
AE-2032	E-2000	$194.85	$175.35	$155.90	AE-2048	E-2016	$202.50	$182.25	$162.00	90
AE-2033	E-2001	202.35	182.10	161.90	AE-2049	E-2017	209.80	188.80	167.85	110
AE-2034	E-2002	212.40	191.15	169.90	AE-2050	E-2018	211.30	190.15	169.05	113
AE-2035	E-2003	222.25	200.05	177.80	AE-2051	E-2019	230.10	207.10	184.10	115
AE-2036	E-2004	242.85	218.55	194.30	AE-2052	E-2020	248.50	223.65	198.80	145
AE-2037	E-2005	271.05	243.95	216.85	AE-2053	E-2021	272.65	245.40	218.10	148
AE-2038	E-2006	284.50	256.05	227.60	AE-2054	E-2022	300.60	270.55	240.50	152
AE-2039	E-2007	324.45	292.00	259.55	AE-2055	E-2023	310.80	279.70	248.65	158
AE-2040	E-2008	217.90	196.10	174.30	AE-2056	E-2024	194.85	175.35	155.90	120
AE-2041	E-2009	226.80	204.10	181.45	AE-2057	E-2025	212.85	191.55	170.30	130
AE-2042	E-2010	237.45	213.70	189.95	AE-2058	E-2026	217.05	195.35	173.65	135
AE-2043	E-2011	240.60	216.55	192.50	AE-2059	E-2027	241.65	217.50	193.30	138
AE-2044	E-2012	255.60	230.05	204.50	AE-2060	E-2028	254.50	229.05	203.60	142
AE-2045	E-2013	290.40	261.35	232.30	AE-2061	E-2029	289.05	260.15	231.25	164
AE-2046	E-2014	319.60	287.65	255.70	AE-2062	E-2030	318.60	286.75	254.90	168
AE-2047	E-2015	343.90	309.50	275.10	AE-2063	E-2031	342.15	307.95	273.70	172

ADD-A-RACK SERIES FOR INCLINED PANEL CABINETS

ASE-2084	SE-2064	$236.55	$212.90	$189.25	ASE-2087	SE-2067	$239.25	$215.35	$191.40	115
ASE-2085	SE-2065	250.75	225.70	200.60	ASE-2088	SE-2068	256.95	231.25	205.55	115
ASE-2086	SE-2066	250.75	225.70	200.60	ASE-2089	SE-2069	256.95	231.25	205.55	120



Add-A-Rack

ACCESSORY FRONT DOORS FOR UPRIGHT CABINETS

Plain Type			For Vertical Panel Space of	Wt., Lbs.	Louvered Type			
Bud No.	Net Each, Lots of 1-2	3-4	5-7			Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-9000	$54.70	$49.25	$43.75	21"	15	E-9020	$62.35	$56.10	$49.90
E-9001	61.00	54.90	48.80	31 1/2"	18	E-9021	69.55	62.60	55.65
E-9002	64.45	58.00	51.55	35"	19	E-9022	73.45	66.10	58.75
E-9003	69.15	62.25	55.30	42"	23	E-9023	78.85	70.95	63.10
E-9004	71.55	64.40	57.25	52 1/2"	27	E-9024	81.60	73.45	65.30
E-9005	75.25	67.75	60.20	61 1/4"	29	E-9025	85.75	77.20	68.60
E-9006	78.75	70.90	63.00	70"	31	E-9026	89.80	80.80	71.85
E-9007	84.85	76.35	67.90	78 3/4"	33	E-9027	96.70	87.05	77.35

ACCESSORY FRONT DOORS FOR INCLINED PANEL CABINETS

E-9008	$67.80	$61.00	$54.25	29 3/4"	11	E-9028	$77.35	$69.60	$61.90
E-9009	62.95	56.65	50.35	24 1/2"	10 1/2	E-9029	71.70	64.55	57.35
E-9010	61.95	55.75	49.55	22 3/4"	9	E-9030	70.65	63.60	56.50

DESK TOPS FOR SERIES 2000 CABINET RACKS

Provides a smooth writing surface or shelf on upright or inclined panel cabinet rack. Two pre-slotted supporting channels bolt to panel mounting rails. Antique white Formica* surface. Supports over 200 lbs. **Size:** 24 3/16" wide, 19 1/2" deep, 3 1/16" high. Specify gray, royal blue or gold textured enamel finish.

Bud No.	Fits Cabinet with Depth of	Supporting Channel	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
DT-2960	23 7/8"	21 3/32"	29	$65.95	$59.35	$52.75
DT-2962	27 3/8"	24 25/32"	30	68.05	61.25	54.45

*Registered Synthane Corp. trademark.

Desk Top

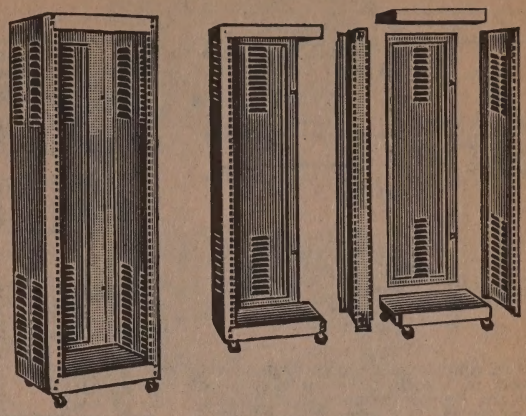
DELUXE RELAY RACKS WITH ADD-A-RACK

High quality relay racks made of 16-gauge steel with 7/64" panel supports. Panel mounting supports are recessed so that no panel edges will be exposed. Both back and sides are fully louvered for best ventilation. Snap catches are positioned on the door. Rounded corners give streamlined appearance. Base constructed with four special supports so that casters may be applied to base directly for mobility. Racks are 22" wide to accept all standard 19" panels.

Super Deluxe 2-Door Series Relay Racks are equipped with adjustable panel mounting supports permitting forward and backward adjustment of panels for more efficient use of space. Adjustable points are at 1" intervals for 9" to 15" clearance behind panels. Super Deluxe 2-Door Racks are fitted with both front and rear doors, the rear to cover any equipment behind the panel while making it easily accessible. The front door, not louvered, conceals controls on the front panel.

Add-A-Rack Series—Where relay racks are to be joined in series. Provides additional strength and improved appearance. Includes door, top, bottom and coupling unit, all that is needed to make a double relay rack out of a single Deluxe series.

All Racks Listed are shipped knocked-down with all necessary hardware and assembly instructions. Casters optional. When ordering specify finish. Add suffix **"HG"** for gray hammertone; suffix **"GR"** for gray rinkletex; suffix **"BR"** for black rinkletex.



SUPER DELUXE TWO-DOOR RACKS WITH 19" WIDE PANEL SPACE

Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-2174	42 1/16	36 3/4	102	$139.45	$125.50	$111.55
CR-2171	47 5/16	42	104	150.95	135.50	120.45
CR-2172	66 5/16	61 1/4	138	194.40	174.95	155.50
CR-2175	75 5/16	70	150	209.00	188.10	167.20
CR-2173	82 5/16	77	163	233.35	210.00	186.70

ADD-A-RACK ASSEMBLIES

Includes door, top, bottom and coupling unit for add-on use with racks indicated.

Bud No.	For Use With Rack No.	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
AR-1778	CR-1774	70	$ 99.05	$ 89.15	$ 79.25
AR-1775	CR-1771	74	105.40	94.85	84.30
AR-1776	CR-1772	100	130.95	117.85	104.75
AR-1779	CR-1780	107	138.45	124.60	110.75
AR-1777	CR-1773	113	160.75	144.70	128.60
AR-2278	CR-2074	86	110.05	99.05	88.05
AR-2275	CR-2071	102	124.30	111.85	99.45
AR-2276	CR-2072	110	155.70	140.15	124.55
AR-2279	CR-2075	120	158.90	143.00	127.10
AR-2277	CR-2073	130	189.45	170.50	151.55

DELUXE RELAY RACKS WITH 19" WIDE PANEL SPACE 17 1/8" Overall Depth

Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1774	42 1/16	36 3/4	82	$100.85	$ 90.75	$ 80.70
CR-1771	47 5/16	42	92	114.05	102.65	91.25
CR-1772	66 5/16	61 1/4	115	142.85	128.55	114.30
CR-1780	75 5/16	70	125	146.55	131.90	117.25
CR-1773	82 5/16	77	135	164.50	148.05	131.60

EXTRA DEEP DELUXE RACKS WITH 19" WIDE PANEL SPACE

Same as above, except 22 1/8" deep instead of 17 1/8" deep.

Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-2074	42 1/16	36 3/4	98	$121.10	$109.00	$ 96.90
CR-2071	47 5/16	42	102	141.55	127.40	113.25
CR-2072	66 5/16	61 1/4	137	175.60	158.05	140.50
CR-2075	75 5/16	70	148	174.70	157.25	139.75
CR-2073	82 5/16	77	159	203.55	183.20	162.85

DELUXE TELEPHONE-TYPE RELAY RACKS

Sturdy open rack with extra strength and greater capacity. Upright U-member is unitize-welded with ventilation provided at top. Two panel-mounting rails, at front and rear, tapped 10-32 with W.E. spacing. Made of 12 ga. steel throughout. Chassis-type base drilled for RC-7756 casters. Triangular brackets hold uprights to base; holes provided on both sides for bolting racks together in "Add-A-Rack" manner. Add suffix **HG** for gray hammertone finish; **BR** for black rinkletex; **GY** for gray rinkletex. Racks have 20 7/8" base width and take 19" wide panels.

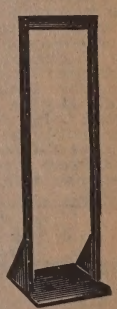
Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Net Each, Lots of 1-9	10-14	15-19
RR-1367	64 5/8	61 1/4	$ 97.20	$ 87.50	$77.75
RR-1368	73 3/8	70	104.55	94.10	83.65
RR-1369	80 3/8	77	116.30	104.65	93.05

RACK SHELVES

Heavy gauge steel shelves with 1" flange for rigidity and strength. Mount on chassis supporting angles in rack to hold power supplies, modulators, etc. Width 19". Black enamel finish.

Bud No.	Depth, Inches	Weight, Lbs.	Net Each, Lots of 1-24	25-49	50-99
CB-1976	15	6	$7.85	$7.05	$6.30
CB-1977	12	5	6.20	5.60	4.95

TELEPHONE-TYPE RELAY RACKS



Heavy Duty Model RR-1265: Two 3 1/2" x 5" x 1/4", 20 3/8" long angles form base. Steel channels are 3" x 1 3/8", 71 29/32" long. Cross bars are 1/8" x 2 3/32" angles. Panel holes tapped 12-24 with W.E. space. Black rinkletex finish only. Usually bolted to floor.
Standard Models: 3" channels and crossbars of 7/64" steel. Base has chassis type bottom with side angles. Base drilled for RC-7756 casters. Suffix **BR**, black rinkletex; **HG**, gray hammertone.

FOR 19" WIDE PANELS

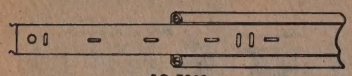
Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Net Each, Lots of 1-9	10-14	15-19
RR-1263	35 39/64	31 1/2	$ 45.60	$ 41.05	$36.50
RR-1363	40 55/64	36 3/4	43.85	39.45	35.10
RR-1264	70 39/64	66 1/2	52.10	46.90	41.70
RR-1364	75 55/64	71 3/4	54.80	49.30	43.85
RR-1366	81 7/64	77	59.85	53.85	47.90
RR-1265	72 5/32	66 1/2	121.10	109.00	96.90

TABLE-MOUNT TELEPHONE RACK

Sturdy rack with chassis type base mounts heavy components on table where enclosures are not required. Panel mount rails recessed for flush mount of 19" panels. Shipped knocked down. Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**).

Bud No.	Size, Inches Height, Overall	Size, Inches Panel Space	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
RR-1248	24	21	14 1/4	$20.90	$18.85	$16.75
RR-1249	31	28	16 3/4	24.70	22.25	19.75

PRECISION SLIDING MECHANISMS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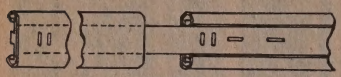
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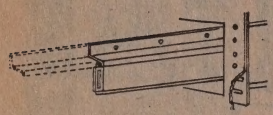

AS-5080

All steel commercial design provides a wide variety of models for a wide range of purposes. Provides smooth, light telescoping movement with unsurpassed reliability and minimal wear. **Specifications:** Slide members and component parts made from work hardened, cold rolled steel; bearings are nickel-plated carburized steel. Electrozinc plate finish; grease is high-low temperature type. **Mounting:** Units require 2 each BAS-5100 front mounting brackets and 2 each BAS-5101 rear mounting brackets per pair to attach slides to EIA rails. One each NAS-5110 rail bar nut used with each mounting bracket.

2 MEMBER, ¾ EXTENSION FRICTION DISCONNECT

Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	Net per Pair, Lots of 1-4	5-9	10-24
AS-5000	12	9	140	$14.80	$13.30	$11.85
AS-5001	16	12	120	17.20	15.50	13.75
AS-5002	20	15	92	18.75	16.90	15.00
POSITIVE STOP						
AS-5060	12	9	108	$13.50	$12.15	$10.80
AS-5061	16	12	95	14.65	13.20	11.70
AS-5062	20	15	82	15.40	13.85	12.30
3 MEMBER, FULL EXTENSION POSITIVE STOP						
AS-5020	12	12.88	175	$35.20	$31.70	$28.15
AS-5021	16	16.88	160	39.00	35.10	31.20
AS-5022	20	20.88	142	42.15	37.95	33.70
POSITIVE W/FRONT DISCONNECT, ⅜ SIDE SPACE						
AS-5040	12	11.88	120	$46.50	$41.85	$37.20
AS-5041	16	15.88	108	50.40	45.35	40.30
AS-5042	20	19.88	92	53.85	48.45	43.10

DUAL MEMBER W/DRAWER SECTION, FULL EXTENSION AND LIFT-OFF DISCONNECT

Drawer section lengths are equal to slide lengths. Provides full extension in ⅜" side space. Equipped with stationary front, and adjustable rear mounting brackets for EIA rails. Chassis mounts to drawer section. Removable by lining up open slot in drawer section over tab in moving member and lifting off.

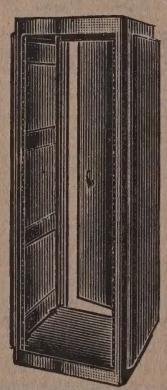
AS-5080	12	12	80	$42.75	$38.50	$34.20
AS-5081	16	16	70	43.65	39.30	34.90
AS-5082	20	20	60	48.00	43.20	38.40

MOUNTING BRACKETS

Bud No.	Description	Net Each, Lots of 1-4	5-9	10-24	Bud No.	Description	Net Each, Lots of 1-4	5-9	10-24
BAS-5100	Front bracket	$1.90	$1.70	$1.50	BAS-5103	Rear bracket*	$1.90	$1.70	$1.50
BAS-5101	Rear bracket	1.90	1.70	1.50	NAS-5110	Bar nut	1.90	1.70	1.50
BAS-5102	Front bracket*	1.90	1.70	1.50	SB-5107	Adapter kit†	6.30	5.65	5.05

*For use with 3 member front disconnect types only. †For use with Series 2000, 60 and Classic II.

PRESTIGE BALL CORNER RACKS



Attractive, practical housing for permanent or mobile instrumentation. Standard Prestige relay rack consists of framework, top, bottom, two ball cornered sides, and a ball corner door. Sides attach to frame by means of a tongue-and-slot arrangement at bottom and two screws at top. Sides easily removable for access. Drilled and tapped panel mounting rails on all four vertical members of frame. Doors mount from either left or right side. Slotted base takes ball-cornered side panels on any of the four sides. Door and side clearance permits covering of equipment without damage to knobs or controls. Provision made for recessed casters. Extra doors available for placing on any of the sides. Knockout holes provided for attaching two or more units together. Bottom will support 500 lbs., panel rails 200 lbs. suspended vertically between rails. Units take Bud SD-1717 sliding drawer assembly or 60-2368 drawer. Shipped knocked-down, with necessary assembly hardware. **Gray hammertone finish only. Furnished with adjustable panel mounting rails.**

Bud No.	Size, Inches Overall Height	Panel Space	Net Each, Lots of 1-9	10-14	15-19
CR-2280	66 9/16	61¼	$237.80	$214.00	$190.25
CR-2281	71 13/16	66½	243.65	219.30	194.90
CR-2282	82 5/16	77	273.85	246.45	219.10

EXTRA DOORS FOR ABOVE

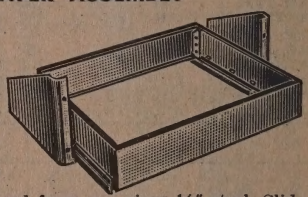
Bud No.	For Use With	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
DR-2290	Door for CR-2280	28	$29.75	$26.75	$23.80
DR-2291	Door for CR-2281	33	34.75	31.30	27.80
DR-2292	Door for CR-2282	39	39.10	35.20	31.30

PRESTIGE ADD-A-RACKS

Where relay racks are to be joined in series the Add-A-Rack assembly is lower in cost yet provides additional strength and improved appearance. Consists of top, bottom, rear door and framework. Made of 16 gauge steel. Extra ball corner doors will fit adjustable panel mounting rails which are recessed so that panel will be flush with face of rack. Add-A-Racks may be added at any time as needed. Gray hammertone finish.

Bud No.	Used to Add-A-Rack to	Net Each, Lots of 1-9	10-14	15-19
AR-2284	CR-2280	$179.85	$161.85	$143.90
AR-2286	CR-2281	194.40	174.95	155.50
AR-2287	CR-2282	218.25	196.45	174.60

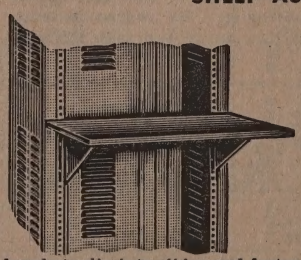
SLIDING DRAWER ASSEMBLY



Ideal for use as a record player mounting base, typewriter base, apparatus and instrument base, writing desk, etc. Installs quickly and simply in any standard rack. Can't fall out or tilt. Provides a completely safe mounting base for anything put on it. Ball bearing suspension for easy sliding. Chassis formed from one-piece 14 gauge aluminum; electro-welded. Support brackets formed from one-piece ⅛" steel. Slide rail fastens securely to chassis, slides in and out easily on channeled ball bearings. Stop screw on slide rail prevents drawer from falling out of channel. Support brackets finished in black, channel finished in natural aluminum; chassis, slide and plate finished in light gray hammertone. Will support up to 30 lbs. **Chassis Size:** 16¾" x 14" x 3", with ½" flange top and bottom. Drawer plate fastens to top or bottom.

Bud No.	Description	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
SD-1717	Sliding drawer	5	$27.40	$24.65	$21.90
TP-1718	Drawer plate	1½	6.60	5.95	5.30

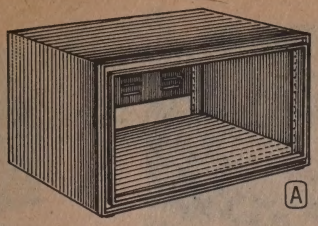
SHELF ASSEMBLY



Immediately adds extra utility to a standard rack at very little cost. Useful as a desk, work space, etc. Gray or black rinkletex finish or gray hammertone finish will match all standard Bud rack finishes. Can't fall off or tilt; will support any reasonable weight. Shelf portion supported by two brackets, punched to fit standard panel mounting strips. No panel support needed but can be attached over panel if desired. Slides welded to bottom of shelf; mounting brackets slip into slides and fasten with two screws. All necessary hardware furnished. Formed of 16 gauge steel; ⅝" flange on all three sides; overall height, 7⅛". Brackets are 7" high. Specify black rinkletex (suffix **BR**), gray rinkletex (suffix **GR**), or light gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches D. x W.	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
SA-1719	16 x 22	13¼	$21.95	$19.75	$17.55
SA-1720	20 x 22	15¼	22.20	20.00	17.75

BUD Metal Cabinets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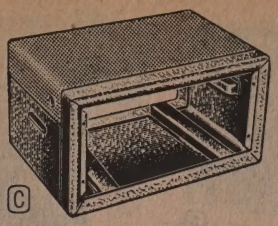
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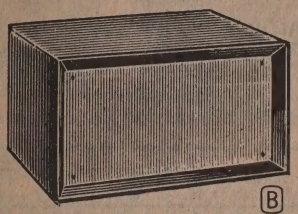
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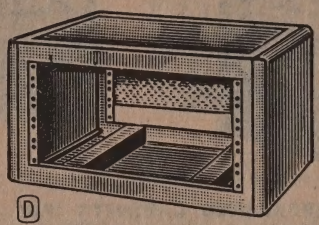

D

STYLIST SERIES CABINET (FIG. A)

Highly modern cabinet designed to give you the style and construction advantages that add value to your products. Square-corner design, aluminum extrusion framing of front panel lends a contemporary dimension which complements the appearance of your product. Full width flanges along top and bottom of cabinet add strength at each corner. No tilt, no sway when cabinet is loaded; panel dimensions remain constant. Load bearing capacity is 500 lbs. Constructed of 16 gauge cold rolled steel. Structure is self-supporting, no internal framework. Has 16 gauge steel louvered rear panel, 1¾" high opening for cable accessories. Front and rear openings meet E.I.A. standards, accept either 19" panels or Stylist Series doors. Self-adhesive rubber feet furnished. Specify suffix for color: **RB**, royal blue; **HG**, hammertone gray. Example: S-1640**RB**. **Size:** 20 1/16" w. x 15¼" d., overall.

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Overall Height	Panel Space		1-4	5-9	10-14
S-1640	8 3/16	7	26¾	$ 79.15	$71.25	$63.30
S-1641	10 9/16	8¾	29	82.90	74.60	66.30
S-1642	12 5/16	10½	31	87.25	78.55	69.80
S-1643	14 1/16	12¼	33	90.85	81.75	72.70
S-1644	15 13/16	14	35¼	94.75	85.30	75.80
S-1645	19 9/16	15¾	37¼	105.15	94.65	84.10

FRONT DOORS FOR STYLIST SERIES CABINETS

Overall width, 19". Specify color by suffix, **RB**, royal blue; **HG**, hammertone gray. Example: SD-540**RB**.

Bud No.	Height, In.	Wt., Lbs.	Fits Cabinet	Net Each, Lots of		
				1-4	5-9	10-14
SD-540	7	4¾	S-1640	$17.30	$15.55	$13.85
SD-541	8¾	5½	S-1641	18.55	16.70	14.85
SD-542	10½	6¼	S-1642	19.35	17.40	15.50
SD-543	12¼	7	S-1643	20.05	18.05	16.05
SD-544	14	7¾	S-1644	21.40	19.25	17.10
SD-545	15¾	8½	S-1645	22.55	20.30	18.05

SHADOW CABINETS (FIG. B)

Front panel recessed 1". Front edge of body is beveled. Body of 18 gauge and panels of 16 gauge steel. Four rubber feet. Available in light gray hammertone finish only.

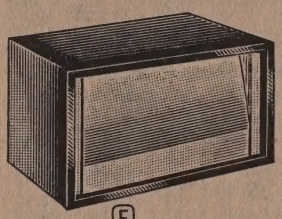
Bud No.	Overall Size, In. W. x H. x D.	Uses Bud Chassis		Net Each, Lots of		
		AC-	CB-	1-24	25-49	50-99
SB-2140	14¼ x 8 x 10	424	704	$16.85	$15.15	$13.50
SB-2141	13¼ x 7½ x 9	407	1193	13.45	12.10	10.75
SB-2142	17 x 9½ x 11	411	666	22.40	20.15	17.90
SB-2143	15½ x 6 x 9	409	1194	12.70	11.45	10.15

STANDARD PRESTIGE CABINETS (FIG. C)

Has two supporting rails, laterally movable to fit any chassis width, and shielded handle slots. Finger holes in cover for easy lifting. Of 16 gauge steel. Takes 19" panels. With embossed feet. **Size:** 21⅝" w. x 14¾" d. overall. Gray hammertone finish.

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Overall Height	Panel Space		1-14	15-24	25-34
C-1440	9 3/16	7	25	$63.90	$57.50	$51.10
C-1441	11 5/16	8¾	26	67.20	60.50	53.75
C-1442	13 1/16	10½	28½	70.15	63.15	56.10
C-1550*	9 3/16	7	23½	68.95	62.05	55.15
C-1551*	11 5/16	8¾	25	71.80	64.60	57.45
C-1552*	13 1/16	10½	27½	75.90	68.30	60.70

*With perforated cover; others solid.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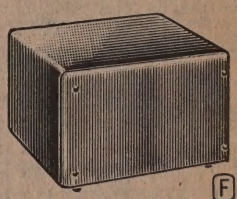
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PRESTIGE VERSA-CABINETS (FIG. D)

Balled corner, welded steel framework; sides top and bottom easily attached. Standard 19" panels used to enclose front or top. Has removable channels for shelf or chassis. Opening at back, 1¾" x 17 15/16" for controls, leads, etc. Cabinets may be attached side-to-side or stacked vertically. Perforated top panels and side handles available Gray Hammertone (**HG**) only. **Size:** 23 3/16" w. x 15¾" d., overall. Weight, 27 to 35 lbs.

Bud No.	Size, Inches			Net Each, Lots of		
	Overall Height	Panel		1-9	10-14	15-19
		Space	Rear			
PC-1700	8¾	5¼	3½	$63.60	$57.25	$50.90
PC-1701	10½	7	5¼	66.95	60.25	53.55
PC-1702	12¼	8¾	7	68.65	61.80	54.90
PC-1703	14	10½	8¾	77.55	69.80	62.05
PC-1704	15¾	12¼	10½	81.85	73.65	65.50
PC-1710	Perforated steel top plate, 12¼ x 19			6.95	6.25	5.55

FUTURA CABINETS (FIG. E)

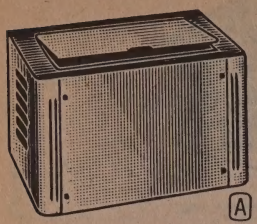
Handsome housing of 20 and 18 gauge steel. Four rubber feet. Numbers MD-1960 thru MD-1962 have vertical front panel; all others (Fig. E) have inclined front panel rising 2" vertically, then inclining 15°. Specify color by suffix: **BBY**, dark blue textured body with light blue textured panels; **HG**, gray hammertone body with light gray textured panels.

Bud No.	Overall Size, In. W. x H. x D.	Net Each, Lots of		
		1-24	25-49	50-99
MD-1960	13 x 8 x 7	$16.20	$14.60	$12.95
MD-1961	14 x 9 x 8	17.55	15.80	14.05
MD-1962	16 x 9 x 8	18.10	16.30	14.50
MD-1963	13 x 8 x 7	19.10	17.20	15.30
MD-1964	14 x 9 x 8	20.45	18.40	16.35
MD-1965	16 x 9 x 8	21.90	19.70	17.50

CONTOUR UTILITY CABINETS (FIG. F)

Constructed of 20 gauge steel. Both front and rear panels are removable; the front panel is solid while the rear panel is louvered for proper ventilation. Four rubber feet, attached to base, prevent scratching surface the unit is placed on. Body is textured dark gray enamel; panel is textured light gray enamel.

Bud No.	Overall Size, In. W. x D. x H.	Net Each, Lots of		
		1-24	25-49	50-99
CU-463	6 7/32 x 3¾ x 4 7/32	$ 9.85	$ 8.85	$ 7.90
CU-465	6 7/32 x 5¾ x 4 7/32	11.20	10.10	8.95
CU-585	8 7/32 x 5¾ x 5 7/32	14.35	12.90	11.50
CU-587	8 7/32 x 7¾ x 5 7/32	15.85	14.25	12.70
CU-7125	12 7/32 x 5¾ x 7 7/32	14.60	13.15	11.70
CU-7127	12 7/32 x 7¾ x 7 7/32	15.35	13.80	12.30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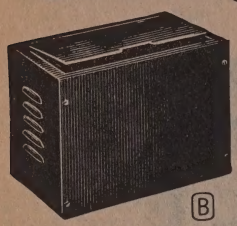
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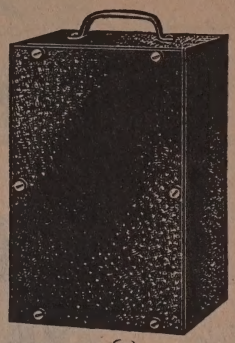

C

STREAMLINED CABINETS (FIG. A)

Ideal for housing devices not requiring excessive depth. Recessed, hinged cover with convenient finger lift for access. Panels fit flush with embossed, rounded corner fronts. Back opening 3½" h. provides for cables or rear controls; louvered sides provide ample ventilation. **Size:** 8¼" d. x 8" h. overall. Specify black rinkletex (suffix **BR**), gray rinkletex (suffix **GR**) or gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches Overall Width	Size, Inches Panel Space	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CD-1480	10½	8 x 8	6¼	$13.70	$12.35	$10.95
CD-1481	12½	8 x 10	6¾	13.85	12.45	11.10
CD-1482	14½	8 x 12	7½	14.80	13.30	11.85
CD-1483	16½	8 x 14	7¾	15.95	14.35	12.75
CD-1484	18½	8 x 16	9¼	16.85	15.15	13.50
CD-1485*	20⅝	12 x 18	17½	33.05	29.75	26.45

*Depth is 12".

INSTRUMENT AND RECEIVER CABINETS (FIG. B)

Economy version of the Streamlined Cabinet series. Recessed, hinged cover provides access to contents. Front panel is attached with self-tapping screws. Louvers provide ample ventilation. Black rinkletex finish only.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
C-973	7 x 8 x 8	4¾	$10.20	$ 9.20	$ 8.15
C-993	7 x 10 x 8	5	12.35	11.10	9.90
C-994	7 x 12 x 8	6	12.70	11.45	10.15
C-995	7 x 14 x 8	7	13.55	12.20	10.85
C-1190	8 x 16 x 8	8½	19.05	17.15	15.25
C-975	9 x 15 x 11	12¼	23.15	20.85	18.50
C-999	12 x 18 x 12	18¼	25.20	22.70	20.15

CARRYING CASES (FIG. C)

A versatile cabinet that accepts a variety of equipment. Removable front and back panels; handle may be attached to top. Available in sturdy steel or lightweight aluminum to suit your requirements.

STEEL CASES

Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**) finish when ordering.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CC-1095	5 x 6 x 9	3	$ 6.50	$ 5.85	$ 5.20
CC-1091	5 x 9 x 6	3	6.50	5.85	5.20
CC-1096	6 x 7 x 12	5¼	9.10	8.20	7.30
CC-1092	6 x 12 x 7	5	9.10	8.20	7.30
CC-1097	7 x 7¾ x 15	7¼	10.25	9.25	8.20
CC-1100	8 x 10 x 10	7	10.45	9.40	8.35
CC-1093	7 x 15 x 9	8	12.70	11.45	10.15

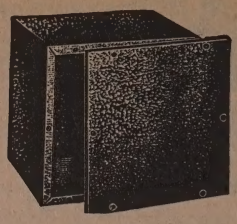
NATURAL FINISH ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
ACC-2095	5 x 6 x 9	1½	6.95	6.25	5.55
ACC-2091	5 x 9 x 6	1½	6.95	6.25	5.55
ACC-2096	6 x 7 x 12	2½	10.70	9.65	8.55
ACC-2092	6 x 12 x 7	2½	10.70	9.65	8.55

GRAY HAMMERTONE ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
ACC-2095HG	5 x 6 x 9	1½	$ 7.95	$ 7.15	$6.35
ACC-2091HG	5 x 9 x 6	1½	7.95	7.15	6.35
ACC-2096HG	6 x 7 x 12	2½	12.20	11.00	9.75
ACC-2092HG	6 x 12 x 7	2½	12.20	11.00	9.75

*Aluminum alloy 5005 H-14.


D

E

METAL UTILITY CABINETS (FIG. D)

Highly useful housing for all types of electronic equipment. Both font and back panels are removable for easy accessibility.

STEEL CABINETS

Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-883	2 x 4 x 4	¾	$ 2.50	$2.25	$2.00
CU-728	3 x 5 x 4	1	3.00	2.70	2.40
CU-729	4 x 5 x 6	1¾	3.75	3.40	3.00
CU-1098	6 x 6 x 6	2¼	5.10	4.60	4.10
CU-1099	5 x 6 x 9	3	5.75	5.20	4.60
CU-879	7 x 8 x 10	3¼	7.85	7.05	6.30
CU-1124	6 x 7 x 12	5	7.85	7.05	6.30
CU-880	8 x 10 x 10	6¼	9.10	8.20	7.30
CU-881	8 x 11 x 12	8½	10.10	9.10	8.10
CU-882	7 x 9 x 15	8¼	9.20	8.30	7.35

NATURAL FINISH ALUMINUM CABINETS*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
AU-1083	2 x 4 x 4	¼	$3.15	$2.85	$2.50
AU-1028	3 x 5 x 4	½	3.35	3.00	2.70
AU-1029	4 x 5 x 6	¾	3.75	3.40	3.00
AU-1039	6 x 6 x 6	1	5.60	5.05	4.50
AU-1040	5 x 6 x 9	1½	6.20	5.60	4.95

GRAY HAMMERTONE ALUMINUM CABINETS*

AU-1083HG	2 x 4 x 4	¼	$3.75	$3.40	$3.00
AU-1028HG	3 x 5 x 4	½	4.25	3.85	3.40
AU-1029HG	4 x 5 x 6	¾	4.50	4.05	3.60
AU-1039HG	6 x 6 x 6	1	5.95	5.35	4.75
AU-1040HG	5 x 6 x 9	1½	7.50	6.75	6.00

*Aluminum alloy 5005 H-14.

MINIATURE UTILITY CABINETS (FIG. E)

Ideal housing for construction of electronic devices. Front panel has a built-in chassis. Both front and rear panels are removable; fastened by self-tapping screws. Black rinkletex enamel finish.

Bud No.	Size, Inches W. x D. x H.	Size, Inches Chassis W. x D.	Net Each, Lots of 1-49	50-99	100-149
C-1793	4 x 4 x 2	3⅛ x 1⅞*	$2.90	$2.60	$2.30
C-1794	4 x 5 x 3	4⅛ x 2⅞*	3.35	3.00	2.70
C-1795	5 x 4 x 3	3⅛ x 2⅞†	3.65	3.30	2.90
C-1796	6 x 5 x 4	4⅛ x 3⅞‡	3.85	3.45	3.10
C-1797	5 x 6 x 4	5⅛ x 3⅞†	4.10	3.70	3.30
C-1798	6 x 6 x 6	4⅞ x 5⅞‡	5.25	4.75	4.20

*1" high. †1¼" high. ‡1¾" high.

UNIVERSAL SLOPING PANEL CABINETS

Fully enclosed and shielded housing with one-piece detachable back and sides fastened to body with four self-tapping screws. Components may be mounted on back, bottom, sides or front. Gray hammertone finish only.

ALUMINUM MODELS

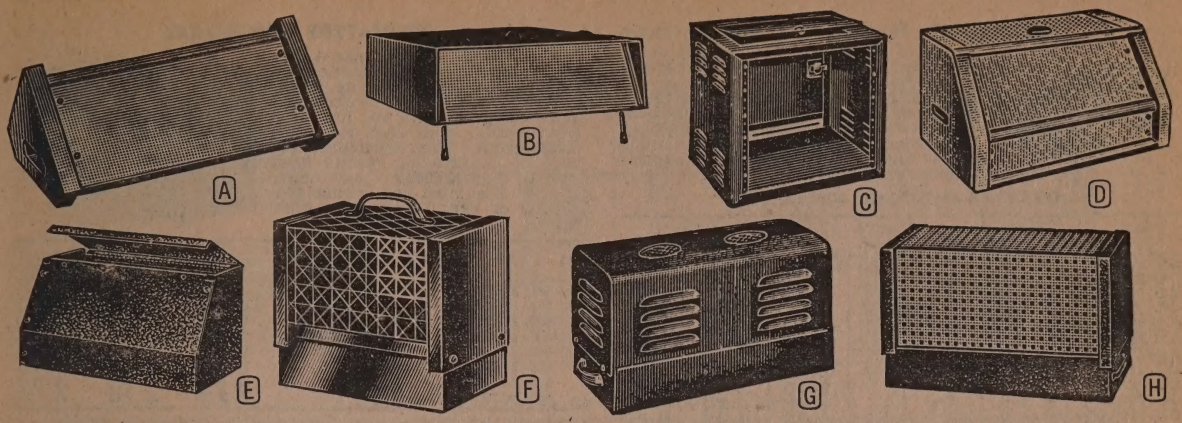
Aluminum alloy 5005 H-14.

Bud No.	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
AC-1610	4 x 4 1/16 x 4 19/64	3/8	$4.00	$3.60	$3.20
AC-1611	5 x 4 1/16 x 4 19/64	½	3.90	3.50	3.10
AC-1612	6 x 4 1/16 x 4 19/64	9/16	4.35	3.90	3.50
AC-1613	7 x 4 1/16 x 4 19/64	5/8	4.75	4.30	3.80

STEEL MODELS

C-1606	4 x 4 1/16 x 4 19/64	1	$3.25	$2.95	$2.60
C-1607	5 x 4 1/16 x 4 19/64	1	3.40	3.05	2.70
C-1608	6 x 4 1/16 x 4 19/64	1¼	3.65	3.30	2.90
C-1609	7 x 4 1/16 x 4 19/64	1½	4.35	3.90	3.50

BUD Cabinets and Foundations



"MARK-T" CABINETS (FIG. A)

Many applications in the realm of control enclosures. Of welded 16 ga. steel with removable front panel and hinged door. Angle of panel and door permit easy viewing of contents. Turn of knurled knob opens door latch. Recessed carrying handles. Four rubber feet. Gray textured body with light gray panel and door. Extra door or panel available on special order. All 6 3/64" h.

Bud No.	Size, Inches W. x D.	Panel or Door Area, Inches	Net Each, Lots of 1-14	15-24	25-34
MT-214	16 x 10 15/32	13 15/16 x 5 17/32	$52.35	$47.10	$41.90
MT-219	21 x 10 15/32	18 15/16 x 5 17/32	57.35	51.60	45.90
MT-224	26 x 10 15/32	23 15/16 x 5 17/32	67.45	60.70	53.95

"TILT-A-VIEW" CABINETS (FIG. B)

Artfully designed to present variable viewing angles excellent for observing meters, dials, etc. Two-piece, 18-ga. steel. Fast, easy access to interior. Two 2" high legs, detachable for changed viewing angle, have rubber feet. Can be mounted on desk, cabinet or wall. Hooded top. No screws in panels. Vinyl texture finish. Gray textured body with light sand panels.

Bud No.	Size, Inches W. x D. x H.	Net Each, Lots of 1-14	15-24	25-34
TV-2155	15 x 10 x 4 1/2	$14.60	$13.15	$11.70
TV-2156	16 x 12 x 6 1/2	17.10	15.40	13.70
TV-2157	17 x 14 x 8 1/2	24.80	22.30	19.85

DELUXE CABINET RACKS (FIG. C)

Heavy-gauge steel racks with recessed hinged door on top and snap catch; rounded corners. The five large sizes have hinged rear doors; others, welded rear panels. Louvered sides. Embossed metal feet. Specify black rinkletex (suffix **BR**), gray rinkletex (**GR**) or gray hammertone (**HG**). **Size:** 14 3/4" x 22" w. Fits 19" panels.

Bud No.	Size, Inches Overall Height	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1726	8 25/32	7	28	$39.40	$35.45	$31.50
CR-1741	10 9/16	8 3/4	30	41.85	37.65	33.50
CR-1740	12 5/16	10 1/2	34	49.10	44.20	39.30
CR-1742	14 1/16	12 1/4	37	50.50	45.45	40.40
CR-1739	15 13/16	14	40	68.55	61.70	54.85
CR-1743*	19 5/16	17 1/2	47	70.30	63.25	56.25
CR-1727*	22 13/16	21	51	72.05	64.85	57.65
CR-1744*	28 1/16	26 1/4	58	77.55	69.80	62.05
CR-1728*	33 5/16	31 1/2	68	82.40	75.15	65.90
CR-1745*	36 13/16	35	78	86.65	78.00	69.30

*These sizes have both top and rear doors.

HEAVY DUTY CABINET RACKS

Similar to above units with Add-A-Cab feature (similar to Add-A-Rack) for continuously expanding systems. Panel mounting rails are integral part of the sides. Removable rear door. Louvered sides and 2 1/2" x 17 7/8" opening in the bottom of the back assure adequate ventilation. Made of 16 ga. steel. **Size:** 17 7/8" d. x 22" w.

Bud No.	Size, Inches Overall Height	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1736	24 1/2	19 1/4	47	$70.70	$63.65	$56.55
CR-1737	31 1/2	26 1/4	56	75.90	68.30	60.70
CR-1738	40 1/4	35	67	90.25	81.25	72.20

ADD-A-CAB FOR ABOVE CABINET RACKS

Bud No.	For Use With	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
ACR-1936	CR-1736	41	$70.15	$63.15	$56.10
ACR-1937	CR-1737	47	86.35	77.70	69.10
ACR-1938	CR-1738	55	89.00	80.10	71.20

PRESTIGE SLOPING PANEL CABINETS (FIG. D)

Ventilated top opens completely. Removable panel trim bar permits installation or removal of panels with chassis attached. Top panel is swept back for easy viewing. Takes standard 19" panels. Shielded lifting handles. Rear opening 2 1/2" x 18" for controls, etc.; panel recess 1 1/4"; bottom panel 3 1/2" high. **Size:** 22" w. x 9 1/4" top depth. Gray hammertone finish only. Weight, 25, 27 and 30 lbs.

Bud No.	Size, In. H. x D.	Slope H., In.	Net Each, Lots of 1-14	15-24	25-34
C-1555	11 7/8 x 14 3/8	7	$72.55	$65.30	$58.05
C-1556	13 1/4 x 15 1/8	8 3/4	77.30	69.55	61.85
C-1557	14 3/4 x 16 1/8	10 1/2	82.90	74.60	66.30

SLOPING PANEL CABINETS (FIG. E)

Hinged top for easy access; front panel also removable. Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**).

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
C-1584	6 1/2 x 7 1/16 x 7 3/32	2 3/4	$ 7.75	$ 7.00	$ 6.20
C-1587	8 x 8 1/16 x 8	4	10.20	9.20	8.15
C-1585	6 1/2 x 9 1/16 x 7 3/32	2 1/2	8.50	7.65	6.80
C-1588	8 x 10 1/16 x 8	4 1/2	11.25	10.15	9.00
C-1586	6 1/2 x 11 1/16 x 7 3/32	3 3/4	9.75	8.80	7.80
C-1894	8 x 14 1/16 x 8	6	11.75	10.60	9.40
C-1892	8 x 13 1/16 x 8 15/32	5 1/2	13.20	11.90	10.55
C-1896	9 x 18 1/16 x 8 3/32	9 3/4	16.70	15.05	13.35
C-1893	10 x 18 1/16 x 10 1/2	12 1/2	17.20	15.50	13.75

MINIATURE AMPLIFIER FOUNDATION (FIG. F)

Compact amplifier foundation ideal for use with miniature components. Cover is perforated metal with attached handle for portability. Available in black rinkletex finish only.

Bud No.	Size, Inches Chassis	Ht.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-1754	5 x 7	6	2	$9.10	$8.20	$7.30

STREAMLINED FOUNDATIONS (FIG. G)

Attractive unit houses amplifiers and similar apparatus. Standard chassis with removable top cover with chrome trim. Sides and ends louvered. Handles attached to chassis. Overall height, 9"; chassis 3" high. Specify black rinkletex (suffix **BR**), or gray rinkletex (suffix **GR**).

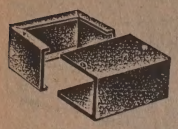
Bud No.	Size, Inches W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-1750	10 1/16 x 5	4 1/4	$15.70	$14.15	$12.55
CA-1751	12 1/16 x 7	5 3/4	18.55	16.70	14.85
CA-1752	17 1/16 x 7	7	19.85	17.85	15.90
CA-1753	17 1/16 x 10	9 3/4	21.40	19.25	17.10

STANDARD FOUNDATIONS (FIG. H)

Standard chassis with perforated cover for maximum ventilation. Handles are attached to chassis. Chassis 2 1/2" h., except CA-1128, 3" h. Overall height, 8 1/32", except CA-1128, 8 27/32". Black rinkletex finish only.

Bud No.	Size, Inches W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-699	9 5/8 x 5 1/8	3 3/4	$12.50	$11.25	$10.00
CA-1125	13 5/8 x 5 1/8	5	13.10	11.80	10.50
CA-1126	17 1/8 x 7 1/8	7 1/4	14.80	13.30	11.85
CA-1128	12 1/8 x 10 1/8	6 1/2	15.05	13.55	12.05

MINIBOXES, HANDY BOXES



Design of this box permits installation of more components than would be possible in the conventionally designed boxes the same size. Two-piece construction. **Either snap-lock or screw type.** The flange type construction assures adequate shielding. Made from heavy .040 ga. aluminum. Available in natural aluminum finish and gray hammertone finish.

GRAY HAMMERTONE MINIBOXES

Bud No.	Size, Inches L. x H. x W.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-2100A	2¾ x 2⅛ x 1⅝	¼	$1.50	$1.35	$1.20
CU-2101A	3¼ x 2⅛ x 1⅝	¼	1.50	1.35	1.20
CU-2102A	4 x 2⅛ x 1⅝	¼	1.60	1.45	1.30
CU-2103A	4 x 2¼ x 2¼	¼	1.75	1.60	1.40
CU-2104A	5 x 2¼ x 2¼	¼	1.90	1.70	1.50
CU-2105A	5 x 4 x 3	½	2.40	2.15	1.90
CU-2106A	5¼ x 3 x 2⅛	¼	2.10	1.90	1.70
CU-2107A	6 x 5 x 4	¾	3.00	2.70	2.40
CU-2108A*	7 x 5 x 3	¾	3.40	3.05	2.70
CU-2109A*	8 x 6 x 3½	1	4.45	4.00	3.55
CU-2110A*	10 x 6 x 3½	1¼	4.85	4.35	3.90
CU-2111A*	12 x 7 x 4	1¾	6.60	5.95	5.30
CU-2112A*	17 x 5 x 4	2¼	6.60	5.95	5.30
CU-2113A*	10 x 2 x 1⅝	½	2.50	2.25	2.00
CU-2114A*	12 x 2½ x 2¼	¾	3.35	3.00	2.70
CU-2115A	4 x 2 x 2¾	¼	1.75	1.60	1.40
CU-2116A	4¼ x 2¼ x 1½	¼	1.75	1.60	1.40
CU-2117A	3¼ x 2⅛ x 1⅛	¼	1.75	1.60	1.40

*.050" aluminum.

NATURAL FINISH MINIBOXES

CU-3000A	2¾ x 2⅛ x 1⅝	¼	$1.25	$1.15	$1.00
CU-3001A	3¼ x 2⅛ x 1⅝	¼	1.25	1.15	1.00
CU-3002A	4 x 2⅛ x 1⅝	¼	1.40	1.25	1.10
CU-3003A	4 x 2¼ x 2¼	¼	1.60	1.45	1.30
CU-3004A	5 x 2¼ x 2¼	¼	1.60	1.45	1.30
CU-3005A	5 x 4 x 3	½	1.75	1.60	1.40
CU-3006A	5¼ x 3 x 2⅛	¼	1.75	1.60	1.40
CU-3007A	6 x 5 x 4	¾	2.40	2.15	1.90
CU-3008A*	7 x 5 x 3	¾	3.00	2.70	2.40
CU-3009A*	8 x 6 x 3½	1	3.85	3.45	3.10
CU-3010A*	10 x 6 x 3½	1¼	4.20	3.80	3.35
CU-3011A*	12 x 7 x 4	1¾	5.75	5.20	4.60
CU-3012A*	17 x 5 x 4	2¼	5.75	5.20	4.60
CU-3013A*	10 x 2 x 1⅝	½	2.35	2.10	1.90
CU-3014A*	12 x 2½ x 2¼	¾	2.90	2.60	2.30
CU-3015A	4 x 2 x 2¾	¼	1.60	1.45	1.30
CU-3016A	4¼ x 2¼ x 1½	¼	1.60	1.45	1.30
CU-3017A	3¼ x 2⅛ x 1⅛	¼	1.40	1.25	1.10

*.050" aluminum.

HANDY BOXES

Similar to Miniboxes in design and construction, except made of 22 gauge steel. Black rinkletex finish only. Screw type only.

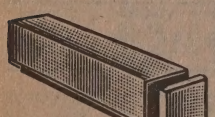
Bud No.	Size, Inches L. x H. x W.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
HB-1621	4¼ x 2¼ x 1½	¼	$2.90	$2.60	$2.30
HB-1622	4 x 2 x 2¾	½	2.90	2.60	2.30

ECONOBOX PRECISION DIECAST BOXES

Suitable for numerous uses where a small box is required. Diecast aluminum with close fitting, flange lid which attaches to bosses in the box by means of screws. Boxes are light weight and easily machined. CU-247 and CU-347 have 6 mounting holes for cover; all others have 4 mounting holes for cover. 6 x 32-½" flat head screws supplied. Height given includes cover.

Bud No.	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99
CU-123	1½ x 3 5/8 x 1 17/32	$2.25	$2.05	$1.80
CU-124	2 3/8 x 4 3/8 x 1 17/32	2.60	2.35	2.10
CU-234	3 11/16 x 4 11/16 x 2 7/32	4.00	3.60	3.20
CU-247	4 45/64 x 7 25/64 x 2 7/32	6.50	5.85	5.20
CU-347	4 45/64 x 7 25/64 x 3 7/32	7.10	6.40	5.70

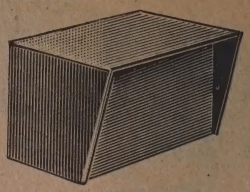
MINISLIDES



Ideal for housing components or assemblies where easy access to internally mounted parts is important. Can be mounted in a number of positions in a rack or cabinet. Accessibility achieved by removing sliding cover. Design of Minislide Box provides adequate shielding and protection from dust. Sturdily made of .050 aluminum. 4 self-tapping fastening screws included. Choice of gray hammertone (**HG**) or natural aluminum (**NA**).

Bud No.	Finish	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
MS-2150	(HG)	3⅛ x 13 x 2⅝	1	$7.75	$7.00	$6.20
MS-2151	(HG)	5⅛ x 13 x 2⅝	1½	8.70	7.85	6.95
MS-2152	(HG)	3⅛ x 17 x 2⅝	1¼	8.45	7.60	6.75
MS-3050	(NA)	3⅛ x 13 x 2⅝	1	5.75	5.20	4.60
MS-3051	(NA)	5⅛ x 13 x 2⅝	1½	7.00	6.30	5.60
MS-3052	(NA)	3⅛ x 17 x 2⅝	1¼	6.85	6.15	5.50

COWL-TYPE MINIBOXES

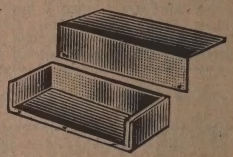


The cowl-type Minibox has a projecting cover to reduce glare on the panel from overhead lighting. It also provides protection for controls and dials. Cover has two box braces to which bottom is attached with sheet metal screws. When assembled, this type of construction results in a sturdy, rigid housing. Constructed of .040" aluminum and available in natural or light hammertone gray finish.

Bud No.	Overall Size, In. H. x W. x D.	Net Each, Lots of 1-49	50-99	100-149
SC-2130*	6 x 10 x 7	$11.75	$10.60	$ 9.40
SC-2131*	7 x 12 x 8	12.85	11.55	10.30
SC-2132*	3 x 8 x 5	6.75	6.10	5.40
SC-2133*	5 x 5 x 5	6.95	6.25	5.55
SC-3030†	6 x 10 x 7	8.50	7.65	6.80
SC-3031†	7 x 12 x 8	9.20	8.30	7.35
SC-3032†	3 x 8 x 5	4.85	4.35	3.90
SC-3033†	5 x 5 x 5	5.20	4.70	4.15

*Painted light gray hammertone. †Natural aluminum finish.

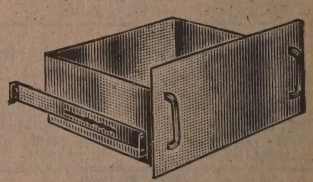
CONVERTA-BOXES



Versatile enclosure combines welded base and two-sided cover. Components or controls are easily mounted to any surface of the unit. All contents easily accessible. Cover and base are fastened by self-tapping screws. Rigid 20 ga. cadmium-plated steel.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CU-341	1½ x 4 x 3	½	$4.00	$3.60	$3.20
CU-452	2 x 5 x 4	¾	3.90	3.50	3.10
CU-482	2 x 8 x 4	1¼	4.20	3.80	3.35
CU-592	2½ x 9½ x 5	1¾	4.45	4.00	3.55
CU-622	2½ x 12 x 6	2¼	4.85	4.35	3.90
CU-712	2½ x 15 x 7	3	6.50	5.85	5.20

DRAWER WITH ADJUSTABLE SLIDES



Fits any cabinet or cabinet rack with 19" panel space. Slide bracket adjustable 16½" to 24¼" to fit any cabinet with depth 17" to 25½". Fastens by bracket to panel mounting rail in front and rear of cabinet. Nylon rollers for smooth movement. Hardware supplied. Specify color when ordering: Add suffix **HG** for gray hammertone; **BR** for black rinkletex; **GR** for gray rinkletex.

Bud No.	Inside Size, Inches	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
D-1721	16 19/32 x 6 1/32 x 16 13/64	19½	$76.90	$69.20	$61.50

UNIVERSAL METER CASES

Center hole punched for 2" meters, plus easily removed knock-out ring to provide fit for 3" meters. Single piece detachable back and sides fastened to case with self-tapping screws for easy installation and servicing. Two ⅜" knock-out holes in top provide for installation of feed-through insulators, switches, volume controls, etc. Gray hammertone finish only. **Size:** 4 19/64" h. x 4" w. x 4 1/16" d.

Bud No.	Construction	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CM-1935	Steel	¾	$2.90	$2.60	$2.30
CMA-1936	Aluminum	¼	3.50	3.15	2.80

WIDE UNIVERSAL METER CASE

Same as above, except extra wide to permit installation of small components along with a meter or accommodate a 4" meter. Made of 5005 H-14 aluminum. **Size:** 4 19/64" h. x 6" w. x 4 1/16" d.

Bud No.	Construction	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CMA-1930	Aluminum	½	$5.75	$5.20	$4.60

BUD Relay Rack Panels, Chassis

STANDARD RELAY RACK PANELS

Choice of steel or aluminum relay rack panels, 1/8" or 3/16" thick, in both 19" and 24" widths. Specify color when ordering, use suffix: **BR**, black rinkletex; **GR**, gray rinkletex; **HG**, gray hammertone; **BY**, light blue textured; **GY**, light gray textured; **WH**, white; **S**, sand. Aluminum panels 5005 H-36 or 2024 T-3 alloy.

Ht., In.	24" WIDE PANELS 1/8" 5005 H-36 ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149	19" WIDE PANELS 3/16" 5005 H-36 ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149
1¾	PA-2401	$ 4.60	$ 4.15	$ 3.70	PA-3101	$ 4.25	$ 3.85	$ 3.40
3½	PA-2402	5.95	5.35	4.75	PA-3102	5.95	5.35	4.75
5¼	PA-2403	7.95	7.15	6.35	PA-3103	7.95	7.15	6.35
7	PA-2404	9.20	8.30	7.35	PA-3104	9.75	8.80	7.80
8¾	PA-2405	11.50	10.35	9.20	PA-3105	11.50	10.35	9.20
10½	PA-2406	14.05	12.65	11.25	PA-3106	14.55	13.10	11.65
12¼	PA-2407	15.85	14.25	12.70	PA-3107	16.70	15.05	13.35
14	PA-2408	19.10	17.20	15.30	PA-3108	18.60	16.75	14.90
15¾	PA-2409	20.60	18.55	16.50	PA-3109	21.70	19.55	17.35
17½	PA-2410	21.45	19.30	17.15	PA-3110	23.70	21.35	18.95
19¼	PA-2411	23.65	21.30	18.90	PA-3111	25.95	23.35	20.75
21	PA-2412	26.05	23.45	20.85	PA-3112	28.40	25.55	22.70

19" WIDE 1/8" STEEL AND ALUMINUM PANELS

Ht., In.	1/8" STEEL Bud No.	Net Each, Lots of 1-49	50-99	100-149	1/8" 2024 T-3 ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149	1/8" 5005 H-36 ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149	Ht., In.
1¾	PS-1250	$ 2.35	$ 2.10	$ 1.90	PA-1131	$ 3.40	$ 3.05	$ 2.70	PA-1101	$ 2.75	$ 2.50	$ 2.20	1¾
3½	PS-1251	2.75	2.50	2.20	PA-1132	4.45	4.00	3.55	PA-1102	3.85	3.45	3.10	3½
5¼	PS-1252	3.40	3.05	2.70	PA-1133	5.95	5.35	4.75	PA-1103	5.00	4.50	4.00	5¼
7	PS-1253	3.70	3.35	2.95	PA-1134	7.60	6.85	6.10	PA-1104	6.35	5.70	5.10	7
8¾	PS-1254	5.00	4.50	4.00	PA-1135	8.45	7.60	6.75	PA-1105	7.10	6.40	5.70	8¾
10½	PS-1255	5.85	5.25	4.70	PA-1136	10.85	9.75	8.70	PA-1106	9.20	8.30	7.35	10½
12¼	PS-1256	6.50	5.85	5.20	PA-1137	12.45	11.20	9.95	PA-1107	10.60	9.55	8.50	12¼
14	PS-1257	7.50	6.75	6.00	PA-1138	14.45	13.00	11.55	PA-1108	12.10	10.90	9.70	14
15¾	PS-1258	8.10	7.30	6.50	PA-1139	15.60	14.05	12.50	PA-1109	13.45	12.10	10.75	15¾
17½	PS-1259	9.00	8.10	7.20	PA-1140	16.80	15.10	13.45	PA-1110	14.80	13.30	11.85	17½
19¼	PS-1260	9.85	8.85	7.90	PA-1141	18.10	16.30	14.50	PA-1111	16.10	14.50	12.90	19¼
21	PS-1261	11.35	10.20	9.10	PA-1142	20.90	18.80	16.70	PA-1112	17.85	16.05	14.30	21

SURFACE SHIELD PANELS

Bright aluminum alloy 5005 H-36 panels have blemish-free mill finish. Covered on both sides with sturdy, pressure-sensitive, white paper; protects against damage and useful for marking for drilling, positioning, etc. Standard notched sizes.

Ht., In.	1/8" ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149	3/16" ALUMINUM Bud No.	Net Each, Lots of 1-49	50-99	100-149
1¾	SFA-1831	$ 2.35	$ 2.10	$ 1.90	SFA-3161	$ 4.50	$ 4.05	$ 3.60
3½	SFA-1832	3.90	3.50	3.10	SFA-3162	6.35	5.70	5.10
5¼	SFA-1833	5.10	4.60	4.10	SFA-3163	8.25	7.45	6.60
7	SFA-1834	6.25	5.65	5.00	SFA-3164	10.35	9.30	8.30
8¾	SFA-1835	7.25	6.55	5.80	SFA-3165	12.20	11.00	9.75
10½	SFA-1836	9.45	8.50	7.55	SFA-3166	14.30	12.85	11.45
12¼	SFA-1837	10.85	9.75	8.70	SFA-3167	18.05	16.25	14.45
14	SFA-1838	12.20	11.00	9.75	SFA-3168	20.55	18.50	16.45
15¾	SFA-1839	13.85	12.45	11.10	SFA-3169	23.05	20.75	18.45
17½	SFA-1840	15.20	13.70	12.15	SFA-3170	25.45	22.90	20.35
19¼	SFA-1841	16.85	15.15	13.50	SFA-3171	28.05	25.25	22.45
21	SFA-1842	18.35	16.50	14.70	SFA-3172	30.30	27.25	24.25

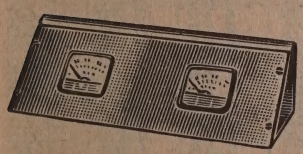
CHASSIS MTG. BRACKETS

Mounts chassis to panels; supports entire chassis weight. Heavy gauge steel 6½" high, cut away at bottom to mount flush to panel. Black enamel finish.

Bud No.	Depth, In.	Net per Pair, Lots of 1-49	50-99	100-149
MB-458	8	$2.90	$2.60	$2.30
MB-448	10	2.90	2.60	2.30
MB-459	11	3.35	3.00	2.70
MB-449	12	3.75	3.40	3.00
MB-460	13	3.60	3.25	2.90
MB-450	10	4.35	3.90	3.50
MB-451*	13	4.50	4.05	3.60

*8½" high for chassis height of 4".

DUAL-VIEW PANEL SUPPORT



Designed for installation on a rack where an oblique view of instrument panel is desired. Engineered so that the entire assembly occupies no more space than size of supported panel. Panel support cover can be removed for easy servicing or installation of instruments. Made of heavy gauge steel with contoured edges. Comes knocked-down with necessary assembly hardware, but without panels. Bud panels to fit these supports are PS-1253 (steel), and PA-1104 (aluminum) for Model IP-1120; PS-1255 (steel), and PA-1106 (aluminum) for IP-1121. Specify color when ordering, use suffix: **BR**, for black rinkletex; **HG**, gray hammertone; **GR**, gray rinkletex; **GY**, light gray textured; **BY**, light blue textured.

Bud No.	Panel Space Required, In.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
IP-1120	19 x 7	3½	$ 9.70	$ 8.75	$ 7.75
IP-1121	19 x 10½	6¾	13.60	12.25	10.90

TRIANGULAR MOUNTING BRACKETS

Ideal for rigid support of shelves to take heavy loads. Heavy gauge steel with ¾" flange. Black enamel finish only.

Bud No.	Size, In. D. x H.	Wt., Lbs.	Net per Pair, Lots of 1-49	50-99	100-149
MB-1266	5 x 5	½	$2.35	$2.10	$1.90
MB-1267	7 x 7	1	2.85	2.55	2.30
MB-1268	9 x 9	1½	3.50	3.15	2.80

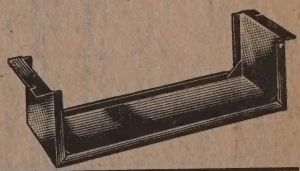
CHASSIS SUPPORTING ANGLES

Distribute weight to sides of the rack to relieve the panel. Angles are 3" x 1⅜" x 7/64" steel. Black enamel finish. **No. CE-2219** designed for attachment to rails of Prestige Relay Racks. Slotted for infinite vertical adjustment; extend to full cabinet depth; 21" x 3" x 2¾".

Bud No.	Length, Inches	Wt., Lbs.	Net per Pair, Lots of 1-24	25-49	50-99
SA-1349	14½	3½	$5.35	$4.80	$4.30
SA-1350	12	3	5.35	4.80	4.30
CE-2219	21	6½	7.10	6.40	5.70

PANEL CHASSIS

Panel mounting chassis for vertical installation where depth is limited or front service is desired. Made of .060" aluminum alloy 5005 H-14 in natural finish. Front flange has standard notching. Fits standard 19" panel space.

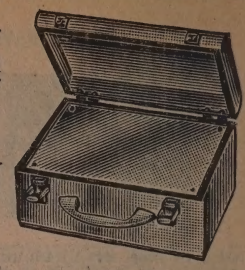


Bud No.	Height, Inches	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CB-1370	1¾	¾	$ 4.60	$ 4.15	$ 3.70
CB-1371	3½	1¼	5.20	4.70	4.15
CB-1372	5¼	1½	5.85	5.25	4.70
CB-1373	7	2	6.50	5.85	5.20
CB-1374	8¾	2¼	7.95	7.15	6.35
CB-1375	10½	2¾	9.20	8.30	7.35
CB-1376	12¼	3	10.25	9.25	8.20
CB-1377	14	3¼	11.25	10.15	9.00

BUD Cases and Chassis Bases

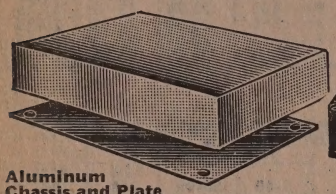
TRANSICASE PORTABLE INSTRUMENT CASES

Handsome, portable instrument case with unlimited applications. Contour design fabricated of .040" aluminum with flush-fitting aluminum panel. Lid protects instruments in case; mounted on two slide-off, bright nickel-plated hinges with toggle catches. Rubber feet at both base and back; metal plugs supplied to fill holes if rubber feet are not used. Bright nickel-plated handle. **Specify Color:** Add suffix **BBY** for textured blue; **GGY** for textured gray enamel.

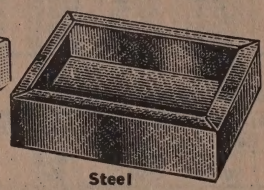


Bud No.	Inside Panel Size, Inches	Clear Internal Space, Inches Below Panel	Clear Internal Space, Inches Above Panel	Internal Aperture, Inches	Overall Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-9	Net Each, Lots of 10-14	Net Each, Lots of 15-19
TC-300	8 15/16 x 5 15/16	4 13/32	1 15/32	8 x 5 31/32	10 1/16 x 7 x 5	2 1/2	$40.60	$36.35	$32.50
TC-301	10 3/8 x 7 1/4	4 13/32	1 15/32	9 7/16 x 7 9/32	11 1/2 x 8 1/4 x 6	3 1/4	41.85	37.65	33.50
TC-302	11 7/8 x 7 15/16	5 29/32	1 15/32	10 15/16 x 7 31/32	13 x 9 x 7 1/2	4	44.65	40.20	35.70
TC-303	15 3/8 x 7 15/16	5 29/32	1 15/32	14 7/16 x 7 31/32	16 1/2 x 9 x 7 1/2	4 3/4	45.35	40.80	36.30
TC-304	19 x 7	7 1/32	1 15/32	18 1/16 x 7 31/32	20 1/8 x 8 x 9	6 3/4	47.85	43.05	38.30

ALUMINUM AND STEEL CHASSIS BASES



Aluminum Chassis and Plate



Steel

Each chassis is made from a single sheet of metal. All corners are reinforced and spot welded. Natural finish aluminum alloy 5005 H-14. All four sides are folded at the bottom for added rigidity and strength.

See following page for Chassis Bottom Plates.

ALUMINUM CHASSIS BASES

Bud No.	Size, Inches D. x W. x H.	Ga.	Wt., Lbs.	Net Each, Lots of 1-24	Net Each, Lots of 25-49	Net Each, Lots of 50-99
AC-1401	2 1/2 x 4 1/2 x 1	18	1/8	$ 2.00	$ 1.80	$ 1.60
AC-1402	3 1/2 x 4 1/2 x 1	18	1/8	2.10	1.90	1.70
AC-1403	3 1/2 x 5 1/2 x 1	18	1/8	2.10	1.90	1.70
AC-1404	4 x 5 x 2	18	1/4	2.50	2.25	2.00
AC-1405	4 x 6 x 1 1/2	18	1/4	2.15	1.95	1.70
AC-430	4 x 6 x 3	18	1/3	2.65	2.40	2.10
AC-431	4 x 6 x 2	18	1/4	2.40	2.15	1.90
AC-1406	4 x 8 x 2	18	1/4	2.90	2.60	2.30
AC-432	4 x 17 x 3	16	1	4.70	4.25	3.75
AC-1407	4 1/2 x 8 x 1 1/2	18	1/4	2.65	2.40	2.10
AC-402	5 x 7 x 2	18	1/3	2.60	2.35	2.10
AC-429	5 x 7 x 3	18	1/2	2.85	2.55	2.30
AC-1408	5 x 9 x 1 1/2	18	1/3	2.65	2.40	2.10
AC-1409	5 x 9 1/2 x 1 1/2	18	1/3	2.65	2.40	2.10
AC-403	5 x 9 1/2 x 2	18	1/2	2.75	2.50	2.20
AC-401	5 x 9 1/2 x 2 1/2	18	1/2	3.25	2.95	2.60
AC-421	5 x 9 1/2 x 3	18	5/8	3.35	3.00	2.70
AC-404	5 x 10 x 3	18	5/8	3.35	3.00	2.70
AC-422	5 x 13 x 3	18	3/4	3.85	3.45	3.10
AC-1410	5 x 13 1/2 x 2 1/2	18	3/4	3.60	3.25	2.90
AC-1411	5 1/2 x 5 1/2 x 1	18	1/3	2.40	2.15	1.90
AC-1412	5 1/2 x 9 1/2 x 1 1/2	18	1/3	2.65	2.40	2.10
AC-1413	6 x 8 x 2	18	1/3	2.75	2.50	2.20
AC-1414	6 x 14 x 3	16	1 1/8	4.85	4.35	3.90
AC-433	6 x 17 x 3	16	1 1/4	5.60	5.05	4.50
AC-405	7 x 7 x 2	18	1/2	2.75	2.50	2.20
AC-406	7 x 9 x 2	18	1/2	2.85	2.55	2.30
AC-407	7 x 11 x 2	18	5/8	3.35	3.00	2.70
AC-408	7 x 12 x 3	18	7/8	4.00	3.60	3.20
AC-409	7 x 13 x 2	18	3/4	3.40	3.05	2.70
AC-1415	7 x 15 x 2	16	1	5.35	4.80	4.30
AC-411	7 x 15 x 3	16	1 1/4	5.60	5.05	4.50
AC-1416	7 x 17 x 2	16	1 1/8	4.95	4.45	3.95
AC-1417	7 x 17 x 2 1/2	16	1 1/4	5.20	4.70	4.15
AC-423	7 x 17 x 3	16	1 1/2	5.60	5.05	4.50
AC-1418	8 x 10 x 2 1/2	18	1	4.20	3.80	3.35
AC-1419	8 x 12 x 2 1/2	16	1 1/8	4.85	4.35	3.90
AC-424	8 x 12 x 3	16	1 1/4	4.75	4.30	3.80
AC-425	8 x 17 x 2	16	1 1/2	4.95	4.45	3.95
AC-412*	8 x 17 x 3	16	1 3/4	5.75	5.20	4.60
AC-1420	8 1/2 x 15 x 3	16	1 1/2	5.35	4.80	4.30
AC-1421	9 x 15 x 3	16	1 1/2	6.10	5.50	4.90
AC-413	10 x 12 x 3	16	1 1/4	5.75	5.20	4.60
AC-414	10 x 14 x 3	16	1 1/2	5.75	5.20	4.60
AC-415*	10 x 17 x 2	16	1 1/2	5.60	5.05	4.50
AC-416*	10 x 17 x 3	16	1 3/4	6.35	5.70	5.10
AC-427*	10 x 17 x 4	14	2 1/2	9.00	8.10	7.20
AC-1422	10 x 17 x 5	16	2 1/4	13.05	11.75	10.45
AC-1423	10 x 23 x 3	14	2 3/4	9.70	8.75	7.75
AC-426*	11 x 17 x 2	14	2	7.00	6.30	5.60
AC-417*	11 x 17 x 3	14	2 1/4	8.10	7.30	6.50
AC-1424	12 x 12 x 3	16	1 1/2	5.85	5.25	4.70
AC-1425	12 x 17 x 2	16	1 5/8	7.25	6.55	5.80
AC-418*	12 x 17 x 3	14	2 1/4	8.25	7.45	6.60
AC-419*	13 x 17 x 2	14	2 5/8	7.20	6.50	5.75
AC-420*	13 x 17 x 3	14	2 3/4	8.60	7.75	6.90
AC-428*	13 x 17 x 4	14	3 1/4	10.45	9.40	8.35
AC-1426	13 x 17 x 5	14	3 1/2	14.35	12.90	11.50
AC-1427	14 x 17 x 3	14	2 3/4	10.20	9.20	8.15
AC-1428	15 x 17 x 4	14	3 1/4	14.35	12.90	11.50
AC-1429	15 x 17 x 6	14	4 1/8	19.80	17.80	15.85
AC-1430	17 x 17 x 3	14	3 1/4	12.10	10.90	9.70
AC-1431	17 x 17 x 4	14	3 7/8	17.10	15.40	13.70

*Punched to accommodate chassis mounting brackets.

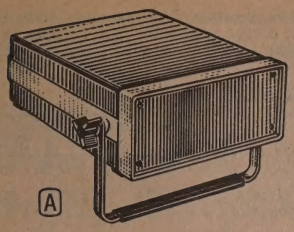
STEEL CHASSIS BASES ZINC PLATED FINISH

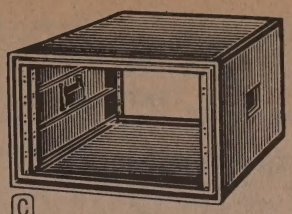
Bud No.	Size, Inches D. x W. x H.	Ga.	Net Each, Lots of 1-24	Net Each, Lots of 25-49	Net Each, Lots of 50-99
CB-1066	4 x 17 x 3	20	$ 6.20	$ 5.60	$ 4.95
CB-102	4 1/2 x 8 x 1 1/2	22	4.50	4.05	3.60
CB-629	5 x 7 x 2	22	3.85	3.45	3.10
CB-103	5 x 9 x 1 1/2	22	4.10	3.70	3.30
CB-776	5 x 9 1/2 x 1 1/2	22	5.00	4.50	4.00
CB-645	5 x 9 1/2 x 2 1/2	22	5.00	4.50	4.00
CB-605	5 x 10 x 3	22	5.50	4.95	4.40
CB-105	5 x 13 x 3	20	6.50	5.85	5.20
CB-1198	5 x 13 1/2 x 2 1/2	20	6.60	5.95	5.30
CB-101	5 1/2 x 5 1/2 x 1	22	4.10	3.70	3.30
CB-104	6 x 8 x 2	20	4.50	4.05	3.60
CB-756	6 x 14 x 3	20	6.00	5.40	4.80
CB-1191	7 x 7 x 2	20	4.70	4.25	3.75
CB-1192	7 x 9 x 2	20	4.70	4.25	3.75
CB-1193	7 x 11 x 2	20	5.25	4.75	4.20
CB-793	7 x 12 x 3	20	6.20	5.60	4.95
CB-1194	7 x 13 x 2	20	5.70	5.15	4.55
CB-1189	7 x 15 x 3	20	7.20	6.50	5.75
CB-1199	7 x 17 x 2 1/2	20	6.95	6.25	5.55
CB-758	7 x 17 x 3	20	7.70	6.95	6.15
CB-702	8 x 10 x 2 1/2	20	5.85	5.25	4.70
CB-704	8 x 12 x 2 1/2	20	6.60	5.95	5.30
CB-760	8 x 12 x 3	20	6.95	6.25	5.55
CB-774	8 x 17 x 2	20	6.95	6.25	5.55
CB-775	8 x 17 x 3	20	7.70	6.95	6.15
CB-666	8 1/2 x 15 x 3	20	8.10	7.30	6.50
CB-1195	10 x 12 x 3	20	7.00	6.30	5.60
CB-779	10 x 14 x 3	20	7.00	6.30	5.60
CB-769	10 x 17 x 2	20	7.00	6.30	5.60
CB-637	10 x 17 x 3	20	8.45	7.60	6.75
CB-1196	10 x 17 x 3	18	8.95	8.05	7.15
CB-641	10 x 17 x 4	18	10.70	9.65	8.55
CB-624	10 x 17 x 5	18	15.85	14.25	12.70
CB-1197	10 x 23 x 3	18	10.35	9.30	8.30
CB-770	11 x 17 x 2	18	8.20	7.40	6.55
CB-771	11 x 17 x 3	18	10.45	9.40	8.35
CB-106	12 x 12 x 3	18	9.20	8.30	7.35
CB-661	12 x 17 x 2	18	9.10	8.20	7.30
CB-662	12 x 17 x 3	18	10.85	9.75	8.70
CB-772	13 x 17 x 2	18	11.00	9.90	8.80
CB-773	13 x 17 x 3	18	12.20	11.00	9.75
CB-643	13 x 17 x 4	18	13.95	12.55	11.15
CB-626	13 x 17 x 5	18	17.35	15.60	13.90

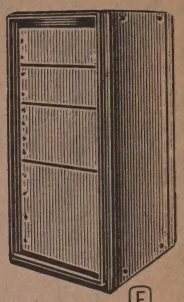
BLACK RINKLETEX FINISH

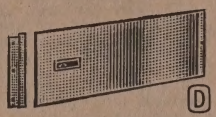
CB-1068	4 x 17 x 3	20	$ 5.50	$ 4.95	$ 4.40
CB-628	5 x 7 x 2	22	3.15	2.85	2.50
CB-788	5 x 9 1/2 x 1 1/2	22	3.60	3.25	2.90
CB-644	5 x 9 1/2 x 2 1/2	22	4.10	3.70	3.30
CB-604	5 x 10 x 3	22	4.10	3.70	3.30
CB-647	5 x 13 1/2 x 2 1/2	20	5.25	4.75	4.20
CB-755	6 x 14 x 3	20	5.25	4.75	4.20
CB-789	7 x 7 x 2	20	3.85	3.45	3.10
CB-790	7 x 9 x 2	20	4.10	3.70	3.30
CB-791	7 x 11 x 2	20	4.25	3.85	3.40
CB-792	7 x 12 x 3	20	4.70	4.25	3.75
CB-646	7 x 13 x 2	20	4.50	4.05	3.60
CB-649	7 x 15 x 3	20	5.85	5.25	4.70
CB-648	7 x 17 x 2 1/2	20	5.85	5.25	4.70
CB-757	7 x 17 x 3	20	6.60	5.95	5.30
CB-701	8 x 10 x 2 1/2	20	5.00	4.50	4.00
CB-703	8 x 12 x 2 1/2	20	5.25	4.75	4.20
CB-759	8 x 12 x 3	20	5.50	4.95	4.40
CB-650	8 x 17 x 2	20	5.00	4.50	4.00
CB-651*	8 x 17 x 3	20	5.95	5.35	4.75
CB-665	8 1/2 x 15 x 3	20	6.60	5.95	5.30
CB-652	10 x 12 x 3	20	5.70	5.15	4.55
CB-653	10 x 14 x 3	20	6.00	5.40	4.80
CB-654*	10 x 17 x 2	20	5.85	5.25	4.70
CB-636*	10 x 17 x 3	20	5.85	5.25	4.70
CB-655*	10 x 17 x 3	18	7.60	6.85	6.10
CB-640*	10 x 17 x 4	18	9.50	8.55	7.60
CB-623	10 x 17 x 5	18	13.45	12.10	10.75
CB-656	10 x 23 x 3	18	8.85	7.95	7.10
CB-657*	11 x 17 x 2	18	6.95	6.25	5.55
CB-658*	11 x 17 x 3	18	8.10	7.30	6.50
CB-663*	12 x 17 x 2	18	7.70	6.95	6.15
CB-664*	12 x 17 x 3	18	8.45	7.60	6.75
CB-659*	13 x 17 x 2	18	8.75	7.90	7.00
CB-660*	13 x 17 x 3	18	10.00	9.00	8.00
CB-642*	13 x 17 x 4	18	11.60	10.45	9.30
CB-625	13 x 17 x 5	18	14.70	13.25	11.75

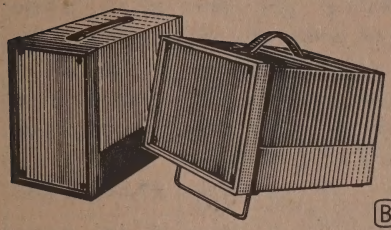
*Punched to accommodate chassis mounting brackets.











TR SERIES INSTRUMENT ENCLOSURES (FIG. A)

Versatile, functional, good looking instrument enclosures in four sizes, available immediately. Can be used as desk top instrument cases, in systems, or as portable enclosures. The TR Series is designed to accommodate an accessory chassis, also immediately available, or 1/16" thick printed circuit boards. Chassis is reversible, and two configurations are possible with one unit. Top and bottom of instrument enclosure are .050" aluminum; front panel, .090" aluminum. Top and bottom can be removed quickly for easy access to the unit's dust-free interior. Carrying handle is also used as tilting bail. Finished in mar-resistant, durable, easy to clean Nextel. Specify color by suffix, **BLN,** blue and white, or **BRN,** brown and white. Example: TR-6100**BLN.** Enclosure includes front panel, rubber feet and carrying handle. Weight: TR-6100, 4½ lbs.; TR-6101, 5½ lbs.; TR-6102, 7 lbs.; TR-6103, 9½ lbs.

Bud No.	Size, In. W.	D.	H.	Panel Space, In.	Net Each, Lots of 1-4	5-9	10-14
TR-6100	8 5/16	10 3/4	3 1/2	3 1/4 x 8 3/64	$71.30	$64.15	$57.05
TR-6101	8 5/16	13 1/4	5 1/4	5 x 8 3/64	76.30	68.65	61.05
TR-6102	11 1/16	13 1/4	7	6 3/4 x 10 53/64	83.60	75.25	66.90
TR-6103	12	18 3/4	8	7 3/4 x 11 3/4	90.25	81.25	72.20

CHASSIS FOR TR SERIES

Bud No.	Size, In. Length	Width	Height	Wt., Lbs.	Fits Cabinet	Net Each, Lots of 1-4	5-9	10-14
TRC-610	10 1/8	7 3/4	1 1/4	3/4	TR-6100	$6.45	$5.80	$5.15
TRC-611	12 5/8	7 3/4	1 3/4	1	TR-6101	6.75	6.10	5.40
TRC-612	12 5/8	10 1/2	1 3/4	1 1/4	TR-6102	7.60	6.85	6.10
TRC-613	18 1/8	11 1/16	1 3/4	1 3/4	TR-6103	9.50	8.55	7.60

SHOWCASE (FIG. B)

Used as desk top instrument cases, in systems, in racks, as portable enclosures. Lightweight, but sturdy, comes in ten different sizes. Top, sides and bottom are .050" aluminum; front panel is .090", rear panel is .050" aluminum. Strong flexible handle. Two standard color combinations: Black textured (BT) and white; royal blue (RB) and white.

Bud No.	Size, In. W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
BB-1800	5½ x 11 x 6 7/16	3 3/4	$49.75	$44.80	$39.80
BB-1801	8 5/16 x 11 x 6 7/16	4	51.75	46.60	41.40
BB-1802	5½ x 11 x 8 3/16	3 3/4	51.25	46.15	41.00
BB-1803	8 5/16 x 11 x 8 3/16	5 1/2	53.70	48.35	42.95
BB-1804	11 1/16 x 11 x 8 3/16	5 3/4	55.85	50.25	44.70
BB-1805	5½ x 11 x 9 15/16	4 3/4	51.85	46.65	41.50
BB-1806	8 5/16 x 11 x 9 15/16	5 1/4	54.00	48.60	43.20
BB-1807	8 5/16 x 15 x 9 15/16	6 1/4	57.80	52.00	46.25
BB-1808	11 1/16 x 11 x 9 15/16	6	56.20	50.60	44.95
BB-1809	11 1/16 x 15 x 9 15/16	7	59.60	53.65	47.70

ALUMINUM CHASSIS FOR SHOWCASE

Bud No.	Fits	Size, In. W. x D. x H.	Wt., Lbs.	Net 1-14
BBC-1821	BB-1800-02-05	4 29/32 x 9 31/32 x 2	½	$3.40
BBC-1822	BB-1801-03-06	7 1/16 x 9 31/32 x 2	3/4	3.90
BBC-1823	BB-1804-08	10 15/32 x 9 31/32 x 2	1	4.75
BBC-1824	BB-1807	7 1/16 x 13 31/32 x 2	1	4.60
BBC-1825	BB-1809	10 15/32 x 13 31/32 x 2	1 1/4	5.60

CLASSIC II CABINETS (FIG. C)

Combines serene rectilinear beauty with rugged construction. Double rim aluminum extrusion with edges polished, outlines front of cabinet. Two full-length steel flanges support the recessed anodized aluminum handles. Plain .060" aluminum panels on all four sides; textured finish. Clear inside depth, 20 5/16"; overall, 21 7/16". Specify color by suffix: **GT,** gray textured; **RB,** royal blue textured; **GD,** gold textured.

Bud No.	Overall Ht., In.	Panel Space, In.	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
AGC-9267	7 1/16	5 5/16	29 1/4	$147.40	$132.65	$117.90
AGC-9268	8 13/16	7 1/16	30 1/2	151.35	136.20	121.10
AGC-9269	10 5/16	8 13/16	32 1/4	155.20	139.70	124.15
AGC-9270	12 5/16	10 5/16	33 1/4	155.85	140.25	124.70
AGC-9271	14 1/16	12 5/16	34 1/4	161.05	144.95	128.85
AGC-9272	15 13/16	14 1/16	35	164.80	148.30	131.85
AGC-9273	17 5/16	15 13/16	36	168.10	151.30	134.50
AGC-9274	19 5/16	17 5/16	36 3/4	171.60	154.45	137.30
AGC-9275	21 1/16	19 5/16	37 3/4	173.35	156.00	138.70
AGC-9276	22 13/16	21 1/16	38 1/2	176.05	158.45	140.85
AGC-9277	24 5/16	22 13/16	39 1/2	184.95	166.45	147.95
AGC-9278	26 5/16	24 5/16	40 1/4	187.05	168.35	149.65
AGC-9279	28 1/16	26 5/16	41 1/4	189.60	170.65	151.70
AGC-9280	29 13/16	28 1/16	42	193.60	174.25	154.90

CLASSIC II DOORS 19" WIDE (FIG. D)

Designed for use on Classic II Cabinets; also fit any rack or cabinet with 19" panel space by attaching to panel mounting rails. Made of 1/8" aluminum alloy 5005-H36. Stop fits on one panel mounting rail; hinged door attaches to other rail. Equipped with plated, flush-type latch. Finished in vinyl texture; specify color by suffix: **WH,** white textured; **S,** sand.

Bud No.	Height, In.	Wt., Lbs.	Net Each, Lots of 1-4	5-9	10-14
AGD-367	5 1/4	1 3/4	$13.60	$12.25	$10.90
AGD-368	7	2	16.00	14.40	12.80
AGD-369	8 3/4	2 3/4	17.65	15.90	14.10
AGD-370	10 1/2	3	19.20	17.30	15.35
AGD-371	12 1/4	3 1/2	20.65	18.60	16.50
AGD-372	14	4	21.10	19.00	16.90
AGD-373	15 3/4	4 3/4	23.80	21.40	19.05
AGD-374	17 1/2	5	25.75	23.20	20.60
AGD-375	19 1/4	5 1/2	27.55	24.80	22.05
AGD-376	21	6 1/4	29.35	26.40	23.50
AGD-377	22 3/4	6 3/4	30.70	27.65	24.55
AGD-378	24 1/2	7 1/4	32.20	29.00	25.75
AGD-379	26 1/4	7 1/2	34.05	30.65	27.25
AGD-380	28	8	36.40	32.75	29.10

CLASSIC II CABINET RACKS (FIG. E)

Clean, contemporary designed and dependable racks. Side panels and door are 18 gauge steel; top and bottom are 16 gauge steel. Double rimmed, brushed aluminum extrusion around front adds to the appearance of the rack. Comes in four sizes, and in two standard colors; gray textured **(GT)** and royal blue **(RB);** select white **(WH)** for panels and doors. **Size:** 22" w. x 22" d. Rear doors included.

Bud No.	Height, Inches	Panel Ht., In.*	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
AGR-9302	47 5/16	42	126	$218.50	$196.65	$174.80
AGR-9303	57 13/16	52 1/2	146	242.65	218.40	194.10
AGR-9304	66 5/16	61 1/4	162	269.95	242.70	215.70
AGR-9306	82 5/16	77	181	308.85	277.95	247.10

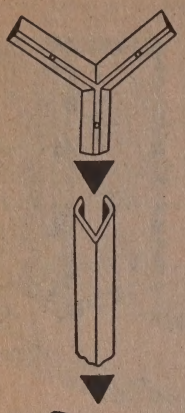
*On 19" width.

FRONT DOORS FOR CLASSIC II RACKS

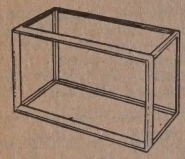
Rear doors included with racks.

Bud No.	Fits Rack	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
AGD-932	AGR-9302	19	$49.45	$44.50	$39.55
AGD-933	AGR-9303	23	52.65	47.40	42.10
AGD-934	AGR-9304	26	55.50	49.94	44.40
AGD-936	AGR-9306	31	60.85	54.75	48.70

BUD Slimline 901 Imlok®



BIM-801



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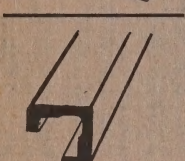
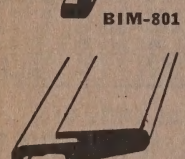
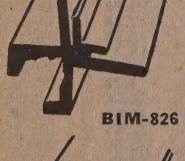


BIM-826



BIM-810

BIM-601



BIM-101

Bud Slimline 901 Imlok is based upon the same, proven principles as the Standard Imlok system. The basic difference is lighter weight and narrower appearance of the extrusions; corner connectors are smaller in size and are not visible in the completed housing. Connectors are 380 aluminum die castings; extrusions are 6063 aluminum.

EXTRUSIONS (9 FT. LENGTH ONLY)

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BIM-801	90° external extrusion suitable for lightweight frameworks; when enclosed with panels it is not visible from the outside.	$11.55	$10.40	$ 9.25
BIM-802	90° external extrusion has retaining groove for 20-gauge panels.	10.00	9.00	8.00
BIM-803	90° external extrusion; heavier extrusion with retaining grooves for 20-gauge panels.	14.50	13.05	11.60
BIM-806	90° bezel extrusion; bezel frame for recessed panels; one side has panel retaining groove.	14.05	12.65	11.25
BIM-807	90° bezel extrusion similar to BIM-806, but heavier; thicker internal flange permits mounting of rack type panels.	20.80	18.90	17.00
BIM-821	90° bezel extrusion similar to BIM-806, but has much deeper recess that provides picture frame effect for the panel.	28.30	25.45	22.65
BIM-826	90° internal extrusion used for all internal 90° applications; retaining grooves for 20-gauge panels.	36.10	32.50	28.90
BIM-810	Spacer bar extrusion matches BIM-801 for dividing and reinforcing panel areas.	12.75	11.50	10.20
BIM-811	Spacer bar extrusion; visible face similar to BIM-802; used with all extrusions except BIM-801.	13.75	12.40	11.00
BIM-812	Spacer bar extrusion similar to BIM-811, but with wider visible area to match BIM-803.	19.05	17.15	15.25
BIM-601	15° external extrusion used for all 15° external corner applications; fits one leg of BIM-915 and BIM-91 connectors; used with BIM-802, BIM-803, BIM-806, BIM-807, BIM-821 and BIM-845 extrusions.	27.40	24.65	21.90
BIM-611	15° internal extrusion used for all 15° internal corner applications; fits one leg of BIM-951 connector; used with BIM-802, BIM-803, BIM-806, BIM-807 and BIM-821 extrusions.	27.40	24.65	21.90
BIM-641	45° external extrusion used for all 45° external corner applications; fits one leg of BIM-945 and BIM-94 connectors; used with same extrusions as BIM-601.	27.15	24.45	21.70
BIM-651	45° internal extrusion used for all 45° internal corner applications; fits one leg of BIM-954; used with same extrusions as BIM-611.	27.15	24.45	21.70
BIM-681	75° external extrusion used for all 75° external corner applications with BIM-975 or BIM-97 connectors; used with same extrusions as BIM-601.	27.15	24.45	21.70
BIM-682	75° acute external extrusion.	27.15	24.45	21.70
BIM-691	75° internal extrusion used for all 75° internal corner applications with BIM-957 connector; for same extrusions as BIM-611.	27.15	24.45	21.70
BIM-845	90° deep recess extrusion has 5/8" deep recess on one side and is similar to BIM-803 on other; used with appropriate corner connectors.	27.10	24.40	21.70
BIM-847	Deep recess conversion extrusion used where BIM-845 is not suitable; used with extrusions BIM-802, BIM-803, BIM-812, BIM-826, BIM-651, BIM-691 and one side only on BIM-806, BIM-807, BIM-811, BIM-821 and BIM-845.	21.40	19.25	17.10
BIM-610	Deep recess conversion extrusion similar to BIM-847; used with BIM-601 and BIM-611 extrusions.	21.90	19.70	17.50
BIM-690	Deep recess conversion extrusion similar to BIM-847 and BIM-610; used with extrusions BIM-641, BIM-681 and BIM-682.	21.90	19.70	17.50
BIM-846	Deep recess spacer bar extrusion matches deep recess on deep-recess conversion extrusions; inner flanges accept standard captive nuts suitable for 14-gauge material.	37.80	34.00	30.25
BIM-834	90° glazing extrusion has retaining groove on both sides to accept 1/4" panels.	32.40	29.15	25.90
BIM-835	Same as BIM-834, but accepts 1/8" panels.	27.70	24.95	22.15
BIM-836	90° sliding door extrusion has twin channels on one side to accept 1/4" sliding doors; retaining groove on other side for 1/4" fixed panel.	42.75	38.50	34.20
BIM-837	Same as BIM-836, but for 1/8" doors and 1/8" panel.	39.60	35.65	31.70
BIM-822	1/4" sliding door conversion extrusion; used where 1/4" sliding doors are required without a side panel. May be added to either side of BIM-802, BIM-803, BIM-812, BIM-826, BIM-651, and BIM-691 extrusions; or, to one side only of BIM-806, BIM-807, BIM-811, BIM-821 and BIM-845 extrusions.	19.65	17.70	15.70
BIM-823	1/8" sliding door conversion extrusion similar to BIM-822, except will accommodate 1/8" sliding doors; may be added to same extrusions as BIM-822.	18.90	17.00	15.10
BIM-832	Closure section may be added to inside of frameworks using 90° connectors to completely conceal them.	8.10	7.30	6.50
BIM-818	90° door frame extrusion used for making double skinned doors.	16.45	14.80	13.15
BIM-829	90° mounting flange extrusion used with BIM-801 to provide a flange suitable for rack mounting.	30.30	27.25	24.25
BIM-107	Panel mounting conversion extrusion; normally fitted to two vertical members to provide mountings for rack type panels.	24.00	21.60	19.20
BIM-856	90° inset frame angle for vertical mounting between flanges of top and bottom front-to-rear extrusions; use with BIM-858 for recessed panel mountings.	8.65	7.80	6.90
BIM-857	90° panel mounting extrusion similar to BIM-803, but one flange extended to allow fitting of standard rack panels.	23.10	20.80	18.50
BIM-858	90° top/bottom extrusion used with BIM-857 to provide clear aperture above and below rack panels; can be used as a vertical member with BIM-856.	22.80	20.50	18.25

MITERING JIGS

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BIM-101	90° mitering jig; external, double miter	$19.65	$17.70	$15.70
BIM-102	45° mitering jig; external, single miter	19.05	17.15	15.25
BIM-115	90° mitering jig; external, single miter	19.05	17.15	15.25
BIM-116	90° mitering jig; internal, single miter	19.05	17.15	15.25
BIM-117	15° mitering jig; external, single miter	19.05	17.15	15.25
BIM-118	15° mitering jig; internal, single miter	19.05	17.15	15.25
BIM-121	45° mitering jig; external, single miter	19.05	17.15	15.25
BIM-122	45° mitering jig; internal, single miter	19.05	17.15	15.25
BIM-125	75° mitering jig; external, single miter	13.90	12.50	11.10
BIM-126	75° mitering jig; internal, single miter	19.05	17.15	15.25
BIM-127	Acute 75° mitering jig; external, single miter	19.05	17.15	15.25
BIM-129	Notch jig	77.80	70.00	62.25

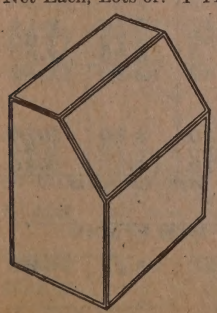
CONNECTORS

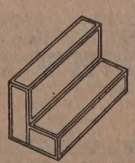
Bud No.	Description	Net Each, Lots of 1-14	15-24	25-34
BIM-902	90° external standard connector used for normal 90° external corners and for joining spacer bars to the various 90° external and bezel extrusions.	$2.70	$2.45	$2.15
BIM-901	90° external corner connector; a lighter duty model than BIM-902; used with extrusions BIM-801, BIM-834, BIM-835, BIM-836 and BIM-837; if one leg is removed use BIM-818.	2.20	2.00	1.75
BIM-90	90° external slotted connector replaces BIM-902 if an unobstructed aperature is required on framework involving extrusions BIM-802, BIM-806, BIM-810, BIM-811 and BIM-821.	4.30	3.85	3.45
BIM-909	90° internal connector; extrusion BIM-826 is fitted to one leg and the other two legs accept extrusions BIM-802, BIM-803, BIM-806, BIM-807 and BIM-821.	3.90	3.50	3.10
BIM-090	90° internal spacer bar connector enables spacer bars BIM-810, BIM-811 or BIM-812 to be fitted to extrusion BIM-826.	4.30	3.85	3.45
BIM-990	90° cruciform connector; used to join spacer bars BIM-810, BIM-811, or BIM-812 where they cross to divide large panel areas.	4.45	4.00	3.55
BIM-915	15° external corner connector; used for 15° external corners when two 90° frame extrusions are BIM-803 or BIM-845; extrusion BIM-601 is always fitted to third leg.	3.60	3.25	2.90
BIM-91	15° external slotted connector replaces BIM-915 when 90° extrusions are BIM-802, BIM-806, BIM-807 or BIM-821; also used for joining spacer bars to BIM-601.	3.80	3.40	3.05
BIM-951	15° internal corner connector for all 15° internal corner applications; extrusion BIM-611 is fitted to one leg; the other two will accept BIM-802, BIM-803, BIM-806, BIM-807 or BIM-821.	3.60	3.25	2.90
BIM-015	15° internal spacer bar connector permits spacer bars BIM-810, BIM-811 or BIM-812 to be fitted to 15° internal extrusion BIM-611.	4.45	4.00	3.55
BIM-945	45° external corner connector; used for 45° external corners when extrusion is either BIM-803 or BIM-845; must be used with extrusion BIM-641.	3.60	3.25	2.90
BIM-94	45° external slotted connector replaces BIM-945 when extrusions are either BIM-802, BIM-806, BIM-807 or BIM-821; also used for joining spacer bars to extrusion BIM-641.	3.80	3.40	3.05
BIM-954	45° internal corner connector; used for all 45° internal corners with extrusion BIM-651; two legs accept 90° extrusions.	4.45	4.00	3.55
BIM-045	45° internal spacer bar connector; used in fitting spacer bars to extrusion BIM-651.	4.45	4.00	3.55
BIM-975	75° external corner connector; used for 75° external corners with either 90° extrusion BIM-803 or BIM-845; BIM-681 is always the third extrusion.	3.60	3.25	2.90
BIM-97	75° external slotted connector; used to replace BIM-975 when 90° extrusions are BIM-802, BIM-806, BIM-807 or BIM-821; connects spacer bars to extrusion BIM-681.	3.80	3.40	3.05
BIM-957	75° internal corner connector; used for all 75° internal corners with extrusion BIM-691 fitted to one leg; use BIM-802, BIM-803, BIM-806, BIM-807 or BIM-821 on other two legs.	3.90	3.50	3.10
BIM-075	75° internal spacer bar connector enables spacer bars to be fitted to extrusion BIM-691.	4.30	3.85	3.45
BIM-75	75° acute external slotted connector replaces BIM-750 when extrusions BIM-802, BIM-806, BIM-807 or BIM-821 are used; also joins spacer bars to extrusion BIM-682.	4.30	3.85	3.45

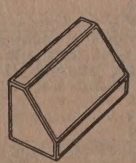
ACCESSORIES

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BIM-103	Tapped block 6-32 threaded for mounting panels with extrusions BIM-801 and BIM-810.	$2.10	$1.90	$1.70
BIM-104	Tapped block 10-32 threaded for mounting panels with extrusions BIM-801 and BIM-810.	2.10	1.90	1.70
BIM-105	Tapped block 6-32 threaded for mounting panels with extrusions BIM-801 and BIM-810.	1.90	1.70	1.50
BIM-106	Adjustable mounting bracket may be positioned as required to allow standard rack panel mountings on extrusions BIM-801, BIM-802, BIM-803, BIM-806, BIM-807, BIM-810, BIM-811, BIM-812, BIM-821 and BIM-845.	.75	.70	.60
BIM-108	90° external corner gusset may be fitted to connectors BIM-90 and BIM-901.	.70*	.65†	.55‡
BIM-109L	Lift-off butt hinge, left hand; chrome plated.	3.30*	2.95†	2.65‡
BIM-109R	Lift-off butt hinge; right hand; chrome plated.	3.30*	2.95†	2.65‡
BIM-134	45° corner gusset with 3 drilled holes (one .44″, two .22″) plus 4 holes tapped 10-32. For 90° corners only.	2.70†	2.45†	2.15‡
BIM-135	45° corner gusset with 3 drilled holes (one .44″, two .22″).	2.25*	2.05†	1.80‡
BIM-136	23°–67° corner gusset drilled and tapped for use in any 90° corner; may be fitted after framework is completed.	2.35*	2.10†	1.90‡
BIM-110	Open hinge, cadmium plated steel, undrilled, 4-ft. length for use with deep recess extrusions.	9.90	8.90	7.90
BIM-130	Pivot hinge block and collar designed for use with either flush fitting or recessed doors; chrome plated.	4.05*	3.65†	3.25‡
BIM-137	Bracing extrusion for internal bracing at any desired angle; particularly useful for strengthening non-90° corners.	21.25	19.15	17.00
BIM-140	Concealed hinge suitable for use on BIM-803 or BIM-858; can also be used on one side only of BIM-812 or BIM-857.	5.80	5.20	4.65

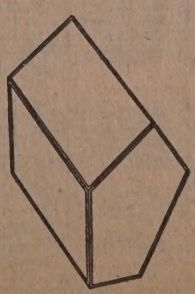
Net Each, Lots of: *1–14; †15–24; ‡25–34.





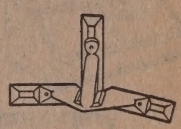


TYPICAL STRUCTURES



BIM-902

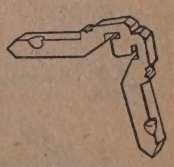
BIM-909



BIM-915

BIM-954

BIM-975

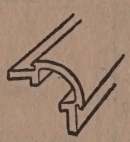


BIM-075

BUD Imlok® "Prototyper" Cabinets

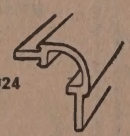
Typical Structure

BI-1001

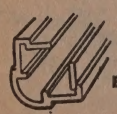


BI-2004

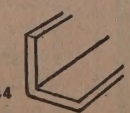
BI-2005



BI-2024



BI-2034



BI-2044

Cabinet system permits quick assembly of structures of your own design using a variety of corner castings and extrusions held with screws. No grinding or welding needed.

EXTERNAL CORNER CONNECTORS

Bud No.	Description	Net Each, Lots of 1-14	15-24	25-34
BI-1001	90° basic corner connector for rectangular cabinets. Use with BI-2004, BI-2014, BI-2024, BI-2034, BI-2044, BI-2054 or BI-2064 extrusions.	$1.90	$1.70	$1.50
BI-1016	67½° corner connector holds vertical wall and horizontal wall to a third rising at 67½° to the horizontal. One leg fits BI-2041 extrusion; other two fit any 90° external extrusion.	4.15	3.75	3.30
BI-1024	60° corner connector similar to BI-1016. One leg fits BI-2081; other legs fit any 90° external extrusion.	4.15	3.75	3.30
BI-1002	45° corner connector similar to BI-1016. One leg fits BI-2005, BI-2015, or BI-2025; other two legs fit any 90° extrusion.	2.85	2.55	2.30
BI-1020	30° corner connector similar to BI-1016. One leg fits BI-2061; other two legs fit any 90° external extrusion.	4.15	3.75	3.30
BI-1012	22½° corner connector similar to BI-1016. One leg fits BI-2021; other two legs fit any 90° external extrusion.	4.15	3.75	3.30

EXTERNAL STANDARD EXTRUSIONS

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BI-2004	12 ft. long, 90° external extrusion most used; has panel retaining groove on each flange for 0.050" panels. For small to medium sized structures with unbraced spaces up to 2 ft. lg.	$18.90	$17.00	$15.10
BI-2004-3	3 ft. length BI-2004	5.80	5.20	4.65
BI-2004-6	6 ft. length BI-2004	11.05	9.95	8.85
BI-2004-9	9 ft. length BI-2004	15.70	14.15	12.55
BI-2064	12 ft. long, 90° extrusion with panel retaining flange to take 20 gauge panels.	19.90	17.90	15.90
BI-2064-3	3 ft. length BI-2064	5.95	5.35	4.75
BI-2064-6	6 ft. length BI-2064	11.40	10.25	9.10
BI-2064-9	9 ft. length BI-2064	16.30	14.65	13.05
BI-2041	12 ft. long, 67½° extrusion; companion to BI-1016 for unbraced spans up to 3 ft. long.	23.10	20.80	18.50
BI-2041-3	3 ft. length BI-2041	6.90	6.20	5.50
BI-2041-6	6 ft. length BI-2041	13.20	11.90	10.55
BI-2041-9	9 ft. length BI-2041	18.75	16.90	15.00
BI-2081	12 ft. long, 60° extrusion; companion to BI-1024 connector. For unbraced spans up to 3 ft. long.	23.05	20.75	18.45
BI-2081-3	3 ft. length BI-2081	6.85	6.15	5.50
BI-2081-6	6 ft. length BI-2081	13.20	11.90	10.55
BI-2081-9	9 ft. length BI-2081	19.00	17.10	15.20
BI-2005	12 ft. long, 45° extrusion used with BI-1002 connector; for spans up to 2 ft. long.	16.65	15.00	13.30
BI-2005-3	3 ft. length BI-2005	5.10	4.60	4.10
BI-2005-6	6 ft. length BI-2005	9.70	8.75	7.75
BI-2005-9	9 ft. length BI-2005	13.60	12.25	10.90
BI-2061	12 ft. long, 30° extrusion used with BI-1020 connector.	23.10	20.80	18.50
BI-2061-3	3 ft. length BI-2061	6.90	6.20	5.50
BI-2061-6	6 ft. length BI-2061	13.20	11.90	10.55
BI-2061-9	9 ft. length BI-2061	18.75	16.90	15.00
BI-2021	12 ft. long, 22½° extrusion used with BI-1012 connector.	24.00	21.60	19.20
BI-2021-3	3 ft. length BI-2021	7.05	6.35	5.65
BI-2021-6	6 ft. length BI-2021	13.75	12.40	11.00
BI-2021-9	9 ft. length BI-2021	19.35	17.40	15.50
BI-2014	12 ft. long, 90° strengthened extrusion similar to BI-2004 but stronger for use in unbraced spans 4 to 5 ft. long.	21.30	19.15	17.05
BI-2014-3	3 ft. length BI-2014	6.40	5.75	5.10
BI-2014-6	6 ft. length BI-2014	12.25	11.05	9.80
BI-2014-9	9 ft. length BI-2014	17.40	15.65	13.90
BI-2015	12 ft. long, 45° external strengthened extrusion used in place of BI-2005 in unbraced spans up to 3 ft. long.	18.90	17.00	15.10
BI-2015-3	3 ft. length BI-2015	5.70	5.15	4.55
BI-2015-6	6 ft. length BI-2015	10.90	9.80	8.70
BI-2015-9	9 ft. length BI-2015	15.30	13.75	12.25
BI-2054	12 ft. long, 90° strengthened extrusion with two 1 1/16" extended flanges for std. ⅛" panel; retaining groove at root of flanges.	26.65	24.00	21.30
BI-2054-3	3 ft. length BI-2054	8.05	7.25	6.45
BI-2054-6	6 ft. length BI-2054	15.15	13.65	12.10
BI-2054-9	9 ft. length BI-2054	21.90	19.70	17.50
BI-2024	12 ft. long, 90° strengthened extrusion w/one flange extended ⅝" to fit ⅛" panel; other has normal panel-retaining groove.	21.60	19.45	17.30
BI-2024-3	3 ft. length BI-2024	6.75	6.10	5.40
BI-2024-6	6 ft. length BI-2024	12.30	11.05	9.85
BI-2024-9	9 ft. length BI-2024	17.65	15.90	14.10
BI-2025	12 ft. long, 45° strengthened extrusion w/one ⅝" extended flange for ⅛" panel and one normal panel-retaining groove	20.70	18.65	16.55
BI-2025-3	3 ft. length BI-2025	6.25	5.65	5.00
BI-2025-6	6 ft. length BI-2025	11.85	10.65	9.50
BI-2025-9	9 ft. length BI-2025	17.05	15.35	13.65
BI-2034	12 ft. long, 90° heavy duty extrusion takes loadings for spans over 5 ft. long. Additional returns reinforce strength. Flanges are both ⅝" deep.	38.10	34.30	30.50
BI-2034-3	3 ft. length BI-2034	11.40	10.25	9.10
BI-2034-6	6 ft. length BI-2034	21.90	19.70	17.50
BI-2034-9	9 ft. length BI-2034	31.15	28.05	24.90
BI-2044	12 ft. long, 90° reinforcing angle screws to return flanges of BI-2034 for extra rigid, boxed in section. Use with heavy duty BI-1011 spacer bar and BI-2018 and BI-2028 extrusions to build almost any size structure.	14.35	12.90	11.50
BI-2044-3	3 ft. length BI-2044	4.20	3.80	3.35
BI-2044-6	6 ft. length BI-2044	8.10	7.30	6.50
BI-2044-9	9 ft. length BI-2044	11.70	10.55	9.35
BI-2045	90° inset frame angle for fastening rear end of chassis runners where they do not extend to full unit depth; mounts vertically between top and bottom front-to-rear extrusions.	Write for prices		
BI-2074	12 ft. long, 90° external extrusion for 20 ga. panels on one flange while other is extended ⅝" for ⅛" panels.	Write for prices		
BI-2144	90° external extrusion with one extended and one deep recessed flange. For fitting recessed doors, etc. to standard Imlok structures.	86.95	78.25	69.55

Imlok® "Prototyper" Cabinets

INTERNAL EXTRUSIONS

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BI-2032	12 ft. long, 90° internal extrusion to fit BI-1028; has two panel retaining grooves; for unbraced spans up to 3 ft. long.	$28.50	$25.65	$22.80
BI-2032-3	3 ft. length BI-2032	8.65	7.80	6.90
BI-2032-6	6 ft. length BI-2032	16.30	14.65	13.05
BI-2032-9	9 ft. length BI-2032	23.20	20.90	18.55
BI-2051	12 ft. long, 67½° internal extrusion to fit BI-1017 connector. For use in unbraced spans up to 3 ft.	28.90	26.00	23.10
BI-2051-3	3 ft. length BI-2051	8.20	7.40	6.55
BI-2051-6	6 ft. length BI-2051	16.15	14.55	12.90
BI-2051-9	9 ft. length BI-2051	22.20	20.00	17.75
BI-2091	12 ft. long, 60° internal extrusion; fits BI-1025 connector.	28.20	25.40	22.55
BI-2091-3	3 ft. length BI-2091	8.65	7.80	6.90
BI-2091-6	6 ft. length BI-2091	16.30	14.65	13.05
BI-2091-9	9 ft. length BI-2091	23.20	20.90	18.55
BI-2006	12 ft. lg., 45° internal extrusion has one ⅝" flange, the other with panel-retaining groove. For flat-topped, sloping front cabinets.	24.25	21.85	19.40
BI-2006-3	3 ft. length BI-2006	7.45	6.70	5.95
BI-2006-6	6 ft. length BI-2006	13.95	12.55	11.15
BI-2006-9	9 ft. length BI-2006	20.10	18.10	16.10
BI-2071	12 ft. long, 30° internal extrusion; fits BI-1021 connector.	28.80	25.90	23.05
BI-2071-3	3 ft. length BI-2071	8.65	7.80	6.90
BI-2071-6	6 ft. length BI-2071	16.30	14.65	13.05
BI-2071-9	9 ft. length BI-2071	23.10	20.80	18.50
BI-2031	12 ft. long, 22½° internal extrusion; fits BI-1013 connector.	28.20	25.40	22.55
BI-2031-3	3 ft. length BI-2031	8.65	7.80	6.90
BI-2031-6	6 ft. length BI-2031	16.05	14.45	12.85
BI-2031-9	9 ft. length BI-2031	23.20	20.90	18.55

TABLE TOP OR FOOT EXTRUSION

BI-2009	12 ft. long, table-top extrusion for use at base of cabinet, as vertical member where double radius between cabinets is undesirable. Has flange with normal retaining groove; other is 1" deep to support table or bench top.	$21.25	$19.15	$17.00
BI-2009-3	3 ft. length BI-2009	6.40	5.75	5.10
BI-2009-6	6 ft. length BI-2009	12.25	11.05	9.80
BI-2009-9	9 ft. length BI-2009	17.40	15.65	13.90

SPACER BARS AND REINFORCEMENT EXTRUSIONS

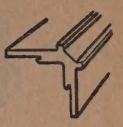
Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BI-2008	12 ft. long, spacer bar extrusion for use with any spacer bar connector. Serves as a cross-bracing member or to sub-divide panels. Uses BI-2028 reinforcing channel.	$25.95	$23.35	$20.75
BI-2008-3	3 ft. length BI-2008	7.80	7.00	6.25
BI-2008-6	6 ft. length BI-2008	14.70	13.25	11.75
BI-2008-9	9 ft. length BI-2008	21.25	19.15	17.00
BI-2018	12 ft. long, heavy duty version of BI-2008	30.30	27.25	24.25
BI-2018-3	3 ft. length BI-2018	9.70	8.75	7.75
BI-2018-6	6 ft. length BI-2018	19.05	17.15	15.25
BI-2018-9	9 ft. length BI-2018	25.95	23.35	20.75
BI-2028	12 ft. long, reinforcing channel for above BI-2008 and BI-2018 spacer bar extrusions. Screws to flanges; gives rigid boxed-in section. Also useful as a base member.	29.80	26.80	23.85
BI-2028-3	3 ft. length BI-2028	9.25	8.35	7.40
BI-2028-6	6 ft. length BI-2028	17.65	15.90	14.10
BI-2028-9	9 ft. length BI-2028	25.35	22.80	20.30

EXTERNAL SPACER BAR CONNECTORS

Bud No.	Description	Net Each, Lots of 1-14	15-24	25-34
BI-1004	90° external spacer bar connector; one leg fits BI-2004, 2014, 2024, 2054, 2064, 2074 or 2084 extrusion, other two legs fit BI-2008 or 2018 spacer bar extrusion.	$ 5.05	$ 4.55	$ 4.05
BI-1011	This connector specially designed for use with 90° external heavy duty extrusion BI-2034. One leg fits this extrusion as well as all other 90° external extrusions. The other two legs fit BI-2008 and 2018.	4.15	3.75	3.30
BI-1018	67½° external spacer bar connector; brace or sub-divide walls where BI-1016 is used at corners. One leg fits BI-2041; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1026	60° version of BI-1018. One leg fits BI-2081; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1007	45° version of BI-1018. One leg fits BI-2005, BI-2015 or BI-2025; other two fit any spacer bar extrusion.	5.10	4.60	4.10
BI-1022	30° version of BI-1018. One leg fits BI-2061 extrusion; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1014	22½° version of BI-1018. One leg fits BI-2021; other two fit any spacer bar extrusion.	4.15	3.75	3.30

INTERNAL CORNER CONNECTORS

BI-1028	90° internal connector gives an included angle of 90° for L-shaped structures. One leg fits BI-2032 extrusion; other two fit any 90° external extrusion (BI-2004, BI-2014, BI-2024, BI-2034, BI-2054 and BI-2064).	$ 4.15	$ 3.75	$ 3.30
BI-1017	67½° internal connector used where two walls are to meet to include a 67½° angle. One leg fits BI-2051 extrusion; other two fit any 90° external extrusion.	4.15	3.75	3.30
BI-1025	60° version of BI-1017. One leg fits BI-2091; other two fit any 90° external extrusion.	4.15	3.75	3.30
BI-1006	45° version of BI-1017. One leg fits BI-2006; other two fit any 90° external extrusion. Helps make flat top, sloping front structure.	5.10	4.60	4.10
BI-1021	30° version of BI-1017. One leg fits BI-2071; other two fit any 90° external extrusion.	4.15	3.75	3.30
BI-1013	22½° version of BI-1017. One leg fits BI-2031; other two fit any 90° external extrusion.	4.15	3.75	3.30

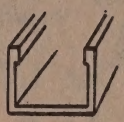

BI-2032

BI-2051

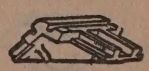
BI-2006

BI-2009

BI-2008


BI-2028

BI-1011


BI-1018

BI-1028

BI-1017

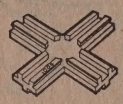
BUD Imlok® "Prototyper" Cabinets

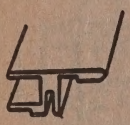
BI-1029

BI-1019

BI-1003

BI-1005


BI-1009


BI-2901

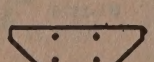
BI-2042

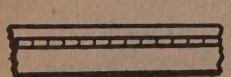
BI-3003

BI-3012

BI-1008

BI-4601


BI-9414


BI-9651

INTERNAL SPACER BAR CONNECTORS

Bud No.	Description	Net Each, Lots of 1-14	15-24	25-34
BI-1029	90° internal spacer connector permits bracing or sub-division of spans of BI-2032. One leg fits BI-2032 internal extrusion; other two fit BI-2008 and BI-2018 spacer bar extrusions.	$4.15	$3.75	$3.30
BI-1019	67½° internal spacer bar connector is companion to BI-1017 for sub-dividing or cross-bracing. One leg fits BI-2051; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1027	60° version of BI-1019 above; companion for BI-1025. One leg fits BI-2091; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1010	45° version of BI-1019; companion for BI-1006. One leg fits BI-2006; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1023	30° version of BI-1019; companion to BI-1021. One leg fits BI-2071; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1015	22½° version of BI-1019; companion to BI-1013. One leg fits BI-2031; other two fit any spacer bar extrusion.	4.15	3.75	3.30
BI-1030	Table top (or foot) spacer bar connector. One leg fits BI-2009; other two fit spacer bar extrusions BI-2008, 2018.	4.15	3.75	3.30

SPECIAL CONNECTORS

BI-1003	T-junction connector makes it possible to form a T with two lengths of extrusion; also for picture-frame effect. Fits extrusions BI-2004, BI-2014, BI-2024, BI-2054, BI-2064.	$2.85	$2.55	$2.30
BI-1005	Table top (or foot) connector radiused in one plane only; produces flat surface with a recess to take a table top. It can be used as a foot or for wall mounting. One leg fits any 90° external extrusion BI-2004, BI-2014, BI-2024, BI-2034, BI-2054 and BI-2064. The other two legs fit table top extrusion BI-2009.	3.60	3.25	2.90
BI-1009	Spacer bar cruciform connector for use with spacer bar extrusions for right-angles in middle of wall or a cabinet, acting as cross-bracing members or dividing the wall into four panels. Each arm fits extrusion BI-2008 or BI-2018.	5.10	4.60	4.10
BI-1033	90° internal kneehole connector, use with BI-2032 on all three legs.	7.80	7.00	6.25

EXTERNAL AND INTERNAL CUTTING JIGS

Bud No.	Description	Net Each, Lots of 1-9	10-14	15-19
BI-3003	90° external cutting jig for any 90° external extrusion (BI-2004, BI-2014, BI-2024, BI-2034, BI-2054, BI-2064), for cutting to length and for mitering extrusion flanges at 45°.	$30.90	$27.80	$24.70
BI-3002	45° external cutting jig for use with BI-2005, BI-2015 and BI-2025.	42.75	38.50	34.20
BI-3004	22½° external cutting jig for use with BI-2021.	46.50	41.85	37.20
BI-3005	30° external cutting jig for use with BI-2061.	49.00	44.10	39.20
BI-3006	60° external cutting jig for use with BI-2081.	49.00	44.10	39.20
BI-3007	67½° external cutting jig for use with BI-2041.	49.00	44.10	39.20
BI-3012	90° internal cutting jig produces a mitered butt joint between two lengths of 90° external extrusion when fitted to 90° internal corner connector BI-1028. For use with all 90° external extrusions (BI-2004, BI-2014, BI-2024, BI-2034, BI-2054 and BI-2064).	49.00	44.10	39.20
BI-3008	22½° internal cutting jig for use with BI-1013.	49.00	44.10	39.20
BI-3009	30° internal cutting jig for use with BI-1021.	49.00	44.10	39.20
BI-3010	60° internal cutting jig for use with BI-1025.	49.00	44.10	39.20
BI-3011	67½° internal cutting jig for use with BI-1017.	49.00	44.10	39.20

IMLOK ACCESSORIES

BI-1008	Stacking plate for use with table top connector BI-1005 to permit stacking of cases but can be fitted in any 90° corner or used as a mounting for casters, adjustable feet, etc.	$ 2.10	$ 1.90	$ 1.70
BI-4302	Concealed hinge, cadmium-plated brass with stainless steel pin. Used with 90° external extrusions BI-2004, BI-2014, BI-2024 and BI-2054.	5.40	4.85	4.30
BI-4303	Lift-off heavy duty concealed hinge, cadmium-plated brass with stainless steel pin. Suitable for left- or right-hand doors and fits extrusions BI-2008, BI-2015, BI-2018, BI-2021, BI-2024, BI-2025, BI-2041, BI-2054, BI-2061, BI-2081 and BI-2084.	8.50	7.65	6.80
BI-4601	Ventilation ring, chrome-plated with aluminum gauze. Normally used in addition to slots and louvers and are easily fitted to 2⅝" dia. holes with fixed clips supplied.	8.10	7.30	6.50
BI-9414	Steel gusset plate for bracing corners where extra reinforcing is required or as a mounting for casters, rubber feet, etc.	3.30*	2.95†	2.65‡
BI-9651	Open hinge, made of mild steel, 4 ft. lengths.	11.70*	10.55†	9.35‡

GLAZING SECTIONS AND ACCESSORIES

Provide the facility for fitting glass or any other material panels up to ⅜" thickness to almost any standard Imlok extrusion.

BI-2901	12 ft. long, glazing extrusion needs only to be cut to length and mitered; no drilling or tapping operations are required. Use with extrusions BI-2004, BI-2005, BI-2006, BI-2008, BI-2009, BI-2014, BI-2015, BI-2021, BI-2024, BI-2025, BI-2031, BI-2032, BI-2038, BI-2041, BI-2051, BI-2061, BI-2064, BI-2071, BI-2081 and BI-2091.	$27.00	$24.30	$21.60
BI-2901-3	3 ft. length BI-2901	7.95	7.15	6.35
BI-2901-6	6 ft. length BI-2901	14.95	13.45	11.95
BI-2901-9	9 ft. length BI-2901	20.70	18.65	16.55
BI-4711	Retaining plate for clamping BI-2901 to mating extrusion.	1.35	1.20	1.10
BI-4712	Mitre bracket for glazing extrusion BI-2901	1.35	1.20	1.10
BI-2042	12 ft. long, Y-strengthener slides inside any external extrusion except 45° to reinforce it.	15.75	14.20	12.60
BI-2042-3	3 ft. length BI-2042	4.50	4.05	3.60
BI-2042-6	6 ft. length BI-2042	8.70	7.85	6.95
BI-2042-9	9 ft. length BI-2042	12.15	10.95	9.70

Net Each, Lots of: *1–14; †15–24; ‡25–34.

Muffin® Fan

The dependable, low cost, largest selling fan for commercial cooling applications.

- 105 cfm free air delivery
- 4.68" square x 1.50" depth
- weight 17 oz.
- acoustical rating as low as NC-38
- more than 10 years continuous duty at 20°C
- impedance protected
- for ambients to 70°C
- UL yellow card recognized and CSA approved

Model No.	Part No.	Bearing	Volts	Hz	Watts	CFM
MU2A1	028021	sleeve	115	50/60	14	105
MU2B1	028027	ball	115	50/60	14	105
MU3A1	028023	sleeve	230	50/60	14	105
MU3B1	028029	ball	230	50/60	14	105

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499	500-999
MU2A1	15.15	13.75	12.65	11.75	11.00	10.30	9.70
MU2B1	24.30	22.05	20.25	18.85	17.60	16.50	
MU3A1	15.70	14.25	13.05	12.15	11.35	10.65	10.00
MU3B1	24.80	22.55	20.70	19.25	18.00	16.85	

Sentinel® Fan

An especially rugged fan for severe application conditions, including temperature and shock.

- 105 cfm free air delivery
- 4.68" square x 1.50" depth
- weight 16 oz.
- acoustical rating as low as NC-40
- stainless steel ball bearings
- impedance protected
- for ambients to 100°C
- meets MIL E-4970A
- UL yellow card recognized

Model No.	Part No.	Volts	Hz	Watts	CFM
S747	020128	115	50/60	14	105
S756	020146	230	50/60	14	105

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499
S747	29.40	27.85	25.25	22.05	21.25	
S756	29.40	27.85	25.25	22.05	21.25	

Centaur® Fan

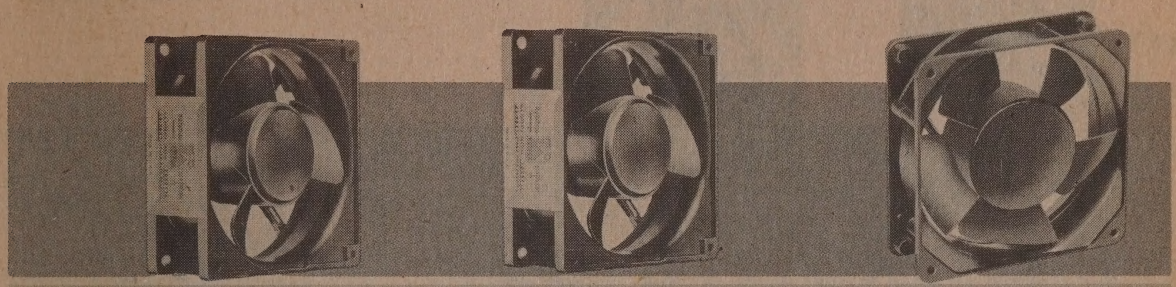
The highest performance in air and pressure delivery for a fan of its size.

- 115 cfm free air delivery
- 4.69" square x 1.53" depth
- weight 19 oz.
- rugged die cast aluminum venturi
- acoustical rating as low as NC-47
- impedance protected
- for ambients to 70°C
- UL yellow card recognized and CSA approved

Model No.	Part No.	Bearings	Volts	Hz	Watts	CFM
CR2A1	028076	sleeve	115	50/60	16	115
CR52A1	028082	sleeve	230	50/60	16	115

PRICE LIST

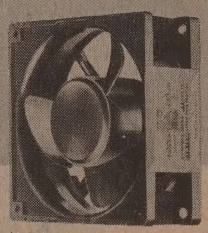
Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499	500-999
CR2A1	15.55	14.50	12.95	12.00	11.10	10.35	10.00
CR5ZA1	15.55	14.50	12.95	12.00	11.10	10.35	10.00

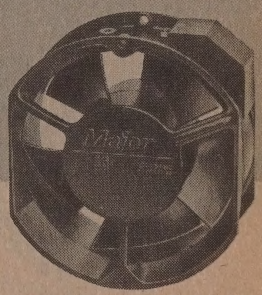


ROTRON® INCORPORATED

Rotron Fans

FOR COMMERCIAL APPLICATIONS





Whisper® Fan

The quiet one – for efficient cooling where low acoustical disturbance is a must.

- 52 or 75 cfm free air delivery
- 4.68" square x 1.50" depth
- weight 17 oz.
- acoustical rating as low as NC-17
- 10 years continuous duty at 20°C
- impedance protected
- for ambients to 70°C
- UL yellow card recognized and CSA approved

Model No.	Part No.	Volts	Hz	Watts	CFM
WR2A1	027117	115	50/60	7	52
WR2H1	027119	115	50/60	7	75

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499	500-999
WR2A1	16.30	14.80	13.60	12.65	11.80	11.05	10.40
WR2H1	17.00	15.45	14.15	13.20	12.30	11.55	10.85

Major® Fan

For low cost, low noise, high pressure/volume cooling in the tightest of spaces.

- 260 cfm free air delivery
- 6.38" dia. x 2.00" depth
- weight 2.3 lbs
- acoustical rating as low as NC-55
- all metal 1 piece venturi
- long life ball bearings
- thermally protected
- for ambients to 70°C
- UL yellow card recognized

Model No.	Part No.	Volts	Hz	Watts	CFM
MA2B4	026551	115	50/60	34	260
MA77B4	026553	230	50/60	28	260

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499
MA2B4	38.45	35.00	32.20	29.60	27.45	25.70
MA77B4	38.45	35.00	32.20	29.60	27.45	25.70

Biscuit® Blower

The only air moving device that fits inside a 1¾" rack panel mounted instrument.

- 25 cfm free air delivery
- high pressure capability
- built around famous Muffin fan features
- 4.75" square x 1.56" depth
- weight 19 oz.
- acoustical rating as low as NC-42
- for ambients to 72°C
- UL yellow card recognized

Model No.	Part No.	Volts	Hz	Watts	CFM
BT2A1	025447	115	50/60	16	25
BT3A1	025449	230	50/60	17	25

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499	500-999
BT2A1	18.85	17.40	16.15	15.25	14.45	13.75	13.15
BT3A1	18.85	17.40	16.15	15.25	14.45	13.75	13.15

Sprite® Fan

A smaller size fan that delivers relatively high pressures at close-to-maximum air delivery.

- 37 cfm free air delivery
- 3.13" square x 1.64" depth
- weight 14 oz.
- acoustical rating as low as NC-39
- impedance protected
- for ambients to 60°C
- UL yellow card recognized and CSA approved
- 12" long 18 Ga. leads

Model No.	Part No.	Volts	Hz	Watts	CFM
SU2A1*	028064	115	50/60	10	37
SU3A1*	028067	230	50/60	10	37
SU2C1*	028070	115	50/60	5	21

*Super quiet model

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499	500-999
SU2A1	15.60	14.15	13.00	12.10	11.30	10.60	9.95
SU3A1	16.10	14.65	13.45	12.50	11.70	10.95	10.30
SU2C1	16.30	14.80	13.60	12.65	11.80	11.05	10.40

Airflow Interlock Switches

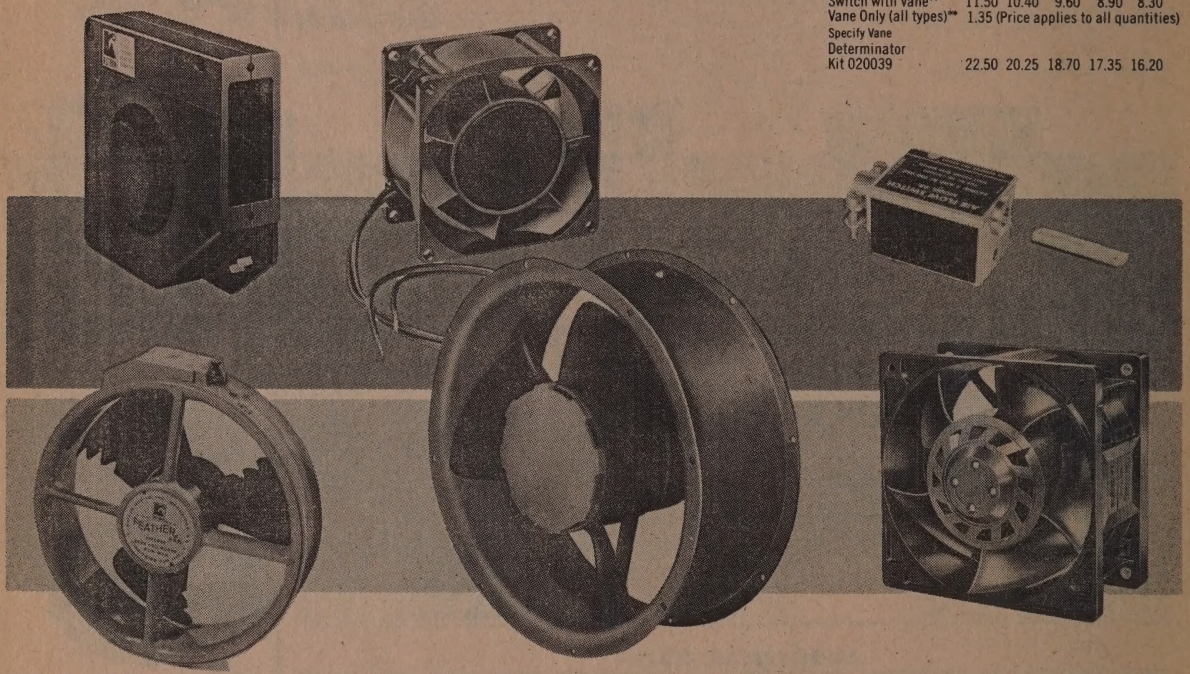
Model 2A Airflow Switch detects loss of airflow to protect equipment.

- rated at 5 amps 250 VDC
- SPDT actuation
- interchangeable vanes available for 8 sensitivity ranges
- mounts to round or flat duct with single screw

Determinator Kit available with complete set of 8 vanes and Model 2A Switch in plastic box.

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249
Switch with Vane**	11.50	10.40	9.60	8.90	8.30
Vane Only (all types)**	1.35 (Price applies to all quantities)				
Specify Vane Determinator Kit 020039	22.50	20.25	18.70	17.35	16.20



Feather® Fan

High volume air performance where space is severely limited, particularly in depth.

- 270 cfm free air delivery
- 7" dia. x 2.47" depth
- weight 1.5 lbs.
- exclusive new Feathered Edge™ blade is extra quiet at free delivery — NC-48
- permanently lubricated ball bearings
- permanent split capacitor motor, capacitor provided
- for ambients to 65°C
- UL yellow card recognized

Model No.	Part No.	Volts	Hz	Watts	CFM	Thermal Protector
FF103	026161	115	50/60	20	270	No
FF113	026165	115	50/60	20	270	Yes
FF203	026162	230	50/60	20	270	No
FF213	026166	230	50/60	20	270	Yes

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249	250-499
FF103	37.80	36.30	32.20	29.05	28.10	26.20
FF113	42.00	39.75	35.80	32.40	31.30	29.20
FF203	37.80	36.30	32.20	29.05	28.10	26.20
FF213	42.00	39.75	35.80	32.40	31.30	29.20

Caravel® Fan

Maximum air volume, from a narrow fan, for flushing large racks and cabinets.

- 590 cfm free air delivery
- 10" dia. x 3.5" depth
- weight 4.4 lbs.
- ball bearing thermally protected slow speed motor
- acoustical rating as low as NC-45
- for ambients to 60°C
- UL yellow card recognized and CSA approved

Model No.*	Part No.	Volts	Hz	Watts	CFM
CL2L2	020188	115	50/60	61	590
CL2T2	020189	115	50/60	61	590
CL3L2	020190	230	50/60	61	590
CL3T2	020191	230	50/60	61	590

*T = with terminals, L = with leads

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249
CL2L2	34.00	30.65	28.25	26.20	24.95
CL2T2	34.95	31.50	29.05	27.00	25.60
CL3L2	34.00	30.65	28.25	26.20	24.95
CL3T2	34.95	31.50	29.05	27.00	25.60

Tarzan® Fan

High air volume and pressure combined, for tightly packed cabinets and chassis.

- 340 cfm free air delivery
- 6.91" square x 4.34" depth
- weight 5 lbs.
- acoustical rating as low as NC-57
- ball bearing thermally protected motor
- for ambients to 55°C
- centrifugal blower performance in a compact axial flow fan
- UL yellow card recognized

Model No.*	Part No.	Volts	Hz	Watts	CFM
TN3A2	020174	115	50/60	85	340
TN3C2	020169	115	50/60	85	340
TN3A3	020172	230	50/60	85	340
TN3C3	020177	230	50/60	85	340

*A = terminals, C = leads

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99	100-249
TN3A2	53.45	46.55	43.15	39.70	36.30
TN3C2	52.60	45.75	42.35	38.90	35.55
TN3A3	53.45	46.55	43.15	39.70	36.30
TN3C3	52.60	45.75	42.35	38.90	35.55

Aximax® - 1, 2, & 3

Family of miniature, high-performance air movers for air-borne and other critical space/weight/performance applications.

- free air delivery from 11 cfm to 157 cfm
- optional Altivar® motors automatically increase speed with altitude
- life expectancies from 10,000 hours up at 72°C
- withstand ambients up to 257°F (125°C)
- sizes: 1½" x 1½", 2" x 1½", and 3" x 2 5/16"
- weight 4 oz., 4½ oz., and 14 oz. respectively
- meet all applicable military specifications

Models for 115 VAC, 1 phase, 400 Hz; 200 VAC, 3 phase, 400 Hz; and 115 VAC 1 phase, 60 Hz (except Aximax 1)

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99
AXIMAX1	69.25	62.60	55.05	51.90
AXIMAX2	58.75	53.10	46.75	44.05
AXIMAX3	80.15	72.50	63.75	60.10

*60 Hz models slightly higher.

Propimax® 2, 3, & 3B

Large-volume and high-pressure air movers for airborne equipment.

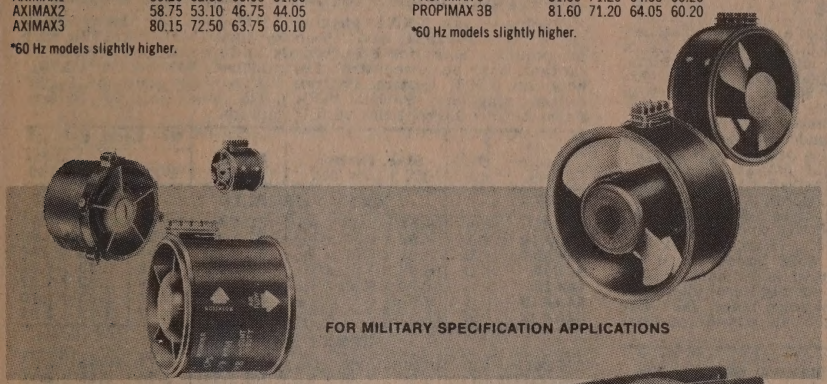
- free air delivery from 22 cfm to 190 cfm
- offer pressures as high as 7" H_2O at cut-off
- optional Altivar® motors automatically increase speed with altitude
- life expectancies of 10,000 hours at 14.7 psia and 72°C
- withstand ambients up to 257°F (125°C)
- size/weight: 3¼" x 1½" and 6.5 oz., for Propimax 2, 3¾" x 2" and 15.2 oz. for Propimax 3 & 3B
- meet all applicable military specifications

Models for 115 VAC, 1 phase, 400 Hz; 200 VAC, 3 phase, 400 Hz; 115 VAC, 1 phase, 60 Hz

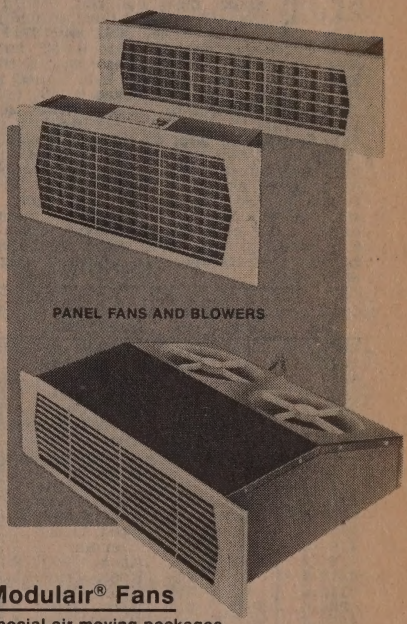
PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99
PROPIMAX 2	76.50	64.65	60.30	57.35
PROPIMAX 3	81.60	71.20	64.05	60.20
PROPIMAX 3B	81.60	71.20	64.05	60.20

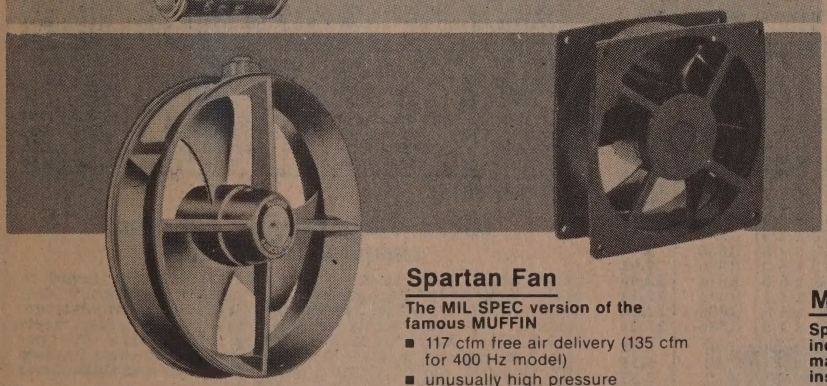
*60 Hz models slightly higher.



FOR MILITARY SPECIFICATION APPLICATIONS



PANEL FANS AND BLOWERS



Saucer® Fan

High volume and high pressure both, from a minimum of fan space.

- 280 cfm free air delivery
- generates pressures of over .5" H_2O
- driving motor entirely within hub for minimum depth - 2.50", dia. 7"
- pre-lubricated stainless steel ball bearings
- for ambients from −60°F (−54°C) to 255°F (+125°C)
- clamping rings at venturi ends for easy mounting
- meets all applicable military specifications

Motor Series	Volts	Hz	Watts	CFM
340 ZS	115	50/60	24	280

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99
Series 340ZS	80.60	68.55	62.65	59.45

Spartan Fan

The MIL SPEC version of the famous MUFFIN

- 117 cfm free air delivery (135 cfm for 400 Hz model)
- unusually high pressure characteristics (up to .5" hg)
- dimensionally interchangeable with Muffin fan (4.68" square x 1.50")
- Double shielded stainless steel ball bearings
- lubricated for life
- highly efficient multi-slot motor
- withstands ambients from −60°F (−54°C) to 255°F (125°C)
- venturi, spiders, and hub are single aluminum casting for shock and vibration resistance
- meets all applicable mil specs for ground and shipboard

Motor Series	Volts	Hz	Watts	CFM
682 YS	115	50/60	12.5	117
810 DS	115	400	13	135

Type SL with leads, Type ST with terminals

PRICE LIST

Model No.	Quantity 1-9	10-24	25-49	50-99
Series 682YSL	54.70	45.90	42.10	40.80
Series 810DSL	82.05	68.85	64.60	61.05
Series 682YST	58.40	48.95	45.80	43.35
Series 810DST	85.70	71.90	67.40	63.75

Modulair® Fans

Special air moving packages incorporate proven Rotron fans to maximize air flow and simplify installation.

- fit standard 19" relay racks and cabinets
- incorporate washable filters, and grilles for attractive appearance

MB-9100

- uses three Muffin Fans to provide 240 cfm free air delivery
- 5¼" high, 19" wide, 3½" deep

MB-9200

- uses two Feather Fans to provide 400 cfm free air delivery
- 8¾" high, 19" wide, 3½" deep

MB-5100

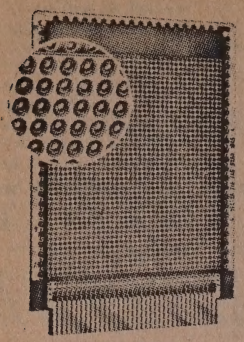
- uses two Feather Fans to provide 400 cfm
- special angle allows base mounting, minimizes eddying
- 5¼" high, 19" wide, 13 21/32" deep, 13 lbs.

PRICE LIST

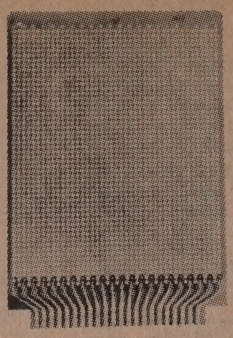
Model No.	Quantity 1-4	5-9	10-24	25-49	50-Up
MB5100-Type 100	108.25	102.85	98.15	89.05	86.75
MB9100-Type 100	66.00	63.65	60.05	58.45	56.20
MB9200-Type 100	85.45	81.65	79.90	75.60	72.60
MB9300-Type 100	124.00	117.80	111.60	105.45	99.20

*All F.O.B. Burbank, California

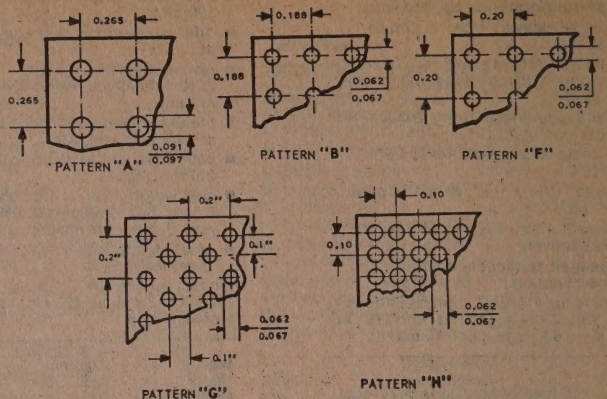
Vector Bord® and Plugboards



4112-4



3662



DIP PLUGBORDS

3682 Series: Mount Wire-Wrap* sockets. Have interleaved etched tinned power and ground buses, punched 0.042″ holes on 0.1″ x 0.1″ grid, epoxy glass material, etched nickel gold contacts. **–4** model has O/A etched tinned ground plane with etched clearance area on each hole. **3662 and 3719 Series:** Upper area is copper-free and punched with 0.042″ holes on 0.1″ x 0.1″ grid. Board material is epoxy glass; etched contacts are nickel gold. **3677 Model:** Has etched 3-hole tinned pads, interleaved buses for Vcc and ground, punched 0.042″ holes on 0.1″ x 0.1″ grid, epoxy glass material, etched nickel gold contacts, holds 24 14-pin or 21 16-pin DIP's. **–2 Model** is the same but 6½″ long. **4112 Series:** Has punched 0.042″ holes spaced on 0.1″ x 0.1″ grid, groups of 3-hole etched tinned pads, interleaved zig-zag bus, back side tinned ground plane with etched clearance holes. Ideal for soldered circuits mixing any size DIP's, transistors, or discretes. Etched contacts are nickel gold. **4066 Series:** Ideal for wrapped wire construction. Has O/A punched 0.042″ holes spaced on 0.1″ x 0.1″ grid, two interleaved tinned zig-zag buses plus back side tinned ground plane with etched clearance holes. **3690 Extender:** Permits operation of wired plugboards outside of card enclosures.

Vector No.	Contacts	Spacing In.	Description	Size, In.	Receptacle	Net Each
3677	44	.156	Epox. Glass	4.5 x 9.6	R644	$10.38
3677-2	44	.156	Epox. Glass	4.5 x 6.5	R644	9.28
3682	44	.156	Epox. Glass	4.5 x 9.6	R644	10.97
3682-2	44	.156	Epox. Glass	4.5 x 6.5	R644	9.81
3682-4	44	.156	Epox. Glass	4.5 x 6.5	R644	10.69
3662	44	.156	Epox. Glass	4.5 x 6.5	R644	5.95
3662-2	44	.156	Epox. Glass	4.5 x 9.6	R644	11.45
3662-5	44	.156	Epox. Glass	4.5 x 4.5	R644	6.88
3719-1	72	.100	Epox. Glass	4.5 x 6.5	R636-1	9.08
3719-4	72	.100	Epox. Glass	4.5 x 9.6	R636-1	11.20
3719-5	72	.100	Epox. Glass	4.5 x 4.5	R636-1	8.03
848PWE	35*	.....	Univ. Glass	4.5 x 6.5	R635	9.14
3797	30	.....	Epox. Glass	2.73 x 4.5	R630	4.66
3797-1	30	.....	Phenolic	2.73 x 4.5	R630	3.81
3797-2	30	.....	Epox. Glass	2.73 x 4.5	R630	6.01
4112-4	44	.156	Epox. Glass	4.5 x 6.5	R644	13.60
4112-5	44	.156	Epox. Glass	4.5 x 4.5	R644	12.23
4066-4	36/72	.100	Epox. Glass	4.5 x 6.5	R636-1	13.60
4066-5	36/72	.100	Epox. Glass	4.5 x 4.5	R636-1	12.23
R635	35*	.....	Receptacle	4.21 x .53 x .828		6.35
R636-1	72	.....	Receptacle	4.44 x .34 x .610		5.18
R644	44	.....	Receptacle	4.36 x .34 x .442		4.32
R644-1#	44	.....	Receptacle	4.36 x .41 x .730		7.20
R644-2#	44	.....	Receptacle	3.16 x .37 x .625		5.46
R644-3#	44	.....	Receptacle	4.36 x .41 x .550		4.49
R630	30	.....	Receptacle	3.27 x .34 x .442		6.18
3690	44	.....	Extender	4.5 x 8	†	10.24

*Elco Varicon contacts. †Permanently mounted receptacle. #Has solder tabs. For 0.025″ sq. wire wrap tail model, order R644-3. *Reg. Gardner-Denver TM.

PLUGBORDS

Pre-punched plugbords speed production of printed circuit prototypes or serve as ready-to-wire structures for card mounted circuitry in any equipment using plug-in circuit cards. Plugbords are ⅛″ thick epoxy paper per MIL-P-22323 Type PEE or G-10 epoxy glass per MIL-P-18177 with pre-punched .062 holes located on alternate 0.1 centers. Contacts attached at bottom are Elco Varicon on .2 centers or 2 oz. copper etched on .156 centers with "lands" terminating around holes near bottom edge of board. Precision punched holes accept Vector T-28 MiniKlips, standard turned terminals, or eyelets.

Vector No.	Type	Contacts	Size, In.	Net Each
812	Epoxy paper	16 Varicon	4½ x 6½	$4.34
812WE	Epoxy glass	16 Varicon	4½ x 6½	5.12
R616-1	Recept. for above	16	.....	3.49
837	Epoxy paper	12 Varicon	3 x 4½	3.39
837WE	Epoxy glass	12 Varicon	3 x 4½	3.76
R612-1	Recept. for above	12	.....	2.82
848WE	Epoxy glass	35 Varicon	4½ x 6½	8.86
838	Epoxy paper, 2 sides	43 etched	4½ x 6½	5.19
838A	Epoxy paper, 1 side	22 etched	4½ x 6½	3.77
838AWE	Epoxy Glass	22 etched	4½ x 6½	$4.25

VECTORBORD® PUNCHED TERMINAL BOARD

Available in tax XXXP phenolic (MIL-P-3115B), ivory epoxy paper (MIL-P-22324) or G-10 epoxy glass (MIL-P-18177), with pre-punched holes for breadboards and prototypes. Flame retardant. May be sawed, drilled or punched. **Pattern "A":** 0.091″ holes on 0.265″ centers. **Pattern "G":** 0.062″ holes on 0.200″ centers, staggered. **Pattern "H":** 0.025″ holes on 0.05″ centers. **Pattern "P":** 0.042″ holes on 0.1″ centers.

Vector No.	Pattern	Size, Inches W. x L. x Th.	No. of Holes	Net Each, Lots of 1-19	20-99	100-199
XXXP PHENOLIC						
32AA9	A	8.51 x 2.41 x 3/32	32 x 9	$0.74	$0.65	$0.62
32AA18	A	8.51 x 4.80 x 3/32	32 x 18	1.05	.95	.88
45B30	B	8.51 x 5.69 x 1/16	45 x 30	1.04	.93	.88
90B30	B	16.97 x 5.69 x 1/16	90 x 30	2.28	2.00	1.91
64A18	A	16.99 x 4.80 x 1/16	64 x 18	1.58	1.42	1.32
64AA18	A	16.99 x 4.80 x 3/32	64 x 18	2.03	1.83	1.70
64AA32	A	16.99 x 8.51 x 3/32	64 x 32	3.47	3.12	2.91
EPOXY PAPER						
85F24EP	F	16.99 x 4.80 x 1/16	85 x 23	$2.74	$2.46	$2.31
85G24EP‡	G	16.99 x 4.80 x 1/16	2(85 x 23)	2.74	2.46	2.31
85G42EP	G	16.99 x 8.51 x 1/16	2(85 x 42)	4.75	4.27	3.99
EPOXY GLASS						
32A18WE	A	8.51 x 4.80 x 1/16	32 x 18	$2.39	$2.15	$2.02
42G24WE	G	8.51 x 4.80 x 1/16	2(42 x 23)	2.37	2.12	1.98
64A18WE	A	16.99 x 4.80 x 1/16	64 x 18	4.26	3.83	3.58
85G24WE	G	16.99 x 4.80 x 1/16	2(85 x 23)	4.76	4.27	4.00
85H48WE	H	17.00 x 4.80 x 1/16	84 x 48	2.52	2.28	2.11
170H48WE	H	8.51 x 4.80 x 1/16	169 x 48	5.08	3.85	3.60

‡Irregular borders.

MICRO-VECTORBORD® PUNCHED INSULATING BOARD

Pre-punched epoxy glass or epoxy paper insulating board in choice of 1/32″ or 1/16″ thickness. Flame retardant. P pattern is ideal for dual-in-line circuit packages, sockets and other microminiature modules. EP type meets MIL-P-22324. Epoxy glass meets MIL-P-18177 XXXP type is PBE-P per MIL-P-3115. C1 types have 2 oz. copper one side; C2 has 2 oz. copper two sides. **Pattern "P":** Has .042″ dia. holes on 0.1″ grid. **Other sizes and thicknesses available on request.**

Vector No.	Size, Inches W. x L. x Th.	No. of Holes	Net Each, Lots of 1-19	20-99	100-999
59P19-032	2 x 6 x 1/32	59 x 19	$1.03	$0.92	$0.87
59P44-032	4½ x 6 x 1/32	59 x 44	1.86	1.68	1.56
64P44-062EP	4½ x 6½ x 1/16	64 x 44	1.95	1.75	1.64
84P44-062EP	4½ x 8½ x 1/16	84 x 44	2.43	2.18	1.70
169P44-062	4½ x 17 x 1/16	169 x 44	5.04	4.53	4.23
169P44-062EP	4½ x 17 x 1/16	169 x 44	4.42	3.99	3.72
169P84-062	8½ x 17 x 1/16	169 x 84	9.23	8.26	7.75
169P84-062C2	8½ x 17 x 1/16	169 x 84	13.51	12.16	11.35
64P44-062	4½ x 6½ x 1/16	64 x 44	2.07	1.86	1.73
64P44-062XXXP	4½ x 6½ x 1/16	64 x 44	1.72	1.54	1.45
84P44-062	4½ x 8½ x 1/16	84 x 44	2.56	2.31	2.15
169P47-062EP	17.00 x 4.8 x 1/16	169 x 47	4.60	4.14	3.85
169P59-047	17.00 x 6 x 1/16	169 x 59	6.80	6.12	5.72
169P84-062EP	17.00 x 8½ x 1/16	169 x 84	7.84	7.06	6.58

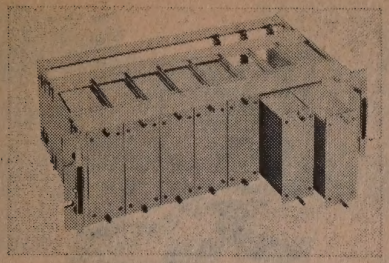
BR27 SERIES RECEPTACLE MTD. CARD GUIDES

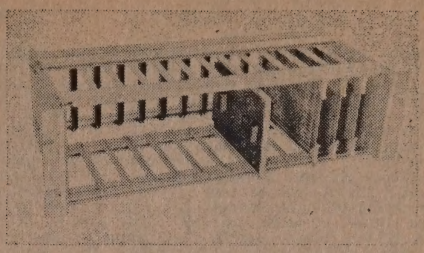
Provides support for receptacle supported circuit boards. For plugbords with centered contacts except BR27-2 for .050″ offset contact plugbords. With mounting hardware.
Any Model—Net per Pair..... **$1.00**

Vector No.	Use With Receptacle	Use With Board	Vector No.	Use With Receptacle	Use With Board
BR27	R644, -1	4.5″ w.	BR27-3	R630	2.73″ w.
BR27-1	R636	4.5″ w.	BR27-4	R644-2	2.73″ w.
BR27-2	R644, -1	4.25″ w.			

QUANTITY PRICES AVAILABLE ON REQUEST

Vector Cases and Cages





VECTOR-PAK SYSTEM

The Vector-Pak System is a coordinated packaging system which provides modular cases and cages for nearly all Vector Plugbords and many industry-standard plug-in boards. Versatility, adjustability and compatibility are integral features for maximum customer benefit. All cages listed are completely assembled. Unassembled kits and parts, plus many other variations and products are available—write for catalog.

Vector No. CMA3-20 Cage—Fully assembled, 5¼″ h. x 8.9″ d., all aluminum with anodized finish, fits 19″ racks. Holds eight 2″ wide x 6½″ long x 4.6″ high modules (EFP204-6.6). Connectors mount easily on adjustable rear struts without drilling holes. Net Each.....**$56.87**

Vector No. CMA4-20 Cage—Same as CMA3-20, except holds eight 2″ wide x 9.7″ long x 4.6″ high modules (EFP204-9.7) and is 12″ deep. Net Each.....**$58.17**

Vector No. CMA3-16 Cage—Same as CMA3-20, except holds ten 1.6″ wide x 6.6″ long x 4.6″ high modules (EFP164-6.6). Net Each.....**$61.74**

EFP MODULES

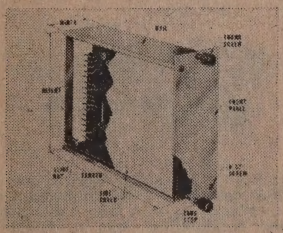
All-aluminum modules are anodized finished and have 5¼″ high front panels with thumb screws, solid rear panels for connector mounting or circuit board slotting, rear sliding side covers, plus inner multiple-grooved top and bottom rails to hold 1/16″ thick circuit boards without special bracketing.

Vector No. EFP164-6.6 Case—Has 6 circuit board grooves spaced 0.150″ apart on top and bottom rails, holds circuit boards 4.5″ wide x 6.5″ maximum length inside. Net Each.....**$6.88**

EFP204-6.6 Case—Same as EFP164-6.6, except has 9 circuit board grooves. Net Each.....**$7.08**

Vector No. EFP204-9.7 Case—Same as EFP164-6.6, except holds circuit boards 4.5″ wide x 9.6″ maximum length inside Net Each.....**$8.12**

CAGE KIT



Vector No. CA52HP-89 Cage Kit—All-aluminum 19″ rack mounting unit is 5¼″ x 8.9″ deep and has 6 bracket-mounted cross members, slotted side walls, and all assembly hardware. Use for maximum flexibility in card or module cage design. Net Each.....**$27.60**

PLUG-IN CASES

Sleek and sturdy aluminum cases have .075″ wide slots on .150″ centers across case width for screw-free mounting of circuit cards or shielding panels. Easily removable fourth side permits side cover to slide off for quick access. Clear anodized; colors available.

Vector No.	Size, Inches Width	Length	Height	For Circuit Card Size. In.	Net Each
W16-12-12B	1.6	1.21	1.21	1.10 x 1.10	$3.51
W16-31-31B	1.6	3.10	3.10	2.98 x 2.98	3.55
W20-15-15B	2.0	1.51	1.51	1.40 x 1.40	4.45
W20-28-46B	2.0	2.85	4.61	2.73 x 4.50	3.78
W20-66-46B	2.0	6.61	4.61	4.50 x 6.50	4.73
W30-66-46B	3.0	6.61	4.61	4.50 x 6.50	5.75
W30-86-46B	3.0	8.61	4.61	4.50 x 8.50	6.42
W45-66-46B	4.5	6.61	4.61	4.50 x 6.50	7.52
W45-86-46B	4.5	8.61	4.61	4.50 x 8.50	8.49
W45-100-46B	4.5	10.00	4.61	4.50 x 9.88	9.94
FT-3	Rubber bumper feet (package of 8)				.87

VECTOR-PAK CARD CAGES

19″ rack mounting cages are supplied completely assembled, ready for connectors. Models listed accommodate 1/16″ thick cards 4.5″ maximum to 3″ minimum width x 6.5″ long. Heavy extruded aluminum cross members (T-Struts) provide strength and easy infinitely variable connector spacing. 21 pairs of 4-40 connector mounting nuts are furnished installed.

Vector No. CCK-13 Card Cage—19″ wide x 5¼″ high x 8.9″ deep. Has 21 pairs of riveted anodized aluminum card guides. Net Each.....**$34.07**

Vector No. CCK-13P Card Cage—Same as CCK-13, except has 21 pairs of riveted plastic guides. Net Each.....**$34.07**

Vector No. CCK-3 Card Cage—Has 108 grooves 0.075″ wide for 1/16″ circuit cards in extruded aluminum plates mounted top and bottom. Vertically and horizontally adjustable rear cross members have 21 pairs of 4-40 nuts in captive grooves for easy connector mounting. Net Each.....**$28.82**

CARD GUIDES

Extruded plastic or aluminum guides are supplied with screws and nuts for mounting wherever required. Package of 12 with mounting hardware.

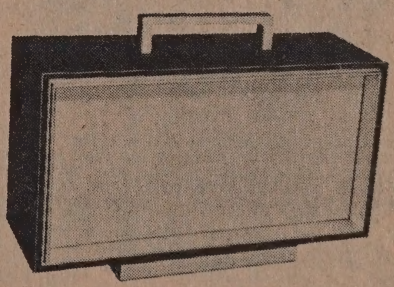
Vector No. BR20-4HP Card Guide—Plastic for 5″ long cards. Net Each.....**$2.47**

Vector No. BR20-4H Card Guide—Aluminum for 5″ long cards. Net Each.....**2.47**

Vector No. BR20-6HP Card Guide—Plastic for 6.5″ long cards. Net Each.....**2.55**

Vector No. BR20-6H Card Guide—Aluminum for 6.5″ long cards. Net Each.....**2.55**

MULTI-MOD CASES

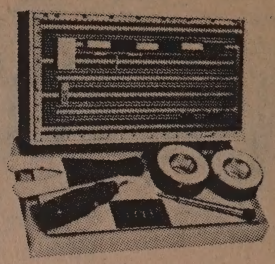


Modular plug-in cases have tube base type plugs, metal covers, fastening hardware, and aluminum bases where indicated. Ideal for building plug-in solid-state circuits or incorporating newer circuitry without chassis rewiring.

Vector No.	Plug Type	Size, Inches	Internal Structure	Net Each
B-8	8 Octal	2″ sq. x 2″	None	$2.07
B-10	8 Octal	2″ sq. x 2.5″	None	2.08
C-10	8 Octal	2″ sq. x 2.5″	None	1.96
C-12K1.02	8 Octal	2″ sq. x 3″	None	1.42
G2.1-8	9 Min.	¼″ rd. x 2″	Cntr. Screw/ Ins. Spacer	1.75
G2.1-8F	9 Min.	¼″ rd. x 2″	None	1.81
G2.2-8	7 Min.	⅝″ rd. x 2″	Cntr. Screw/ Ins. Spacer	1.70
G2.2-8F	7 Min.	⅝″ rd. x 2″	None	1.81
511	Terminal card for C-12K1.02, .093″ holes			.99
514	Terminal card for C-12K1.02, .062″ holes			1.24

Vector IC Breadboarding Kits

40X SOLDER KIT



Unique new kit for faster circuit construction. Features P173 Wiring Pencil and "solder-thru" insulated wire. The tool is used to route and draw #36 gauge wire around tabs or component leads from a self-contained spool. A touch of solder melts through the insulation, thus assuring fast, reliable connections. Kit contains P173 Tool; one "P" pattern Padboard 4½" x 8" x 1/16" with etched, tinned copper oval pads and buses; one plain "P" pattern Micro-Vectorbord® 4½" x 8" x 1/16"; over 300 assorted terminals and pins including solderable and wrappable types; six 16-pin DIP sockets; two round 8-pin IC sockets; two 570G-1 16-pin solderless breadboard sockets; 25 R41 sockets for LED's with .018" leads; solderless slip-on contacts for .040" pins; 100 ft. of bare and insulated #22 gauge wire; 400 ft. of #36 gauge "solder thru" wire; wire jumpers; solder preforms; bus strips; DIP marker strips; foam mounting pad; pot and switch mounting loops; and 2" high aluminum chassis frame.

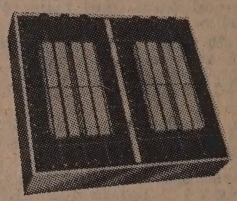
Vector No. 40X Solder Kit—Net Each.....**$66.85**

41X COMBINATION WIRE WRAPPING/SOLDER CONSTRUCTION KIT

Kit has almost everything needed to make wire wrapped circuit breadboards. Includes P.C. Padboard and hand wire wrapping tool for fast, reliable connections; 100 ft. of wire-wrapping #28 gauge hook-up wire; component lead bender; "P" pattern Micro-Vectorbord chassis 4½" x 8" x 1/16"; wire cutter and stripper; over 300 terminals including four different .025" square types and some solder types; ten 16-pin wire wrap DIP sockets; R32 socket pins; socket contacts for .018" LED's; bus strips; pot and switch mounting loops; terminal installing tools; alignment block; and 2" high aluminum chassis frame.

Vector No. 41X Construction Kit—Net Each.....**$89.25**

51X DIP PATCHBOARD



Flexible and adjustable. Handles microprocessor chips, MSI and LSI packages with .6" as well as .3" spaced leads. Accepts up to 12 DIP's. Includes 4½" x 8" glass epoxy "P" pattern Micro-Vectorbord with printed registration mounted on a 1" high aluminum frame. Has eight 24-quad Klip-Bloks (T66-96); four 48-tie-point Klip-Buses (T45-48); three 5-way power binding posts installed; four Klip-Strips (T45-4); DIP marker strips for pin identification; adapter pins (T49-1) for large leads; complete instructions and application suggestions.

Vector No. 51X DIP Patchboard—Net Each.....**$25.50**

32XA +POSITIVE PHOTOSENSITIZED ETCHED CIRCUIT KIT

Make finely detailed, professional quality etched circuits without photography or negative reversing in less than an hour. Kit has everything except hot water and yellow "safe" light. Uses supplied positive artwork including lines, dots, DIP, IC and transistor base patterns. Includes one each 1 oz. copper-clad-one-side boards 7.9" x 9", 4½" x 6½", 2.73" x 4½"; one each 2-sided boards 4½" x 6½", 4½" x 7" with .042" hole pattern; Mylar*; sufficient amonium persulfate etchant; positive developer; glass pressure plate; Rubylith; plastic etching/developing tray; and complete instructions. *Reg. DuPont TM.

Vector No. 32XA Etched Circuit Kit—Net Each.....**$26.20**

25X EXPERIMENTERS CHASSIS KIT

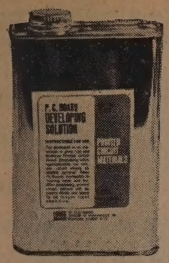
Large kit has big 8½" x 17" x 3/32" Vectorbord chassis with 3/32" diam. holes on .265" centers; 2" high aluminum mounting frame. Kit is ideal for experimenting with tubes, transistors, and discrete components. Most connections can be made without solder, using the included solderless T32 or T30N-2 terminals. Strong chassis accommodates large heavy components. Being solderless, most parts are reusable. Includes two power transistor sockets; four universal TO-5 type 4-lead transistor sockets; three 7-pin, three 9-pin, and two 8-pin octal tube sockets; over 100 solder terminals; bus strips; hook-up wire and patch leads; miscellaneous screws, nuts, spacers, brackets; and layout paper.

Vector No. 25X Experimenters Kit—Net Each.....**$24.78**

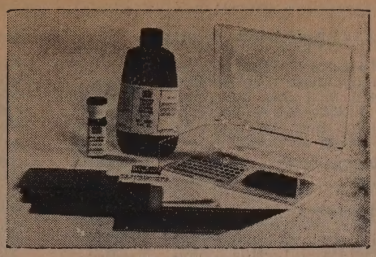
OUR STOCKS ARE ALWAYS KEPT COMPLETE AND UP-TO-DATE.

ASK FOR INFORMATION ON ANY NEW OR UNLISTED PRODUCTS.

PRINTED CIRCUIT MATERIAL, KITS AND ACCESSORIES



22-234



22-296 Kit

PRINTED CIRCUIT MATERIAL AND KITS

G-C Etch Resist Ink Pen—Felt tip pen for making resist circuits directly on PC boards. Fine point black ink dries instantly. Can be removed with resist ink remover or fine steel wool.
No. 22-220—Net Each.....**$1.10**
G-C Etch Resist Sensitizer—Photo sensitizes PC boards. Air dries in seconds.
No. 22-230—3-oz. aerosol. Net..**$ 2.97**
No. 22-231—16-oz. aerosol. Net **10.67**
G-C Developing Solution—For developing patterns on PC boards. Perfect pattern in less than a minute. Makes PC board non-sensitive to light.
No. 22-234—16-oz. Net Each.....**$1.27**
No. 22-235—1 gallon. Net Each..**6.55**
G-C Etching Solution—For removing copper foil from PC boards.
No. 22-237—6-oz. Net Each.....**$1.32**
No. 22-238—32-oz. Net Each.....**3.25**
G-C Stripping Solution—Removes remaining etch resist, dye and lacquer from PC boards after etching process.
No. 22-240—2-oz. Net Each.....**$1.05**
G-C Etch Resist Lacquer—For drawing circuit patterns on PC boards.
No. 22-244—½ oz. Net Each.....**$0.85**
G-C Silicone Resin Lacquer—Provides tough protective coat on PC. Insulates, protects and prevents arcing and shorting.
No. 22-245—16-oz. aerosol. Net...**$5.49**
G-C Silver Print—For drawing or repairing printed circuits. Leaves a highly conductive coating. Air drying. Pure silver.
No. 22-246—½ Troy oz. Net...**$11.90**
G-C Printed Circuit Boards—Made of glass epoxy base. 1 oz. grade—0.0014.
No. 22-250—3″ x 5″ x 1/16″ copper one side. Net Each.....**$1.38**
No. 22-255—3″ x 5″ x 1/16″ copper both sides. Net Each.....**$1.38**
No. 22-260—4″ x 6″ x 1/16″ copper one side. Net Each.....**$2.15**
No. 22-265—4″ x 6″ x 1/16″ copper both sides. Net Each.....**$2.15**
G-C Drill Bits—For drilling component lead wire holes in phenolic and glass epoxy PC boards. High speed tool steel for long life. Standard aircraft length.
No. 22-275—No. 66 Bit (.0330″ dia.); No. 60 Bit (.0400″ dia.); No. 1/16 Bit (.0625″ dia.). Net Each.....**$2.40**
No. 22-276—No. 3/32 Bit (.0938″ dia.); No. 31 Bit (.1200″ dia.); No. 27 Bit (.1440″ dia.). Net Each.....**$2.60**
G-C Contact Frame—Assures perfect transfer of circuit negatives to sensitized 4½″ to 6½″ PC boards.
No. 22-280—Net Each.....**$5.45**
G-C Developing and Etching Tray Set—Aluminum and plastic trays for developing and etching PC boards. Includes 2 aluminum trays for developing and 1 plastic tray for etching PC boards.
No. 22-284—Set of 3 trays. Net...**$1.65**
G-C Layout Film—For printed circuit layout. Made of DuPont Mylar Matte finish.
No. 22-290—2 sheets, 8½″ x 11″...**$1.21**
No. 22-292—1 sheet, 34″ x 44″.....**4.29**
G-C Ruby Lith—Makes negatives of PC patterns without using photographic equipment. Cut and peel type. 1 sheet, 34″ x 44″.
No. 22-294—Net Each.....**$1.32**
G-C Printed Circuit Kit—Kit contains 4½″ x 3″, 4½″ x 2″ and 2¼″ x 3″ (2) copper clad boards, etching solution, etch resist lacquer, layout strips and circles, polishing pad and brushing tool. With instruction manual and etching tank plastic case.
No. 22-296—Net Each.....**$5.95**
G-C Professional Printed Circuit Kit—Kit contains: Drafting aids, tray set, etch resist sensitizer, etch resist lacquer, developing solution, etch solution, stripping solution, layout film (2 sheets, 8½″ x 11″), contact frames and 2 PC boards (3″ x 5″ x 1/16″; 4″ x 6″ x 1/16″).
No. 22-297—Net Each.....**$21.95**

PRESSURE SENSITIVE PC DRAFTING AIDS

Pressure sensitive adhesives with repeat adhesive can be re-positioned several times All patterns accurate to ±.002 (IPC Standard) or better. Net/Pkg.....**$1.27**

G-C No.	Description*	Qty./ Pkg.
21-100	TO-5, 3-lead	18
21-200	Twice 21-100 size	18
21-400	Four times 21-100 size	16
21-101	TO-5, 4-lead	20
21-201	Twice 21-101 size	18
21-401	Four times 21-101 size	16
21-102	TO-5, dual transistor	20
21-202	Twice 21-102 size	18
21-402	Four times 21-102 size	16
21-103	TO-5, 8-lead	20
21-203	Twice 21-103 size	18
21-403	Four times 21-103 size	16
21-104	TO-5, 10-lead	20
21-204	Twice 21-104 size	18
21-404	Four times 21-104 size	16
21-105	TO-5, 12-lead	20
21-205	Twice 21-105 size	18
21-405	Four times 21-105 size	16
21-110	TO-18, 3-lead	20
21-210	Twice 21-110 size	18
21-410	Four times 21-110 size	16
21-120	Dual in-line, 14-lead	16
21-220	Twice 21-120 size	16
21-420	Four times 21-120 size	5
21-121	Dual in-line, 16-lead	16
21-221	Twice 21-121 size	16
21-421	Four times 21-121 size	5
21-130	Flatpack, 14-lead	16
21-230	Twice 21-130 size	16
21-430	Four times 21-130 size	5
21-131	Flatpack, 14-lead	16
21-231	Twice 21-131 size	16
21-431	Four times 21-131 size	5
21-152	Delineation marks	15
21-252	Twice 21-152 size	18
21-452	Four times 21-152 size	16
21-150	Targets	24
21-250	Twice 21-150 size	18
21-450	Four times 21-150 size	5
21-140	Connector contact patterns	8
21-240	Twice 21-140 size	6
21-440	Four times 21-140 size	5
21-141	Connector contact patterns	8
21-241	Twice 21-141 size	6
21-441	Four times 21-141 size	5
21-142	Connector contact patterns	8
21-242	Twice 21-142 size	6
21-442	Four times 21-142 size	5

***DIMENSIONS**

G-C No.	Inches			
	O.D.	I.D.	†	‡
21-100	.100	.015	.041	.200
21-101	.080	.015	.026	.150
21-102	.058	.015	.020	.200
21-103	.062	.015	.025	.200
21-104	.062	.015	.025	.230
21-105	.062	.018	.018	.230
21-110	.087	.015	.025	.100
21-120	#	.015	.030	.300
21-121	#	.015	.030	.300
21-130	§	§	.023	.312▲
21-131	•	•	.018	.250▲
21-140	■	■	.050	.....
21-141	♦	♦	.062	.....
21-142	I	I	.062	.....

†Space between terminals. ‡Overall width center to center. §.187″ w. x .027″ d. #.125″ w. x .070″ d. •.123″ w. x .032″ d. ▲Between inner edges of 7-lead patterns. ■.375″ w. x .050″ d. ♦.375″ w. x .062″ d. I.375″ w. x .093″ d.

G-C also offers a wide range of "B" NEG negative drafting aids, donut pads, combination pack, drafting tape, combination assortments and component removing set (Quick-Pick). Write for complete information.

PRINTED CIRCUIT AIDS

G-C Master Printed Circuit Kit—Kit includes: Special printed circuit soldering iron with small tip, low-melt solder, solder washers (fluxed), special PC soldering probe, small tweezers, Print-Kote silicone resin spray No. 14-6, complete instructions.
No. 683—Net Each.....**$18.35**
G-C Standard Printed Circuit Kit—Same as above, less soldering iron.
No. 682—Net Each.....**$8.75**
G-C Solder-Wick—Desolders any connection in seconds. Absorbs molten solder instantly. Eliminates component damaging heat build-up.
No. 684—Size, 2, yellow label for miniature PC boards. Pads, .060″–.125″. Net..**$1.64**
No. 685—Size 4, blue label for commercial PC boards and connectors. Pad size, .190″ or larger. Net Each.....**$1.85**
G-C Printed Circuit Service Kit—Kit contains: 14-2 Print-Kote silicone resin, 13-2 Print-Kote solvent, 21-1 ½ Troy oz. pure silver print, 9093 solder probe tool, 9094 stainless brush/scraper, special Print-Kote solder and PC service manual.
No. 680—Net Each.....**$16.62**
G-C K27 Print-Kote Printed Circuit Spray—Spray after repairing TV printed circuit to insulate, protect and prevent shorts.
No. 14-6—6-oz. aerosol. Net Each..**$3.03**
No. 14-2—2-oz. bottle. Net Each..**1.71**
G-C Pure Silver Print—Coating containing pure silver powder as pigment. Used for making or repairing printed circuits. Used to apply conductive coating to non-conductors. Brush applicator in cap.
No. 21-1—½ Troy oz. Net.....**$11.77**
No. 21-2—1 Troy oz. Net Ea...**23.25**
G-C Copper Print—High conductive, fast drying compound to touch up printed circuits. Complete with brush-cap bottle.
No. 20-2—2-oz. Net Each.....**$2.75**
G-C Print-Kote Solvent—Only solvent for silicone resin. Dissolves and removes silicone resin from printed circuits. Can be used for thinner for 14-2 Print-Kote resin.
No. 13-2—2-oz. Net Each.....**$0.66**
G-C Print-Kote Soldering Flux—Non-corrosive liquid flux for easy PC soldering and repairing. Brush-cap bottle.
No. 12-2—2-oz. Net Each.....**$0.83**
G-C Printed Circuit Repair Solder—Specially made for printed circuits. Non-corrosive flux and low melting solder.
No. 9131—11 foot coil. Net Each..**$0.88**

SOLDER AID TOOLS

PC TYPE MINIATURE SIZE—5¾″ LONG
G-C Reamer and Scraper Tip—Twist proof chrome plated steel for scraping joints or reaming out lug holes. Ends insulated.
No. 9069—Plastic handle. Net....**$1.25**
No. 9469—Wood handle. Net.....**1.25**
G-C Brush and Forked Tip—For holding or twisting wires. Ends insulated.
No. 9073—Plastic handle. Net....**$1.30**
No. 9473—Wood handle. Net.....**1.30**
G-C Brush and Scraper Tip—For cleaning and scraping joints. Both ends insulated.
No. 9074—Plastic handle. Net....**$1.25**
No. 9474—Wood handle. Net.....**1.25**
G-C Straight Reamer and Forked Tip—Made from heat treated tool steel.
No. 9075—Plastic handle. Net....**$1.25**
No. 9475—Wood handle. Net.....**1.25**
G-C Angled Reamer and Forked Tip—Forked tip for holding or twisting wires, angled reamer on the other end.
No. 9076—Plastic handle. Net....**$1.25**
No. 9476—Wood handle. Net.....**1.25**

STANDARD TYPE SIZE—7½″ LONG
G-C Straight Reamer and Forked Tip—Chrome plated steel. Ideal for cleaning out lug holes or twisting and holding wires.
No. 9086—Plastic handle. Net....**$1.50**
No. 9486—Wood handle. Net.....**1.50**
G-C Heavy Duty Brush and Forked Tip—Stiff wire brush for cleaning; forked tip for holding wires. Special stainless steel with hardened probe.
No. 9088—Plastic handle. Net....**$1.50**
No. 9488—Wood handle. Net.....**1.50**
G-C Angle Reamer and Forked Tip—Special stainless steel fine point probe to aid in soldering and probing printed circuits.
No. 9093—Plastic handle. Net....**$1.50**
No. 9493—Wood handle. Net.....**1.50**
G-C Brush and Scraper Tip—For scraping and cleaning silicone resin from printed circuits. Fine stainless steel brush, hardened steel scraper.
No. 9094—Plastic handle. Net....**$1.50**
No. 9494—Wood handle. Net.....**1.50**

Chemicals and Cleaners

Most chemicals come in 2-oz. wide mouth bottles for easy use. The plastic cap has a brush attached. Write for prices and information on larger containers, also available.

CEMENTS

G-C Epox Cement—Super-strong adhesive cures at room temperature. Bonds metal, ceramic, glass, plastic, etc. with 3000 lbs./sq. in. strength. Resistant to virtually any environment. Good dielectric property. Mix from kit of 2 tubes in equal amounts; 3 oz.
No. 346—Net Each Kit.....**$2.48**

G-C Epoxy Glue—Super grip, fast set glue is specified by NASA for use in space program. Resists acids, alkali, grease, gas, water, etc. Mix from two tubes in equal parts, hardens in 5 min. under 150° F heat lamp. Kit of 2 tubes, approx. 4-oz.
No. 347—Net Each Kit.....**$3.03**

G-C GR-R-RIP—All new rapid bonding adhesive that makes short work of repair jobs. Sets in seconds; effective on most surfaces: Metal, plastic, rubber and porcelain.
No. 10-115—Net Each.....**$1.99**

G-C Quik-Stik—Epoxide adhesive permanently bonds ceramic, glass, plastic, wood or metal in 5 minutes. Ideal for almost any kind of repairing.
No. 10-114—Net Each.....**$1.49**

G-C Radio Service Cement—The best cement for repairing radios and torn speaker cones or replacing torn cones. Vibrationproof, waterproof and fast drying. Non-shrinking. Use also on plastic, metal, wood, etc.
No. 30-2—2-oz. Net Each.....**$0.83**
No. 30-4—4-oz. Net Each.....**1.09**
No. 34-2-S—Tube. Net Each.....**.83**

G-C Bakelite® Cement—The only cement for use on phenolics. Use on knobs, cabinets, panels.
No. 32-2—2-oz. Net Each.....**$1.27**

G-C Plastic Cement—For broken plastic cabinets, knobs, dials, and crystal assemblies, grille cloth, etc.
No. 32-2A—2-oz. Net Each.....**$0.83**

G-C Rubber-to-Metal Cement — For cementing dial drives, rubber mountings, gaskets, hose, weather stripping, etc.
No. 35-2—2-oz. Net Each.....**$0.83**

G-C Pliobond—A cold-setting, rubber-like, thermoplastic liquid that dries rapidly to a waterproof, chemically-resistant bond with permanent flexibility and very high strength. Glues all materials.
No. 43-2—2-oz. Net Each.....**$0.83**

G-C Acrylic Cement—For Lucite®, plexiglass, and acrylic materials. Strong, fast drying.
No. 40-2—2-oz. Net Each.....**$0.76**

G-C Ne-O-Prene Cement—For cementing neoprene rubber to neoprene or other products, such as metal, wood, paper, etc. Fast drying.
No. 52-2—2-oz. Net Each.....**$1.21**

G-C "Vinylite" Cement—Thermoplastic cement. Clear plastic cement for use in metals, plastics, paper, leather, etc. Sets on cooling.
No. 58-2—2-oz. Net Each.....**$0.83**

LUBRICANTS

G-C Lube-Rex—Reduces noise by preventing corrosion and prolongs life. Excellent for lubricating bearings, gears etc.
No. 1206-S—2-oz. tube. Net Ea...**$0.83**

G-C Pressurized Lubricating Oil—Ideal for hard to reach trouble spots. Will shoot oil up to six feet. Lubricates moving machinery, gears etc.
No. 10-916—6-oz. aerosol. Net....**$1.18**

G-C Reach-All Pen Oiler—Fine electronic oil for radio and TV servicing. Oil meets MIL-L-6085A specs. Tube extends and retracts; dispenses a drop or fraction. Best suited for gears, guns, fishing reels etc.
No. 984—Pen oiler. Net Each....**$1.38**

G-C Contact Burnishing Tool Kit—For servicing of relays, switches. Contains one 2-oz bottle No. 210-2 contact cleaner and burnishing tool.
No. 9339—Net Each.....**$1.21**

LUBRICANTS (CONT'D)

G-C Sili-Spray—High quality silicon lubricant. Applies light lubricant film that lasts and lasts, won't leave residue build-up. Can be used in home, office, or workshop.
No. 10-600—6-oz. aerosol.
Net Each.....**$1.53**

10-600

G-C Moisture Remover—Special ingredients remove moisture, deposit a thin lubricating film preventing further oxidation.
No. 10-700—16-oz. aerosol.
Net Each.....**$2.38**

CLEANERS

G-C Chloro-Kleen—Non-toxic powerful solvent quickly dissolves grease, dirt, oils, tar and waxes. Contains Chlorothene®.
No. 213-G—1-gallon. Net per gal..**$11.00**

G-C Audio-Video Magnetic Tape Head Cleaner—Removes dirt and oxide build-up, won't harm tape or paint finish. May be used on running tape. Comes with 6" spray extension.
No. 10-620—16-oz. spray can. Net.**$2.82**

G-C Electronic Dry Cleaner—A "dry" cleaner for use on contacts, relays and other electronic devices where residual, oily deposits are undesirable. Also an excellent degreaser and a general solvent for inks and gummy deposits on electrical or mechanical devices, such as typewriters, presses, etc. Non-flammable; does not contain carbon tet.
No. 8669—16-oz. Net Each.....**$2.53**

G-C Super Freeze Mist—Enables serviceman to pinpoint bad capacitors, transistors, and oxidized joints by cooling components. Leaves no liquid residue; non-toxic, noninflammable. Cools three times faster than other coolers.
No. 8668—6-oz. Net Each.....**$1.37**
No. 10-702—15-oz. aerosol. Net...**2.75**

G-C Relay-Kleen Contact Cleaner—"Dry" cleaner for relays and contacts. Leaves no oily residual deposit. Also a degreaser and solvent. Noninflammable; contains no carbon tet. In spray can with extension tube for hard-to-reach places.
No. 8682-16—16-oz. Net Each....**$3.84**

G-C Super Contact Cleaner—Heavy duty cleaner formulated to provide protection on all electrical and electronic contacts in switches, tuners, and relays. Preserving and lubricating residue lasts longer than that of any other cleaner.
No. 8680—6-oz. Net Each.....**$1.97**

G-C "Red" Electronic Contact Cleaner—All-purpose lubricant cleaner for contacts. Dissolves dirt, removes corrosion and leaves a protective film.
No. 210-2—2-oz. Net Each.....**$0.83**

G-C Carbon Control Cleaner—Cleans and eliminates noise in carbon volume controls without taking apart. Special applicator. Just squirt cleaner along shaft.
No. 212-2—2-oz. Net Each.....**$0.83**

DOPES, INSULATING LIQUIDS

G-C Liquid Tape—For hard-to-get-at places for high voltage insulation. Use also for anti-rust coating, weatherproofing, etc.
No. 176-2—2-oz. bottle. Net Each**$1.32**
No. 176-16—16-oz. bottle. Net Ea. **7.98**

G-C Liquidope—Clear fast drying. Gives excellent support to coil forms. Non-inductive, all wave coil dope. Use G-C No. 28 for thinner.
No. 36-2—2-oz. Net Each.....**$0.85**

G-C Q-Dope—Liquid polystyrene low-loss coil dope for RF, UHF, and VHF components. Will not change circuit values. Also a polystyrene cement.
No. 37-2—2-oz. Net Each.....**$0.76**

G-C TV Tube Koat—Fast-drying conductive coating for recoating the outside of TV picture tubes that are scratched or peeling. Also used to coat the inside of TV cabinets for prevention of high voltage leaks and static discharge. Ideal for coating at points where ground clips contact tube.
No. 49-2—2-oz. bottle. Net Each..**$0.99**
No. 49-12—16-oz. spray can. Net. **2.70**

DOPES, INSULATING LIQUIDS (CONT'D)

G-C TV High Voltage Corona Dope—For preventing corona shorts in high voltage circuits in TV sets. Easy to apply, air drying. Use on any high voltage circuit.
No. 50-2—2-oz. Net Each.....**$1.05**

G-C Red Glpt Insulating Varnish—Most common coating for solder connections, anti-corona and high voltage points. Heat resistant to 300° F.
No. 90-2—2-oz. Net Each.....**$0.88**

CHEMICAL SPRAY BOMBS

In 6-oz. aerosol spray cans.
G-C K-27 Print-Kote—TV silicone resin for printed circuits.
No. 14-6—Clear. Net Each.....**$3.03**

G-C De-Ox-Id®—Electrical contact cleaner for silver, detent, and radar contacts.
No. 19-6—Net Each.....**$2.48**

G-C Spra-Kleen—Combination cleaner and lubricant for electrical contacts.
No. 8666-16—16-oz. aerosol. Net..**$2.35**

SOLVENTS AND THINNERS

G-C Strip-X—Strips enamel from magnet wire. Just dip wire into and wipe off insulation—cleaned, ready for soldering.
No. 26-2—2-oz. Net Each.....**$1.05**

G-C Cement Thinner—Best thinner for G-C Service Cement.
No. 28-2—2-oz. Net Each.....**$0.72**

G-C Lacquer Thinner—Thins all lacquer, lacquer enamels, telephone black and gray, etc.
No. 29-2—2-oz. Net Each.....**$0.72**

G-C Radio Service Solvent—Best thinner for all cements—dissolves cement off old cones and speakers.
No. 31-2—2-oz. Net Each.....**$0.72**
No. 31-8—8-oz. Net Each.....**1.38**

G-C Q-Dope Thinner—Solvent for Q-Dope and polystyrene materials. Clear water white solvent.
No. 41-2—2-oz. Net Each.....**$0.72**

TUNER CLEANERS

G-C Tuner Bath—Cleanses and degreases tuners. Does not harm plastics and will not detune.
No. 10-901—16-oz. spray can. Net.**$2.77**

G-C Magic Vista Golden Foam Tuner Cleaner—Puts life in color and black and white TV tuners. Cleans, polishes and lubricates tuner contacts. Safe for plastics.
No. 10-800—8-oz. spray can. Net..**$2.52**

SPRA-KOAT CHEMICALS

All Spra-Koat products are supplied in 16-oz. aerosol spray cans.

G-C Zero-Mist—Instantly located defective circuit components of an intermittent nature due to temperature change. Checks components in operation without removal.
No. 8667—Net Each.....**$2.63**

G-C Corona Dope Spra-Koat—Air-drying corona dope for TV hi-voltage work.
No. 47-12—Net Each.....**$3.58**

G-C Koloid Clear Acrylic—Acrylic ester resin compound for high frequency work.
No. 8665—Net Each.....**$2.00**

G-C Koloid K-29 Hi-Voltage Resin—Air-drying clear resin spray for insulating high voltage points or parts.
No. 9123—Net Each.....**$2.50**

HEAT SINK COMPOUNDS

G-C DC-Z9 Silicone Heat Sink Compound—Lowers overall temp. level of electronic devices, seals between transistors, diodes etc. and compound will not dry out or harden. Oxides suspended in silicone dissipate "hot spots."
No. 8109-S—1-oz. tube. Net Each.**$3.25**

G-C Transistor Z5 Silicone Compound—Maintains efficient transfer of heat from transistor to chassis such as in auto radios. Applied to original installation and whenever transistors are replaced.
No. 8101-S—1-oz. tube. Net Each.**$2.92**

®Trademark: Bakelite of Bakelite Corp.; Lucite of DuPont; De-Ox-Id of De-Ox-Id Labs, Chlorothene NU of Dow Chemical Co.

TECHNICAL AIDS

DIP DESOLDERING AND EXTRACTION TOOL

REMOV-IC

Safely extracts soldered 14 and 16 pin DIPS in just seconds while preventing board discoloration, delaminating, measling and the lifting of pads. Simply place REMOV-IC over DIP and press actuator handle bringing heater blocks into contact with DIP. All heat is transferred through leads to the solder. As solder melts, the DIP is extracted. Bio-mechanical design allows easy and accurate positioning over DIPS. Positioners assure heater blocks never touch board eliminating chance of heat damage. Pre-tinned, replaceable heater blocks are designed for uniform heat output and long life. REMOV-IC is completely portable and can be used by anyone in plant or in the field – no waiting for heat-up or special set-ups.

Cat. No. 40-65 **$225.00**

INTEGRATED CIRCUIT TOOLS

INSERTIC

Designed to allow quick, accurate positioning for insertion of I.C.'s. Easy to load—will not damage I.C. and provides maximum protection to leads. Scientifically shaped for fatigue free handling—speeds up I.C. insertion time. Constructed of high impact plastic for years of service. Ideal for use in manufacturing or by service technician.

Cat. No. 9480	**Carded**	**$2.95**
870	**Boxed**	**2.50**

PUL-N-SERTIC

Inserts or extracts I.C.'s quickly, easily—without damage, while providing maximum protection to I.C. leads. Also acts as heat sink when desoldering I.C.'s. Constructed of high impact plastic. Versatile—for use on the production line, in rework area or in the field.

Cat. No. 9481	**Carded**	**$4.95**
875	**Boxed**	**4.20**

INTEGRATED CIRCUIT REMOVAL TOOL KIT

Flat I.C. Removal Tool removes or replaces 8, 10, 14, 16 and 18 pin DIP I.C.'s, and the round TO-5 outline tool that removed JEDEC 99-100 and TO-5 outline I.C.'s in plastic carrying case. Flat tool hooks under diagonal terminals and lifts circuit out. TO-5 tool clamps on circuit and holds it firmly while you desolder leads. Circuit lifts out after desoldering.

Cat. No. 9228	**I.C. Removal Tool Kit**	**$3.07**
9227	**I.C. Removal Tool**	**1.97**
9217	**TO-5 Removal Tool**	**.94**

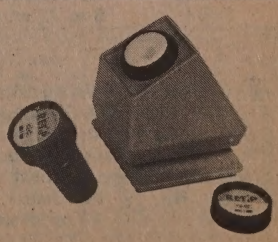
QUICK PICK

Fast, easy method of removing transistors and capacitors. QUICK PICK leaves hands free to desolder leads and hold circuit board. Made of non-magnetic material. 7 different tools fit more than 25 outlines of transistors and can capacitors. Each tool is approximately .028 size larger than part being removed. Color coded for fast easy selection.

Cat. No.		
9216	**Kit of 7 tools**	**$6.65**
9217	**Red, size: .312-.335"**	**.94**
9218	**White, size: .287-.310"**	**.94**
9219	**Blue, size: .262-.285"**	**.94**
9220	**Yellow, size: .212-.235"**	**.94**
9221	**Green, size: .222-.245"**	**.94**
9222	**Mustard, size: .162-.185"**	**.94**
9223	**Orange, size: .183-.206"**	**.94**

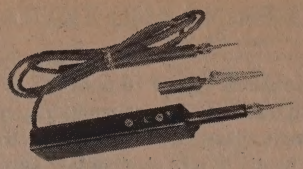
RE-TIP

Cleans soldering iron tips instantly. Simply insert hot iron tip into RE-TIP and then withdraw—all contaminants are instantly removed. Uniformly cleans tips up to ¼" diameter. Prevents contaminated solder joints. Prolongs tip life—tips solder faster, longer. With Base for use in shop, or hand held for portable use and tool box.



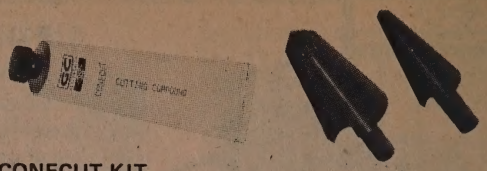
Cat. No. 9482	**RE-TIP base & cartridge**	**$6.25**
9483	**Portable RE-TIP (Refill cartridge only - bubble carded)**	**2.65**
9484	**Refill Cartridge only (boxed)**	**2.65**

TECHNICAL AIDS



PROBE IV
Check four functions with one instrument! PROBE IV lets you test for:
- ✓ Continuity
- ✓ Polarity
- ✓ Voltage
- ✓ Digital Logic

without carrying a multitude of instruments. PROBE IV is lightweight, pocket size and comes with its own protective carrying pouch. Features positive overvoltage protection in the continuity mode.
Cat. No. 5104 **$14.95**



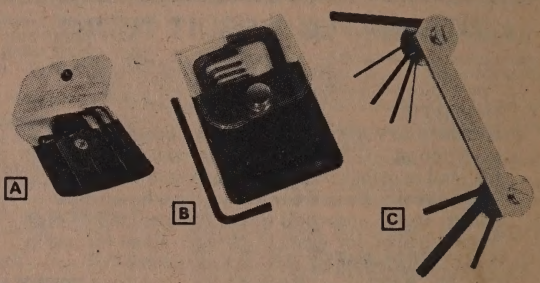
CONECUT KIT
Drill a burr-free hole in sheet or tube in seconds. No center punch hole—no pilot hole. Any number of diameter holes can be drilled—the farther the tool advances, the larger the hole. Kit contains Nos. 1 and 2 drills and Cutting Compound in vinyl carrying pouch.

Cat. No.		
3420	CONECUT KIT	$34.95
3400	No. 1 Drill (1/4"-13/16")	12.95
3405	No. 2 Drill (5/8"-1-3/16")	19.95
3425	Cutting Compound (1 oz.)	2.50

SOLDERLESS TERMINAL TOOL
Handy, heavy duty solderless terminal crimping tool and wire stripper. Crimps all sizes of terminals, strips No. 10 to No. 22 wire.
Cat. No. 8176-S **$6.99**

TEST LIGHTS
Instantly tests both AC and DC circuits. Neon glow lamp varies in light intensity according to voltages. Traces all types of trouble such as grounded lines, open circuits, short circuits.

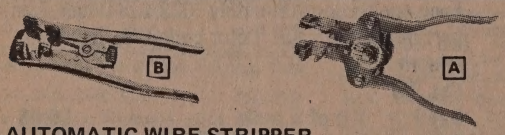
Cat. No.	(5V to 50V AC or DC)	
5105	5" leads with test prods	$1.54
5110	8" leads with alligator clips	2.25
	(60V to 550V AC or DC)	
5100	5" leads with phone tips	.85



A GC HEX-KEY AND SPLINE WRENCH KIT
For both hex and spline type screws. 12 wrenches in leatherette case.
Cat. No. 5028 **$1.75**

B GC POCKET HEX KEY WRENCH SET
7 popular size wrenches .050 to 3/16" fitted in steel case. Convenient and easy to use.
Cat. No. 9124 **$2.15**

C METRIC HEX WRENCH KIT
Kit of 9 most popular size metric hex wrenches. 0.9 mm to 3.2 mm sizes. Made of tempered steel. Complete with plastic carrying pouch.
Cat. No. 5026 **$1.75**

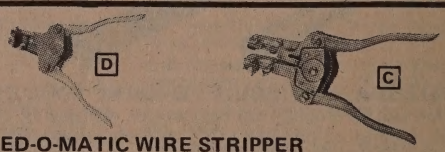


A AUTOMATIC WIRE STRIPPER
"Trig-O-Matic" stay-open feature keeps fine or stranded wires from being crushed. Off/On mechanism enables use as automatic or standard model. At touch of thumb, trigger releases and jaws go back in place. Interchangeable blades.

Cat. No.	For Sizes:	
744	12 to 22 wire	$8.84
744-A	14 to 30 wire	8.84
744-B	10 to 18 wire	8.84
744-D	16 to 22 wire	8.84
744-I	8 to 22 wire	8.84

B SPEEDSTRIP WIRE STRIPPER
With "Stay-Open" feature. New, improved wire strippers that strip fine or stranded wires without crushing. Easily replaced, precision ground steel blades. Ruggedly constructed of pressed steel.

Cat. No.	For Sizes:	
802	10 to 22 wire	$8.84



C SPEED-O-MATIC WIRE STRIPPER
Features "Fully Automatic Delayed Action" to prevent crushing fine or stranded wires. Narrow, easy-grip handles and interchangeable blades.

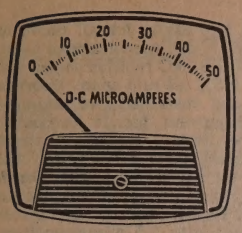
Cat. No.	For Sizes:	
766	12 to 20 wire	$8.84
766-A	14 to 30 wire	8.84
766-B	10 to 18 wire	8.84
766-D	16 to 22 wire	8.84
766-I	8 to 22 wire	8.84

D STANDARD WIRE STRIPPER
Works on 90% of all stripping jobs. Strips wires No. 8 to No. 30. Blades are precision ground steel and are interchangeable. Narrow, easy grip handles.

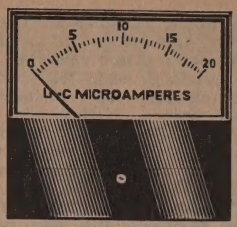
Cat. No.	For Sizes:	
733	12 to 20 wire	$7.25
733-A	14 to 30 wire	7.25
733-B	10 to 18 wire	7.25
733-D	16 to 22 wire	7.25
733-E	14 to 18 wire	7.25
733-I	8 to 22 wire	7.25

GENERAL ELECTRIC Panel Meters

SERIES 250 AND 251 DC PANEL METERS—TAUT BAND



250 BIG LOOK®



251 HORIZON LINE®

Easy-to-read DC panel meters in two styles for all panel and control applications. All DC meters have self-shielded movement with taut-band suspension. All meters meet ANSI Specifications C-39.1. **Accuracy:** ±2% of full scale. **Overload:** DC Voltmeters, 20% momentary and sustained; AC ammeters (momentary), 10 times the rated current for 10 consecutive intervals of ½ second with one minute interval between successive applications; AC ammeters (sustained), 20% for 8 hours. **Scale Data:** 90° rotation. **Insulation Level:** 2600 V rms hi-pot. **Response Time:** 3 seconds maximum for microammeters; 2 seconds maximum for other DC ratings. **Damping:** 40% maximum overshoot with minimum damping factor of 2.5.

Size	250 BIG LOOK® Scale Length	255 HORIZON LINE® Scale Length
1½″	1.32″	1.50″
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″

DC VOLTMETERS—ZERO-LEFT, TAUT BAND

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250120§	2½-inch GE No. 50- 250220§	3½-inch GE No. 50- 250320§	4½-inch GE No. 50- 250420§	1½-inch GE No. 50- 251120§	2½-inch GE No. 50- 251220§	3½-inch GE No. 50- 251320§	4½-inch GE No. 50- 251420§
1.0	1000 Ohms/ Volt	LALA	$23.90	$23.90	$25.90	$26.60	$23.90	$23.90	$25.90	$26.60
3		LJLJ	23.90	23.90	25.90	26.60	23.90	23.90	25.90	26.60
10		MTMT	23.90	23.90	25.90	26.60	23.90	23.90	25.90	26.60
30		NLNL	23.90	23.90	25.90	26.60	23.90	23.90	25.90	26.60
50		NTNT	23.90	23.90	25.90	26.60	23.90	23.90	25.90	26.60
100		PKPK	23.90	23.90	25.90	28.50	23.90	23.90	25.90	28.50
150		PZPZ	23.90	23.90	25.90	28.50	23.90	23.90	25.90	28.50
300		RXRX	25.90	25.90	26.90	29.40	25.90	25.90	26.90	29.40

DC VOLTMETERS—ZERO-LEFT, RATED 0-1 mADC, USE WITH EXTERNAL RESISTOR, TAUT BAND

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250104§	2½-inch GE No. 50- 250204§	3½-inch GE No. 50- 250304§	4½-inch GE No. 50- 250404§	1½-inch GE No. 50- 251104§	2½-inch GE No. 50- 251204§	3½-inch GE No. 50- 251304§	4½-inch GE No. 50- 251404§
500	49	FAFS	$22.90	$22.90	.....	.....	$22.90	$22.90	.....	.....
600	49	FASJ	22.90	22.90	.....	.....	22.90	22.90	.....	.....
750	49	FASM	22.90	22.90	$23.90	$25.60	22.90	22.90	$23.90	$25.60

DC MICROAMMETERS—ZERO-LEFT, TAUT BAND

Scale μA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250100§	2½-inch GE No. 50- 250200§	3½-inch GE No. 50- 250300§	4½-inch GE No. 50- 250400§	1½-inch GE No. 50- 251100§	2½-inch GE No. 50- 251200§	3½-inch GE No. 50- 251300§	4½-inch GE No. 50- 251400§
20	2650	CFCF	$40.80	$40.80	$41.80	.....	$40.80	$40.80	$41.80	.....
50	2385	CYCY	31.80	31.80	33.80	$36.10	31.80	31.80	33.80	$36.10
100	600	DRDR	26.90	26.90	27.90	30.50	26.90	26.90	27.90	30.50
200	188	EAEA	23.90	23.90	25.90	28.50	23.90	23.90	25.90	28.50
500	185	EMEM	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60

DC MICROAMMETERS—ZERO-CENTER, TAUT BAND

Scale μA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250101§	2½-inch GE No. 50- 250201§	3½-inch GE No. 50- 250301§	4½-inch GE No. 50- 250401§	1½-inch GE No. 50- 251101§	2½-inch GE No. 50- 251201§	3½-inch GE No. 50- 251301§	4½-inch GE No. 50- 251401§
20–0–20	1340	CFCF	$35.80	$28.80	$30.40	.....	$28.80	$28.80	$30.40	.....
100–0–100	188	DRDR	23.90	19.20	20.80	$28.50	19.20	19.20	20.80	$24.00

DC MILLIAMMETERS—ZERO-LEFT, TAUT BAND

Scale mA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250100§	2½-inch GE No. 50- 250200§	3½-inch GE No. 50- 250300§	4½-inch GE No. 50- 250400§	1½-inch GE No. 50- 251100§	2½-inch GE No. 50- 251200§	3½-inch GE No. 50- 251300§	4½-inch GE No. 50- 251400§
1	49	FAFA	$22.90	$22.90	$23.90	$25.60	$22.90	$22.90	$23.90	$25.60
3	18	FNFN	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
10	3.2	GZGZ	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
20	2.8	HFHF	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
50	2.6	HYHY	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
100	0.5	JRJR	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
150	0.33	JXJX	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
200	0.25	KAKA	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
300	0.16	KGKG	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
500	0.10	KMKM	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60
800	0.06	KWKW	22.90	22.90	23.90	25.60	22.90	22.90	23.90	25.60

DC AMMETERS—ZERO-LEFT, TAUT BAND

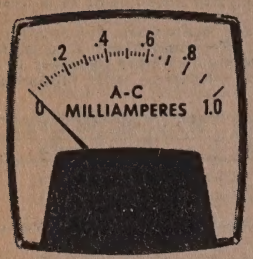
Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50- 250100§	2½-inch GE No.50- 250200§	3½-inch GE No. 50- 250300§	4½-inch GE No. 50- 250400§	1½-inch GE No. 50- 251100§	2½-inch GE No. 50- 251200§	3½-inch GE No. 50- 251300§	4½-inch GE No. 50- 251400§
1	0.050	LALA	$23.30	$23.30	$24.30	$26.20	$23.30	$23.30	$24.30	$26.20
1.5	0.033	LCLC	23.30	23.30	24.30	26.20	23.30	23.30	24.30	26.20
3	0.0167	LJLJ	23.30	23.30	24.30	26.20	23.30	23.30	24.30	26.20
5	0.010	LSLS	23.30	23.30	24.30	26.20	23.30	23.30	24.30	26.20
10	0.0050	MTMT	23.30	23.30	24.30	26.20	23.30	23.30	24.30	26.20
20	0.0025	NGNG	.....	23.30	24.30	26.20	.....	23.30	24.30	26.20
50	0.00100	NTNT	.....	.....	24.30	26.20	.....	.....	24.30	26.20

§When ordering show complete number; example: **50-250120 LALA** for 250 BIG LOOK 1½″ type zero-left, DC voltmeter with 1.0 volt rating.

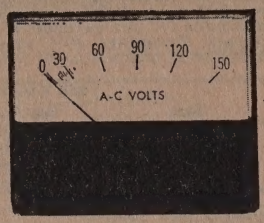
Contact us for availability of additional ratings.

GENERAL ELECTRIC Panel Meters

SERIES 250 AND 251 AC PANEL METERS



250 BIG LOOK®



251 HORIZON LINE®

Handsome, easy-to-read meters in two styles for all panel and control applications. All meters meet ANSI specifications C-39.1. **Accuracy:** AC iron vane type, ±2% FS; AC rectifier type, ±3% FS; expanded scale voltmeters, ±0.5% of mid-span. **Overload:** AC voltmeters, 20% momentary and sustained; AC ammeters (momentary), 10 times the rated current for 10 consecutive intervals of ½ sec with one minute interval between successive applications; AC ammeters (sustained), 20% for 8 hours. **Scale Data:** 90° rotation. **Insulation Level:** 2600 V rms hi-pot. **Burden Data:** AC ammeters, 5 amps, 0.5 VA, 0.5 power factor lagging; AC voltmeters, unity power factor. **Response Time:** 2.5 seconds max. **Damping:** 40% max. overshoot with 2.5 minimum damping factor.

	250 BIG LOOK®	251 HORIZON LINE®
Size	Scale Length	Scale Length
1½″	1.32″	1.50″
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″

AC VOLTMETERS—SELF-CONTAINED, IRON VANE TYPE, PIVOT AND JEWEL

			250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
Scale Volts	Term. Resis., Ohms	§ Add Suffix	2½-inch GE No. 50-250244§	3½-inch GE No. 50-250344§	4½-inch GE No. 50-250444§	2½-inch GE No. 50-251244§	3½-inch GE No. 50-251344§	4½-inch GE No. 50-251444§
3	11.1	LJLJ	$21.90	$22.90	$25.80	$21.90	$22.90	$25.80
5	29	LSLS	21.90	22.90	25.80	21.90	22.90	25.80
10	110	MTMT	21.90	22.90	25.80	21.90	22.90	25.80
15	251	NDND	21.90	22.90	25.80	21.90	22.90	25.80
30	779	NLNL	21.90	22.90	25.80	21.90	22.90	25.80
50	2500	NTNT	22.90	23.90	26.70	22.90	23.90	26.70
150	15000	PZPZ	23.90	25.90	28.60	23.90	25.90	28.60
300	70260	RXRX	26.80	27.90	30.50	26.80	27.90	30.50
500	117260	SFSF	.....	34.80	37.10	.....	34.80	37.10
600	140000	SJSJ	.....	34.80	37.10	.....	34.80	37.10

AC MICROAMMETERS AND MILLIAMMETERS—RECTIFIER TYPE, TAUT BAND, ±3% ACCURACY

			250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
Scale	Term. Resis., Ohms	§ Add Suffix	1½-inch GE No. 50-250110§	2½-inch GE No. 50-250210§	3½-inch GE No. 50-250310§	4½-inch GE No. 50-250410§	1½-inch GE No. 50-251110§	2½-inch GE No. 50-251210§	3½-inch GE No. 50-251310§	4½-inch GE No. 50-251410§
500 μA	850	EMEM	$31.30	$31.30	$32.50	$35.00	$31.30	$31.30	$32.50	$35.00
800 μA	620	EWEW	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
1 mA	555	FAFA	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
1.5 mA	344	FDFD	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
2 mA	294	FGFG	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
3 mA	212	FNFN	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
5 mA	148	FXFX	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
10 mA	91	GZGZ	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00
20 mA	63	HFHF	31.30	31.30	32.50	35.00	31.30	31.30	32.50	35.00

AC MILLIAMMETERS—SELF-CONTAINED, PIVOT AND JEWEL, 25-400 Hz

			250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
Scale mA	Term. Resis., Ohms	§ Add Suffix	2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
10	2158	GZGZ	$22.90	$23.90	$26.70	$22.90	$23.90	$26.70
25	341	HJHJ	22.90	.....	26.70	22.90	.....	26.70
50	84	HYHY	22.90	.....	26.70	22.90	.....	26.70
100	21	JRJR	22.90	23.90	26.70	22.90	23.90	26.70
200	4.1	KAKA	22.90	23.90	26.70	22.90	23.90	26.70
500	0.7	KMKM	22.90	23.90	26.70	22.90	23.90	26.70

AC AMMETERS—SELF-CONTAINED, PIVOT AND JEWEL, 25-400 Hz

			250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
Scale Amps	Term. Resis., Ohms	§ Add Suffix	2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
1	0.16	LALA	$22.90	$23.90	$26.70	$22.90	$23.90	$26.70
3	0.015	LJLJ	22.90	23.90	26.70	22.90	23.90	26.70
5	0.007	LSLS	22.90	23.90	26.70	22.90	23.90	26.70
8	0.003	MJMJ	22.90	23.90	26.70	22.90	23.90	26.70
10	0.0024	MTMT	22.90	23.90	26.70	22.90	23.90	26.70
15	0.0016	NDND	22.90	23.90	26.70	22.90	23.90	26.70
20	0.001	NGNG†	23.90	25.90	28.60	23.90	25.90	28.60
30	0.0006	NLNL†	23.90	25.90	28.60	23.90	25.90	28.60
50#	0.0004	NTNT†	.....	27.90	30.50	.....	27.90	30.50
80#	0.0004	PDPD†	.....	31.80	34.40	.....	31.80	34.40

†With external magnetic shield on meter base. §**When ordering show complete number;** example: **50-250244 LJLJ** for 250 BIG LOOK 2½″ AC voltmeter, pivot and jewel iron vane type. #Without sealed terminal studs.

Contact us for availability of additional ratings.

SERIES 250 AND 251 AC PANEL METERS (CONT'D)

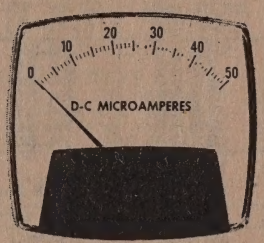
AC AMMETERS—TRANSFORMER-RATED, 0-5 AMPS, 25-400 Hz, PIVOT AND JEWEL

Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK® Net Each, Lots of 1-9			251 HORIZON LINE® Net Each, Lots of 1-9		
			2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
10	0.007	LSMT	$22.90	$23.90	$26.70	$22.90	$23.90	$26.70
15	0.007	LSND	22.90	23.90	26.70	22.90	23.90	26.70
20	0.007	LSNG	22.90	23.90	26.70	22.90	23.90	26.70
30	0.007	LSNL	22.90	23.90	26.70	22.90	23.90	26.70
40	0.007	LSNP	22.90	23.90	26.70	22.90	23.90	26.70
50	0.007	LSNT	22.90	23.90	26.70	22.90	23.90	26.70
75	0.007	LSPB	22.90	23.90	26.70	22.90	23.90	26.70
80	0.007	LSPD	22.90	23.90	26.70	22.90	23.90	26.70
100	0.007	LSPK	22.90	23.90	26.70	22.90	23.90	26.70
150	0.007	LSPZ	22.90	23.90	26.70	22.90	23.90	26.70
200	0.007	LSRL	22.90	23.90	26.70	22.90	23.90	26.70
300	0.007	LSRX	22.90	23.90	26.70	22.90	23.90	26.70
400	0.007	LSSC	22.90	23.90	26.70	22.90	23.90	26.70
500	0.007	LSSF	22.90	23.90	26.70	22.90	23.90	26.70
600	0.007	LSSJ	22.90	23.90	26.70	22.90	23.90	26.70
800	0.007	LSSN	22.90	23.90	26.70	22.90	23.90	26.70
1.0 KA	0.007	LSVA	22.90	23.90	26.70	22.90	23.90	26.70
1.2 KA	0.007	LSVB	22.90	23.90	26.70	22.90	23.90	26.70
1.5 KA	0.007	LSVC	22.90	23.90	26.70	22.90	23.90	26.70
2.0 KA	0.007	LSVE	22.90	23.90	26.70	22.90	23.90	26.70
3.0 KA	0.007	LSVJ	22.90	23.90	26.70	22.90	23.90	26.70

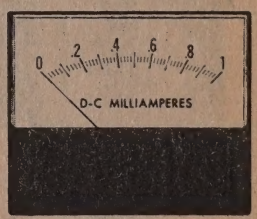
SERIES 254 AND 255 DC PANEL METERS—PIVOT AND JEWEL

Pivot and jewel DC panel meters available in two different styles. All meters meet ANSI Specifications C-39.1. **Accuracy:** ±2% of full scale. **Overload:** DC voltmeters, 20% momentary and sustained; DC ammeters (momentary), 10 times the rated current for 10 consecutive intervals of ½ second with one minute interval between successive applications; DC ammeters (sustained), 20% for 8 hours. **Scale Data:** 90° rotation. **Insulation Level:** 2600 V rms hi-pot. **Response Time:** 3 seconds maximum for microammeters; 2 seconds maximum for all other DC ratings. **Damping:** 40% maximum overshoot with minimum factor of 2.5.

Size	254 BIG LOOK Scale Length	255 HORIZON LINE Scale Length
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″



254 BIG LOOK®



255 HORIZON LINE®

DC VOLTMETERS—ZERO-LEFT

Scale Volts	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254220§	3½-inch GE No. 50-254320§	4½-inch GE No. 50-254420§	2½-inch GE No. 50-255220§	3½-inch GE No. 50-255320§	4½-inch GE No. 50-255420§
1		LALA	$25.10	$27.20	$28.00	$25.10	$27.20	$28.00
3		LJLJ	25.10	27.20	28.00	25.10	27.20	28.00
10	1000	MTMT	25.10	27.20	28.00	25.10	27.20	28.00
30	Ohms	NLNL	25.10	27.20	28.00	25.10	27.20	28.00
50	per	NTNT	25.10	27.20	28.00	25.10	27.20	28.00
100	Volt	PKPK	25.10	27.20	30.00	25.10	27.20	30.00
150		PZPZ	25.10	27.20	30.00	25.10	27.20	30.00
300		RXRX	27.20	28.30	30.90	27.20	28.30	30.90

DC VOLTMETERS—ZERO-LEFT, RATED 0-1 mADC, USE WITH EXTERNAL RESISTORS

Scale Volts	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254204§	3½-inch GE No. 50-254304§	4½-inch GE No. 50-254404§	2½-inch GE No. 50-255204§	3½-inch GE No. 50-255304§	4½-inch GE No. 50-255404§
500	125	FAFS	$24.10	.....	.....	.....	.....	.....
600	125	FASJ	24.10	.....	.....	.....	.....	.....
750	125	FASM	24.10	$25.10	$26.90	$24.10	$25.10	$26.90

DC MICROAMMETERS—ZERO-LEFT

Scale μA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50 254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
20	3400	CFCF	$42.90	$43.90	.....	$42.90	$43.90	.....
50	1600	CYCY	33.40	35.50	$37.90	33.40	35.50	$37.90
100	1525	DRDR	28.30	29.30	32.10	28.30	29.30	32.10
200	690	EAEA	25.10	27.20	28.00	25.10	27.20	28.00
500	220	EMEM	24.10	25.10	26.90	24.10	25.10	26.90

§**When ordering show complete number;** example: **50-254200 CFCF** for 254 BIG LOOK 2½″ type, zero-left DC microammeter with 0–20 μA scale.

Contact us for availability of additional ratings.

SERIES 254 AND 255 DC PANEL METERS (CONT'D)

DC MICROAMMETERS—ZERO-CENTER

Scale μA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK® Net Each, Lots of 1-9			255 HORIZON LINE® Net Each, Lots of 1-9		
			2½-inch GE No. 50-254201§	3½-inch GE No. 50-254301§	4½-inch GE No. 50-254401§	2½-inch GE No. 50-255201§	3½-inch GE No. 50-255301§	4½-inch GE No. 50-255401§
20–0–20	3300	CFCF	$31.32	$33.06	.....	$31.32	$33.06	.....
100–0–100	690	DRDR	20.88	22.62	$26.10	20.88	22.62	$26.10

DC MILLIAMMETERS—ZERO-LEFT

Scale mA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50-254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
1	64	FAFA	$22.90	$23.90	$25.60	$22.90	$23.90	$25.60
3	2.5	FNFN	22.90	23.90	25.60	22.90	23.90	25.60
10	1.8	GZGZ	22.90	23.90	25.60	22.90	23.90	25.60
20	1.5	HFHF	22.90	23.90	25.60	22.90	23.90	25.60
50	1.9	HYHY	22.90	23.90	25.60	22.90	23.90	25.60
100	0.50	JRJR	22.90	23.90	25.60	22.90	23.90	25.60
150	0.33	JXJX	22.90	23.90	25.60	22.90	23.90	25.60
200	0.25	KAKA	22.90	23.90	25.60	22.90	23.90	25.60
300	0.167	KGKG	22.90	23.90	25.60	22.90	23.90	25.60
500	0.100	KMKM	22.90	23.90	25.60	22.90	23.90	25.60
800	0.062	KWKW	22.90	23.90	25.60	22.90	23.90	25.60

DC AMMETERS—ZERO-LEFT

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50-254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
1	0.05	LALA	$23.30	$24.30	$26.20	$23.30	$24.30	$26.20
1.5	0.0333	LCLC	23.30	24.30	26.20	23.30	24.30	26.20
3	0.0167	LJLJ	23.30	24.30	26.20	23.30	24.30	26.20
5	0.01	LSLS	23.30	24.30	26.20	23.30	24.30	26.20
10	0.005	MTMT	23.30	24.30	26.20	23.30	24.30	26.20
20	0.0025	NGNG	23.30	24.30	26.20	23.30	24.30	26.20
50	0.001	NTNT	23.30	24.30	26.20	23.30	24.30	26.20

DC AMMETERS—ZERO-LEFT, 50 mV SHUNT-RATED

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254224§	3½-inch GE No. 50-254324§	4½-inch GE No. 50-254424§	2½-inch GE No. 50-255224§	3½-inch GE No. 50-255324§	4½-inch GE No. 50-255424§
20		ECNG	$23.30	$24.30	$26.20	$23.30	$24.30	$26.20
50		ECNT	23.30	24.30	26.20	23.30	24.30	26.20
75		ECPB	23.30	24.30	26.20	23.30	24.30	26.20
100		ECPK	23.30	24.30	26.20	23.30	24.30	26.20
150	12.5	ECPZ	23.30	24.30	26.20	23.30	24.30	26.20
300	Ohms	ECRX	23.30	24.30	26.20	23.30	24.30	26.20
400	Cali-	ECSC	23.30	24.30	26.20	23.30	24.30	26.20
500	brated*	ECSF	23.30	24.30	26.20	23.30	24.30	26.20
600		ECSJ	23.30	24.30	26.20	23.30	24.30	26.20
1.0 kA		ECVA	23.30	24.30	26.20	23.30	24.30	26.20
1.5 kA		ECVC	23.30	24.30	26.20	23.30	24.30	26.20
2.0 kA		ECVE	23.30	24.30	26.20	23.30	24.30	26.20

DC AMMETERS—ZERO-LEFT, 100 mV, SHUNT-RATED

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254224§	3½-inch GE No. 50-254324§	4½-inch GE No. 50-254424§	2½-inch GE No. 50-255224§	3½-inch GE No. 50-255324§	4½-inch GE No. 50-255424§
20		GBNG	$23.30	$24.30	$26.20	$23.30	$24.30	$26.20
50		GBNT	23.30	24.30	26.20	23.30	24.30	26.20
75		GBPB	23.30	24.30	26.20	23.30	24.30	26.20
100		GBPK	23.30	24.30	26.20	23.30	24.30	26.20
150	25	GBPZ	23.30	24.30	26.20	23.30	24.30	26.20
300	Ohms	GBRX	23.30	24.30	26.20	23.30	24.30	26.20
400	Cali-	GBSC	23.30	24.30	26.20	23.30	24.30	26.20
500	brated*	GBSF	23.30	24.30	26.20	23.30	24.30	26.20
600		GBSJ	23.30	24.30	26.20	23.30	24.30	26.20
1.0 kA		GBVA	23.30	24.30	26.20	23.30	24.30	26.20
2.0 kA		GBVE	23.30	24.30	26.20	23.30	24.30	26.20

DC AMMETERS—ZERO-CENTER

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254201§	3½-inch GE No. 50-254301§	4½-inch GE No. 50-254401§	2½-inch GE No. 50-255201§	3½-inch GE No. 50-255301§	4½-inch GE No. 50-255401§
1–0–1	0.05	LALA	$23.30	$24.30	$26.20	$23.30	$24.30	$26.20
5–0–5	0.01	LSLS	23.30	24.30	26.20	23.30	24.30	26.20
10–0–10	0.005	MTMT	23.30	24.30	26.20	23.30	24.30	26.20
15–0–15	0.0033	NDND	23.30	24.30	26.20	23.30	24.30	26.20

*For use with two-way shunt lead resistance of 0.065 ohms. §**When ordering show complete number**; example: **50-254224 GBNG** for 254 BIG LOOK 2½" type, zero-left DC ammeter (100 mV shunt-rated) with 0–20 amps scale rating.

Contact us for availability of additional ratings.

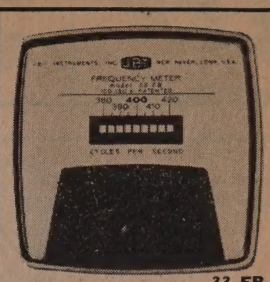
J-B-T® VIBRATING REED FREQUENCY METERS

J-B-T Vibrating Reed Frequency Meters are used extensively in radio, telephone and television service, on engine generator sets, in laboratories, in many types of electronic equipment—wherever constant or known frequency is important to efficient operation of equipment.

MODERN FB SERIES VIBRATING REED FREQUENCY METERS

Modern style; made for easy reading to full limit of accuracy. Permanently calibrated; no temperature compensation needed. Screw term. Typical models listed; others available on order.

J-B-T Model	Range, Hz	No. of Reeds	Standard Voltage	Imped., Ohms	Accuracy ± %	Case Size	Net Each
30-FB	48–52 & 58–62	10	100–130	16,500	0.3	3½″	$41.50
31-FB	58–62	5	100–130	16,500	0.3	3½″	34.50
33-FB	380–420	9	100–130	15,400	0.3	3½″	50.00
34-FB	56–64	9	100–130	16,500	0.3	3½″	41.00
34-FB-Z-11	57.5–62.5	11	100–130	16,500	0.3	3½″	45.00
34-FB-21	45–64	21	100–130	21,800	0.3	3½″	55.00
34-FB-21-115	380–420	21	100–130	15,400	0.3	3½″	61.00

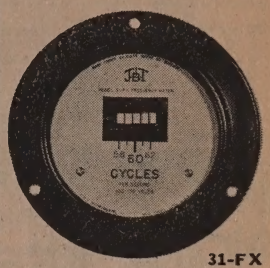

33-FB

ROUND MOLDED AND METAL CASE REED METERS

FHXX models, sealed meters, glass-to-metal construction with solder terminals and detachable flange; **F** models unsealed metal case; **FX** models molded case.

J-B-T Model	Range, Hz	No. of Reeds	Standard Voltage	Ohms per Volt	Accuracy ± %	Case Size	Net Each
30-FX	48–52 & 58–62	10	100–130	140	0.3	3½″	$38.75
31-F	58–62	5	100–130	115*	0.3	3¼″	35.00
31-FX	58–62	5	100–130	120	0.3	3½″	32.75
31-FHXX	58–62	5	100–130	120	0.3	3½″	40.00
33-F	380–420	9	100–130	130*	0.3	3¼″	48.50
33-FX	380–420	9	100–130	130	0.3	3½″	47.25
33-FHXX	380–420	9	100–130	130	0.3	3½″	54.75
34-FX	56–64	9	100–130	140	0.3	3½″	37.75
36-FHXX-21-115	380–420	21	100–130	130	0.3	3½″	68.25

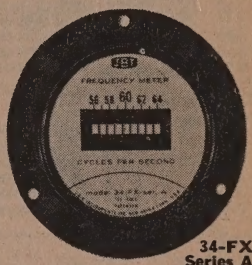
*At 120 VAC. †±0.1% accuracy available, quotation on request.


31-FX

MODERN DESIGN FG SERIES FREQUENCY METERS

Modern appearance with bright textured metal insert below the dial, as illustrated for model 31-EGW-5 elapsed time meter. Has same accuracy and electrical characteristics as corresponding FX frequency meters. Design easily installs in 3½″ wide, 3″ high hole. Three typical FG models listed below, others available on order.

30-FG	48–52 & 58–62	10	100–130	140	0.3	3½″	$40.75
33-FG	380–420	9	100–130	130	0.3	3½″	49.25
34-FG	56–64	9	100–130	140	0.3	3½″	40.50


34-FX Series A

NEW HIGH VISIBILITY EG SERIES ELAPSED TIME METERS

New modern style, matches the look of the new FG series frequency meters. Dimensions are same as those for FG series meters, while mechanical specifications match 31-EXW series meters, (see below). Models listed are examples; other voltages, frequencies and numerals on request.

J-B-T Model 31-EGW-5—Five wide digits, 0–9,999.9 hours, 60 Hz, 110–125 V. Net Each. **$27.00**

J-B-T Model 31-EGW—Six wide digits, 0–99,999.9 hours, 60 Hz, 110–125 V. Net Each.. **27.50**

J-B-T Model 13A-234—Half bezel adapter, separate black molded frame and hardware for picture window appearance on any FG or EG meter. Net Each..... **$3.75**

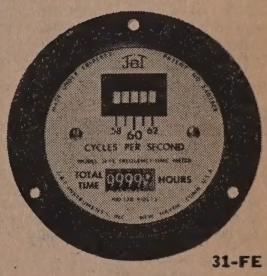
J-B-T Model 13A-239—Same as above, but metal construction for FG and EG meters. Net Each..... **$3.75**

ELAPSED TIME AND 5-REED FREQUENCY METERS 31-FE AND 31-FEX-1

This unique panel instrument combines the elapsed time or running time meter with frequency reeds. It is widely used on motor generator sets and on electrical equipment where maintenance routine calls for periodic servicing. Reads 0–9,999.9 hours; 58–62 hertz at 100–130 volts. Self-starting. Tenths shown in red numerals, all others white numerals on black background. Meter panel 2⅛″ (2⅜″ panel mounting hole recommended); depth behind flange, 4¹⁹⁄₃₂″. Front mounting same as Model 31-F. Variations with 7, 9 or 11 reeds on special order only. 3¼″ metal case.

J-B-T Model 31-FE—Net Each..... **$50.00**

J-B-T Model 31-FEX-1—Same, but with 3½″ metal flange permanently attached for MIL-M-6B mounting. Net Each..... **$54.50**


31-FE

60-Hz ELAPSED TIME METERS 31-EX, 31-EX-200, 31-ES, AND 31-EHXX

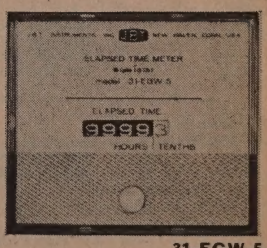
To record operating time of AC electrical and electronic equipment, instrument registers in 1/10th hour steps to 9,999.9 hours, then automatically resets. Shows tenths in red numerals, all others white on black background. Molded case fully encloses all parts. Popular for tube life, TV equipment, punch presses, conveyors, oil burners, maintenance schedules, etc. Meter panel 2¹¹⁄₁₆″ (2¾″ hole recommended); depth behind flange, 3¹⁄₃₂″.

J-B-T Model 31-EX—110–125 volt. Net Each..... **$22.75**

J-B-T Model 31-EX-200—200–240 volt. Net Each..... **$31.50**

J-B-T Model 31-ES—(Square case 3″ x 3″) 110–125 volts. Net Each..... **$23.75**

J-B-T Model 31-EHXX—Same as Model 31-EX, but ruggedized and sealed case. Has glass-to-metal sealed construction with flat front and 3½″ dia. separable flange. Heavy-duty solder terminals. Vacuum chamber checked. Max. 1000 V rms between terminals and case. Barrel dia. 2¹¹⁄₁₆″ to fit 2¾″ panel hole with 2⅛″ depth behind panel. Three flange holes take 6-32 screws on 1.58″ radius. Net Each..... **$30.00**


31-EGW-5

400-Hz SEALED, ELAPSED TIME METER MODEL 33-EHXX

Stable 400-Hz elapsed time meter in 3½″ flanged case. Fully enclosed design has sealed, glass-to-metal construction with flat glass front. Reads 0–9,999.9 hours in 1/10th-hour steps; 110–125 volts, 400 Hz. Case slightly larger than 31-EHXX. **$112.25**

J-B-T Model 33-EHXX—Net Each.....

WIDE NUMERAL, ELAPSED TIME METER MODELS 31-EXW AND 31-EXW-5

Combines basic Model 31-EX (see above) with easily-read, wide 6-digit face design. Distinctive, contemporary dial shows tenths in red on white; units in white on black. Six digits read 0–99,999.9 hours, then automatically resets; 110–125 volts, 60-Hz operation. Black, molded 3½″ case interchangeable with FX Series meters. **$23.25**

J-B-T Model 31-EXW—Net Each.....

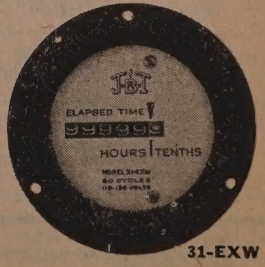
J-B-T Model 31-EXW-5—New model interchangeable electrically and mechanically with 31-EX and 31-EXW. Five wide digits, registers 0–9,999.9 and automatically resets. For 60 Hz, 110–125 volts. Net Each..... **$21.75**

400-Hz BROAD AND VERNIER INDICATOR 41-FX-42 (NOT ILLUS.)

Widely used in commercial and military testing, this combination unit provides two windows: Broad 300–500 Hz, 21 reeds in 10-Hz steps; and, for a vernier effect, 380–420 Hz with 21 reeds in 2-Hz steps. Back molded case has flush front; 4¾₆₄″ w. x 4¾₆₄″ h. x 2¹⁷⁄₃₂″ depth behind panel, over studs. **$163.50**

J-B-T Model 41-FX-42—Standard model for 100–130 volts. Net Each.....

J-B-T Model 41-FX-42—Special, with 4 studs for 200–240 (7.7 watts), 115 (4.5 watts) and 30 volts (2 watts). Net Each..... **$183.75**


31-EXW

LFE CORPORATION

api SERIES 7000 PANEL METERS
api SERIES 7000 PYROMETERS

PANEL METER RANGES	MODEL 7025 2½"		MODEL 7035 3½"		MODEL 7045 4½"		MODEL 7055 5½"	
	Part Number	Price*	Part Number	Price*	Part Number	Price*	Part Number	Price*
DC microamperes								
0-10 TB	7025-0402-0000	$41.50	7035-0402-0000	$43.00	7045-0402-0000	$44.50	7055-0402-0000	$46.00
0-20 TB	7025-0802-0000	34.00	7035-0802-0000	35.50	7045-0802-0000	37.00	7055-0802-0000	38.50
25-0-25 TB	7025-1802-0100	28.50	7035-1802-0100	30.00	7045-1802-0100	31.50	7055-1802-0100	33.00
0-50 TB	7025-1802-0000	28.00	7035-1802-0000	29.50	7045-1802-0000	31.00	7055-1802-0000	32.50
50-0-50 TB	7025-3602-0100	25.00	7035-3602-0100	26.50	7045-3602-0100	28.00	7055-3602-0100	29.50
0-100 TB	7025-3602-0000	24.50	7035-3602-0000	26.00	7045-3602-0000	27.50	7055-3602-0000	29.00
100-0-100 TB	7025-4702-0100	23.00	7035-4702-0100	24.50	7045-4702-0100	26.00	7055-4702-0100	27.50
0-200 TB	7025-4702-0000	22.50	7035-4702-0000	24.00	7045-4702-0000	25.50	7055-4702-0000	27.00
0-500 PJ	7025-5902-0000	20.00	7035-5902-0000	21.50	7045-5902-0000	23.00	7055-5902-0000	24.50
500-0-500 PJ	7025-0003-0100	20.50	7035-0003-0100	22.00	7045-0003-0100	23.50	7055-0003-0100	25.00
DC milliamperes								
0-1 PJ	7025-0003-0000	$20.00	7035-0003-0000	$21.50	7045-0003-0000	$23.00	7055-0003-0000	$25.00
0-5 PJ	7025-1803-0000	20.00	7035-1803-0000	21.50	7045-1803-0000	23.00	7055-1803-0000	25.00
0-10 PJ	7025-3303-0000	20.00	7035-3303-0000	21.50	7045-3303-0000	23.00	7055-3303-0000	25.00
0-25 PJ	7025-4703-0000	20.00	7035-4703-0000	21.50	7045-4703-0000	23.00	7055-4703-0000	25.00
0-50 PJ	7025-5603-0000	20.00	7035-5603-0000	21.50	7045-5603-0000	23.00	7055-5603-0000	25.00
0-100 PJ	7025-6903-0000	22.50	7035-6903-0000	24.00	7045-6903-0000	25.50	7055-6903-0000	27.00
0-500 PJ	7025-8803-0000	22.50	7035-8803-0000	24.00	7045-8803-0000	25.50	7055-8803-0000	27.00
DC amperes								
0-1 PJ	7025-0004-0000	$24.50	7035-0004-0000	$26.00	7045-0004-0000	$27.50	7055-0004-0000	$29.00
0-3 PJ	7025-0804-0000	24.50	7035-0804-0000	26.00	7045-0804-0000	27.50	7055-0804-0000	29.00
0-5 PJ	7025-1104-0000	24.50	7035-1104-0000	26.00	7045-1104-0000	27.50	7055-1104-0000	29.00
0-10 PJ	7025-1704-0000	24.50	7035-1704-0000	26.00	7045-1704-0000	27.50	7055-1704-0000	29.00
0-15 PJ	7025-1904-0000	24.50	7035-1904-0000	26.00	7045-1904-0000	27.50	7055-1904-0000	29.00
0-25 PJ	7025-2204-0000	24.50	7035-2204-0000	26.00	7045-2204-0000	27.50	7055-2204-0000	29.00
DC millivolts								
0-10 TB	7025-0400-0000	$33.00	7035-0400-0000	$34.50	7045-0400-0000	$36.00	7055-0400-0000	$37.50
0-50 PJ	7025-1800-0000	22.50	7035-1800-0000	24.00	7045-1800-0000	25.50	7055-1800-0000	27.00
0-100 PJ	7025-3600-0000	22.50	7035-3600-0000	24.00	7045-3600-0000	25.50	7055-3600-0000	27.00
50-0-50 PJ	7025-3600-0100	23.00	7035-3600-0100	24.50	7045-3600-0100	26.00	7055-3600-0100	27.50
100-0-100 PJ	7025-4700-0100	23.00	7035-4700-0100	24.50	7045-4700-0100	26.00	7055-4700-0100	27.50
DC volts								
0-5 PJ	7025-1601-0000	$22.50	7035-1601-0000	$24.00	7045-1601-0000	$25.50	7055-1601-0000	$27.00
0-10 PJ	7025-3001-0000	22.50	7035-3001-0000	24.00	7045-3001-0000	25.50	7055-3001-0000	27.00
0-15 PJ	7025-3601-0000	22.50	7035-3601-0000	24.00	7045-3601-0000	25.50	7055-3601-0000	27.00
0-30 PJ	7025-5101-0000	22.50	7035-5101-0000	24.00	7045-5101-0000	25.50	7055-5101-0000	27.00
0-50 PJ	7025-5601-0000	22.50	7035-5601-0000	24.00	7045-5601-0000	25.50	7055-5601-0000	27.00
0-150 PJ	7025-7401-0000	22.50	7035-7401-0000	24.00	7045-7401-0000	25.50	7055-7401-0000	27.00
0-300 PJ	7025-8401-0000	22.50	7035-8401-0000	24.00	7045-8401-0000	25.50	7055-8401-0000	27.00
0-500 PJ	7025-8801-0000	22.50	7035-8801-0000	24.00	7045-8801-0000	25.50	7055-8801-0000	27.00
AC volts (rectifier type)								
0-10 PJ	7025-3006-0000	$27.50	7035-3006-0000	$29.00	7045-3006-0000	$31.50	7055-3006-0000	$33.00
0-15 PJ	7025-3606-0000	27.50	7035-3606-0000	29.00	7045-3606-0000	31.50	7055-3606-0000	33.00
0-150 PJ	7025-7406-0000	27.50	7035-7406-0000	29.00	7045-7406-0000	31.50	7055-7406-0000	33.00
0-300 PJ	7025-8406-0000	27.50	7035-8406-0000	29.00	7045-8406-0000	31.50	7055-8406-0000	33.00
AC milliamperes (rectifier type)								
0-1 PJ	7025-0008-0000	$25.00	7035-0008-0000	$26.50	7045-0008-0000	$28.00	7055-0008-0000	$29.50
0-47** PJ	7025-5428-0000	25.00	7035-5428-0000	26.50	7045-5428-0000	28.00	7055-5428-0000	29.50

PYROMETER RANGES				MODEL 7035		MODEL 7045		MODEL 7055	
°F	°C	T/C		Part Number	Price*	Part Number	Price*	Part Number	Price*
−150 to + 250	−100 to + 120	T	TB	7035-6424-0000	$41.50	7045-6424-0000	$42.50	7055-6434-0000	$55.50
−75 to + 225	−60 to + 110	J	TB	7035-5304-0000	41.50	7045-5304-0000	42.50	7055-5324-0000	55.50
0 to + 300	0 to + 150	J	TB	7035-6004-0000	41.50	7045-6004-0000	42.50	7055-6024-0000	55.50
0 to + 500	0 to + 260	J	TB	7035-6604-0000	41.50	7045-6604-0000	42.50	7055-6624-0000	55.50
0 to + 800	0 to + 430	J	TB	7035-7804-0000	41.50	7045-7804-0000	42.50	7055-7824-0000	55.50
0 to +1000	0 to + 500	J	TB	7035-8204-0000	41.50	7045-8204-0000	42.50	7055-8224-0000	55.50
0 to +1500	0 to + 800	K	TB	7035-8504-0000	39.50	7045-8504-0000	40.50	7055-8524-0000	53.50
0 to +2000	0 to +1100	K	TB	7035-8904-0000	39.50	7045-8904-0000	40.50	7055-8924-0000	53.50
0 to +2500	0 to +1370	K	TB	7035-9304-0000	39.50	7045-9304-0000	40.50	7055-9324-0000	53.50

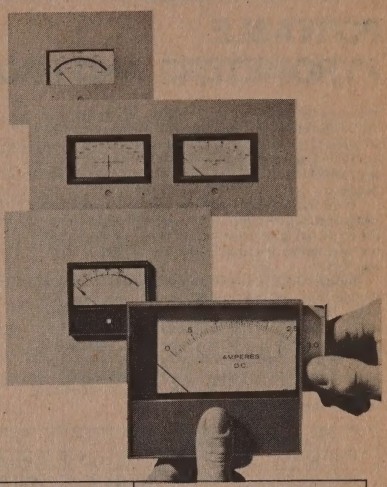
TB Taut-band movement is standard
PJ Pivot-and-jewel movement is standard
** Scale 0-150% load

*The prices listed above are net each for lots of 1-9. Deduct 10% for lots of 10-24.

LFE CORPORATION

api SERIES 7000 PANEL METERS
api VU METERS

SERIES 7000 PANEL METERS



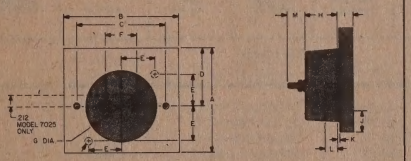
Series 7000 brings you all that's new in analog panel meters—distinctive style and functional flexibility that offer this exclusive combination of advantages:

- **Three-way choice of mounting—front mount, bezel mount, lens mount.**
- **Phenolic fronts and cases—rugged and reliable.**
- **Glass windows—scratch-proof, free of static electricity.**
- **Front decorator plates—flat black, two shades of grey, tan, and olive.**
- **Insertable scales—field changeable, reduce inventory, eliminate damage.**
- **Taut band movement and 1% tracking—standard in the most popular DC ranges.**
- **Self shielding—for mounting on either magnetic or non-magnetic panels.**

Series 7000 panel meters are available in four sizes: Model 7025 (2½"), Model 7035 (3½"), Model 7045 (4½"), and Model 7055 (5½").

SERIES 7000 ACCESSORIES	MODEL 7025		MODEL 7035		MODEL 7045		MODEL 7055	
	Part Number	Price*	Part Number	Price*	Part Number	Price*	Part Number	Price*
BEZEL KIT	1125-242	$2.50	1125-226	$2.50	1125-223	$2.75	1125-229	$3.00
PANEL LENS KIT	1125-241	1.35	1125-225	1.35	1125-222	1.35	1125-228	1.35
COLOR PLATES								
tan	1646-361	.65	1646-311	.65	1646-295	.65	1646-306	.65
olive	1646-362	.65	1646-312	.65	1646-296	.65	1646-307	.65
dark grey	1646-363	.65	1646-313	.65	1646-297	.65	1646-308	.65
light grey	1646-364	.65	1646-314	.65	1646-298	.65	1646-309	.65
flat black	1646-365	.65	1646-315	.65	1646-299	.65	1646-310	.65

Series 7000 Dimensions



MODEL	A	B	C	D	E	F	G
7025	2.41	2.81	—	1.18	0.94	1.25	2.20
7035	3.01	3.51	—	1.53	1.125	1.25	2.79
7045	4.05	4.61	3.50	2.29	—	1.25	2.79
7055	4.53	5.66	4.50	2.695	—	1.25	2.79

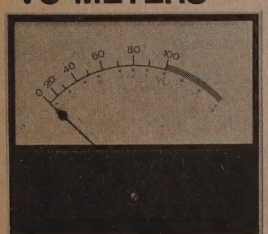
MODEL	H	I	J	K	L	M
7025	1.39	.56	.43	.02	.56	.675
7035	1.37	.58	.53	.02	.56	.675
7045	1.37	.58	.77	.02	.56	.675
7055	1.37	.58	.845	.02	.56	.675

Series 7000 Specifications		DC RANGES		AC RANGES (rectifier type)	
		Current	Voltage	Current	Voltage
Accuracy		±2%	±2%	±3%	±3%
Tracking	Pivot-and-jewel mechanism	2%	2%	3%	3%
	taut-band mechanism ⩾20 μa ⩾10mv	1%	1%	3%	3%
Overload Capacity	1 second	1000%	⩽100v 1000% >100v 200%	150%	150%
	continuous	150%	120%	150%	120%
Overshoot (maximum)		20%	20%	20%	20%
Response Time (maximum)	sensitivity ⩾50 μa	1.5 sec	1.5 sec	1.5 sec	1.5 sec
	sensitivity <50 μa	3 sec	3 sec	3 sec	3 sec

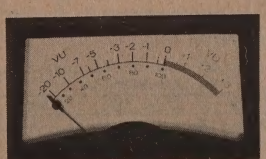
Effects of shock, vibration, humidity, and temperature are equal to or better than ANSI C39.1-1972

Safety (dielectric test, leakage, and other hazards): instruments are equal to or better than ANSI C39.5-1974

VU METERS



Series 7000 Meter
Shown with Type B scale;
A scale also available.



Model 561(5") Model 361(3½")
Shown with Type A scale;
B scale also available.

API VU meters offer the industry's most advanced styling while conforming to all specifications of ANSI Standard C16.5-1954 entitled "American Recommended Practice for Volume Measurements of Electrical Speech and Program Waves."

All models are available with either Type A scale for recording applications, or Type B which emphasizes per cent modulation for broadcast use. The meter reading is zero VU, or 100%, with application of 1.228 volts across a 3600 ohm resistor in series with the VU meter. This reading represents 4 db above 1 milliwatt into 600 ohms.

MODEL NUMBER	Part Number		Price*
	A Scale	B Scale	
7025	7025-0226-0050	7025-0236-0050	$42.50
7035	7035-0226-0050	7035-0236-0050	42.50
7045	7045-0226-0050	7045-0236-0050	42.50
561	56-0266-0050	56-0236-0050	47.50
361	36-0236-0050	36-0246-0050	46.00
426	43-0226-0050	43-0236-0050	46.50

*The prices listed above are net each for lots of 1-9. Deduct 10% for lots of 10-24.

LFE CORPORATION

api PORTABLE PYROMETERS AND PROBES
api ELECTRONIC PANEL METER

PORTABLE PYROMETERS AND PROBES

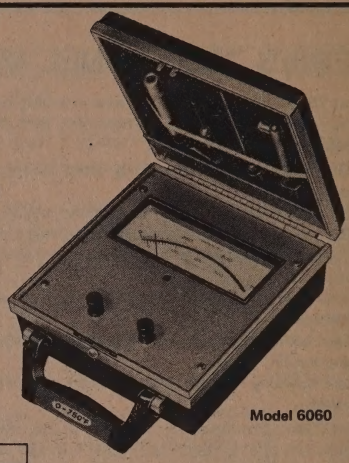
New portable pyrometer Models 3030 and 6020 feature standard API taut-band, 1% accurate meters in rugged, attractively styled cases. These self-contained, thermocouple actuated units allow quick spot checking of temperature. No power supply is needed.

Both models have bimetal and thermistor compensation for ambient temperature changes. Meters are mirrored and protected by glass windows. Cases are aluminum trimmed ABS plastic, gray, with a hair finish.

Model 3030 weighs approximately 1 pound. Dimensions are 5.5" wide by 2.3" high by 5.8" long. The instrument is calibrated for 3.85 ohms external thermocouple resistance.

Model 6020 is 7.5" wide by 3.4" high by 8.2" long, weighing approximately 3 pounds. Calibration is for 3.85 ohms in type E thermocouple ranges, 10 ohms in types K and R with external adjustable resistor strip.

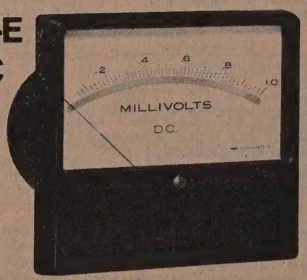
Model 3030


Model 6060

Temperature Range °F	Temperature Range °C	T/C	Model 6020 Part Number	Model 6020 Price*	Model 3030 Part Number	Model 3030 Price*
−200 to + 100	−130 to + 40	E	6020-5004-0000	$99.00	3030-5004-0000	$89.00
− 75 to + 225	− 60 to +110	E	6020-5404-0000	99.00	3030-5404-0000	89.00
0 to 300	0 to 150	E	6020-6104-0000	99.00	3030-6104-0000	89.00
0 to 500	0 to 260	E	6020-6704-0000	99.00	3030-6704-0000	89.00
−100 to + 600	− 70 to +310	E	6020-7224-0000	99.00	3030-7224-0000	89.00
0 to 800	0 to 430	E	6020-8004-0000	99.00	3030-8004-0000	89.00
−100 to +1100	− 70 to +550	E	6020-8334-0000	99.00	3030-8334-0000	89.00
0 to 1500	0 to 800	E	6020-8604-0000	99.00	3030-8604-0000	89.00

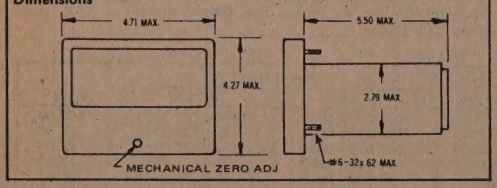
THERMOCOUPLE PROBES (type E) Description	Part Number	Price*
Beaded wire	2057-11	$14.00
Roller surface	2057-10	49.00
Straight surface	2057-7	49.00
Right-angle surface	2057-8	55.00
Needle	2057-9	49.00
General purpose	2057-6	49.00
Extension handle	1260-20	15.00

MODEL 503-E ELECTRONIC METER PANEL



- ± 1% accuracy full scale
- Current meter sensitivity — 10 millivolt drop
- Fast response — 1 second full scale
- Rugged — high torque 1 mA meter

Dimensions



DC Ranges	Impedance (ohms)	Part Number	Price*
millivolts			
0-1**	1000	53-9600-0800	$121.00
0-5	5000	53-0000-0800	121.00
0-10	10,000	53-0400-0800	121.00
0-50	50,000	53-1800-0800	121.00
microamperes			
0-1	10,000	53-9602-0800	121.00
0-5	2000	53-0002-0800	121.00
0-10	1000	53-0402-0800	121.00
5-0-5	1000	53-0422-0800	136.00
0-50	200	53-1802-0800	121.00
0-100	100	53-3602-0800	121.00
50-0-50	100	53-3622-0800	136.00
milliamperes			
0-1	10	53-0003-0800	121.00

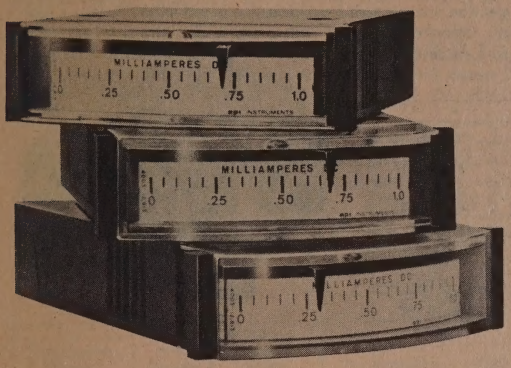
** accuracy ± 2%

Temperature Ranges °F	Temperature Ranges °C	T/C	Part Number	Price*
−25 to +125	−30 to + 50	J	53-6344-0800	$147.00
0 to +150	−20 to + 66	J	53-6304-0800	147.00
0 to +300	−15 to +150	J	53-6904-0800	147.00
0 to +500	0 to +260	J	53-7604-0800	147.00

*The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.

LFE CORPORATION

api SERIES 1000
EDGEWISE PANEL METERS



- **Stackable**
- **1½", 2½", and 3½" sizes**
- **No-fuss mounting**
- **Easy dial changing**
- **18 stock ranges**
- **Tough, high temperature polycarbonate case**
- **Resists shock and vibration**

This new API Series 1000 line of edgewise panel meters has been designed to satisfy the increasing demand for attractive and accurate analog display in a minimum of panel space. Because they're new, these edgewise meters provide a number of user benefits available nowhere else.

A novel case design permits snap-together access to the dial and mechanism for convenient dial changing. The case itself—clear front window and black base—is molded from high-impact polycarbonate for immunity from shock, chemicals and flame.

The unique flat d'Arsonval mechanism with pivot-and-jewel suspension provides 2% accuracy for either vertical or horizontal scale orientations. Unsurpassed stability makes a front zero adjust unnecessary, freeing the dial area for maximum visibility.

Panel mounting has been simplified to the ultimate in the Series 1000. Two mounting clips are attached without screws to the meter case after it has been inserted through its cutout; then the clips are tightened against the panel. Total time: less than half a minute!

DC RANGE	Resistance ± 20%	Model 1015 1½"		Model 1025 2½"		Model 1035 3½"	
		Part Number	Price*	Part Number	Price*	Part Number	Price*
microamperes							
0-50	1000 Ω	1015-1802-0000	$25.00	1025-1802-0000	$28.00	1035-1802-0000	$31.00
50-0-50	1000 Ω	1015-3602-0100	22.00	1025-3602-0100	25.00	1035-3602-0100	28.00
0-100	1000 Ω	1015-3602-0000	22.00	1025-3602-0000	25.00	1035-3602-0000	28.00
100-0-100	680 Ω	1015-4702-0100	21.50	1025-4702-0100	24.50	1035-4702-0100	27.50
0-200	680 Ω	1015-4702-0000	21.00	1025-4702-0000	24.00	1035-4702-0000	27.00
250-0-250	127 Ω	1015-5902-0100	21.00	1025-5902-0100	24.00	1035-5902-0100	27.00
0-500	127 Ω	1015-5902-0000	20.50	1025-5902-0000	23.50	1035-5902-0000	26.50
500-0-500	32 Ω	1015-0003-0100	20.50	1025-0003-0100	23.50	1035-0003-0100	26.50
milliamperes							
0-1	32 Ω	1015-0003-0000	20.00	1025-0003-0000	23.00	1035-0003-0000	26.00
1-0-1	10 Ω	1015-1003-0100	20.50	1025-1003-0100	23.50	1035-1003-0100	26.50
0-2	10 Ω	1015-1003-0000	20.00	1025-1003-0000	23.00	1035-1003-0000	26.00
process control**							
4-20 mA	2.4 Ω	1015-4033-0400	25.00	1025-4033-0400	28.75	1035-4033-0400	32.50
1-5 v	1000 Ω/v	1015-1231-0400	28.75	1025-1231-0400	32.50	1035-1231-0400	36.25
millivolts							
0-50	12.5 Ω	1015-1800-0000	23.00	1025-1800-0000	26.00	1035-1800-0000	29.00
volts							
0-10	1000 Ω/v	1015-3001-0000	23.00	1025-3001-0000	26.00	1035-3001-0000	29.00
0-50	1000 Ω/v	1015-5601-0000	23.00	1025-5601-0000	26.00	1035-5601-0000	29.00
0-100	1000 Ω/v	1015-6901-0000	23.00	1025-6901-0000	26.00	1035-6901-0000	29.00
0-150	1000 Ω/v	1015-7401-0000	23.00	1025-7401-0000	26.00	1035-7401-0000	29.00

**Scale 0-100%

The above part numbers are for horizontally mounted scales. For vertical scales change the last two digits of the part number from 00 to 50. The price does not change.

MODEL 1015

MODEL 1015 features one-piece dial, rear zero adjust, red dragon-tooth pointer, solder terminals and clip-on mounting. Comes complete with mounting hardware and bezel. Panel cutout .500" x 1.650". Meter depth 2.115 inches from front of panel.

MODEL 1025

MODEL 1025 has identical features to 1015 but in a larger size for added visibility and resolution. Bright, uniform one-lamp illumination available; specify 6V or 12V, add $5.00 to the above prices. Comes complete with mounting hardware and bezel. Panel cutout .680" x 2.56". Meter depth 3.170 inches from front of panel.

MODEL 1035

MODEL 1035 features stepped (anti-parallax) dial, front zero adjust, red dragon-tooth pointer and clip-on mounting. Comes complete with mounting hardware and bezel. Rear zero adjust available. Bright uniform one-lamp illumination available; specify 6V or 12V, add $5.00 to the above prices. Panel cutout .680" x 3.30". Meter depth 3.225 inches from front of panel.

***The prices listed above are net each for lots of 1-9. Deduct 10% for lots of 10-24.**

LFE CORPORATION

SERIES 4350 DIGITAL PANEL METERS

- ½" planar 7-segment display
- MOS-LSI technology
- Switchboard reliability
- mV, μA, mA and Ω
- Rugged polycarbonate case

Series 4350 is the designer's choice for style, reliability and economy. The crisp, green 7-segment display provides unmatched readability and eye ease, as well as 100,000 hours **proven** lifetime. Very high input and line noise rejection provide stable performance in industrial locations near contactors, motors, spark gaps, etc. Conservative specifications and a wide choice of standard ranges makes the Series 4350 a sure success in new applications. All logic inputs and outputs are TTL/DTL compatible. Size 4" wide x 2 1/8" high; depth given in table below.

SPECIFICATIONS				
MODEL NUMBER	4360	4354	4352	4359
Number of digits	2½	2¾	3½	4½
Readout range	0-199	0-499	±1999	±19999
Accuracy R = reading FS = full scale	0.5% R ±0.5% FS	0.2% R ±0.2% FS	0.1% R ±0.1% FS	0.01% R ±0.02% FS
Reading rate (readings per second)	5	5	5	5
Noise rejection				
common mode dB	90-110	90-110	>120	110
normal mode dB	32-45	30	30	30
Temperature stability	.08% R/°C	.04% R/°C	.008% FS/°C	(.003% R ± .02% FS)/°C
Panel depth	4.25"	4.25"	4.25"	6.20"
Input bias current				
Typical mA	80	70	1	3
Worst Case mA	500	250	5	8
Display hold input	STD.	STD.	STD.	STD.
Convert command in	STD.	OPT.	STD.	STD.
Parallel BCD output	OPT.	OPT.	OPT.	STD.
Movable decimal point	OPT.	OPT.	OPT.	OPT.
Print command out	STD.	STD.	STD.	STD.
DC output @ 5 mA	+5, ±12	+5	+5, ±12	–
Operating temp. °C	0-55	0-50	0-55	0-50
Power, 50-60 Hz AC volts ±10%	115 5 W	115 10 W	115 10 W	115 10 W

Model 4350

Model 4354

Model 4352

Model 4359

HOW TO ORDER

Assemble a 12 digit part number. The first four digits are the model number. The next four digits identify the range and are listed below. The last four numbers are -0000 except for ohm ranges where it is -0040 and except for BCD output options listed below. For example a model 4354 DPM with range of 0 to 500 Ω with BCD output is ordered by part number 4354-6004-0240. Accessories are ordered with the part numbers listed below.

MODEL NUMBER			4350	4352	4354	4359
DC RANGE	Part Number	Input Impedance	Price*	Price*	Price*	Price*
millivolts						
0-20	-0800-	100 MegΩ	–	–	$195.00	–
0-50	-1800-	100 MegΩ	–	$190.00	–	–
0-200	-4700-	100 MegΩ	$140.00	–	195.00	$350.00
0-500	-5900-	100 MegΩ	–	165.00	–	–
volts						
0-2	-0401-	100 MegΩ	140.00	–	195.00	325.00
0-5	-1601-	100 MegΩ	–	165.00	–	–
0-20	-4301-	1 MegΩ	140.00	–	195.00	350.00
0-50	-5601-	1 MegΩ	–	165.00	–	–
0-200	-7701-	10 MegΩ	140.00	–	195.00	–
0-500	-8801-	10 MegΩ	–	165.00	–	–
microamperes						
0-20	-0802-	10 KΩ	140.00	–	195.00	–
0-50	-1802-	10 KΩ	–	165.00	–	–
0-200	-4702-	1 KΩ	140.00	–	195.00	–
0-500	-5902-	1 KΩ	–	165.00	–	–
milliamperes						
0-2	-1003-	100 Ω	140.00	–	195.00	–
0-5	-1803-	100 Ω	–	165.00	–	–
0-20	-4303-	10 Ω	140.00	–	195.00	–
0-50	-5603-	10 Ω	–	165.00	–	–
0-200	-7703-	1 Ω	140.00	–	195.00	–
0-500	-8803-	1 Ω	–	165.00	–	–
ohms						
0-500 Ω	-6004-	1 mA	–	190.00	–	–
0-5 KΩ	-6504-	1 mA	–	190.00	–	–
0-50 KΩ	-7504-	100 μA	–	190.00	–	–
0-500 KΩ	-8504-	10 μA	–	190.00	–	–
BCD OUTPUT OPTIONS						
Ω ranges	-0240		–	+10.00	–	–
other ranges	-0200		+10.00	+10.00	+10.00	STD.
ACCESSORIES		Price*	Part Number	Part Number	Part Number	Part Number
input connector		3.50	1125-243	1125-252	1125-252	1125-281
power connector		3.50	–	1125-253	1125-253	–
BCD connector		3.50	–	–	–	1125-280

NOTE: exact specifications may vary slightly from range to range.

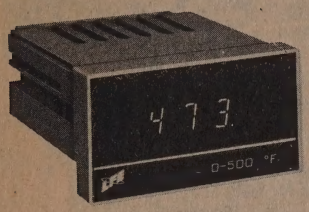
*The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.

LFE CORPORATION

MODEL 4354 DIGITAL TEMPERATURE INDICATOR

MODEL 4355 DUAL CONTROL COMPARATOR

MODEL 4354 DIGITAL TEMPERATURE INDICATOR



The new LFE Model 4354 Digital Temperature Indicator provides low-cost digital display for RTD (resistance temperature detector) probes. The 4354 provides precise, easily read temperature measurements for ovens, laboratories, furnaces, processes, analytical instruments, environmental chambers, etc. The clean modern styling fits right in with today's panel designs. With digital precision, the full capabilities for high accuracy and repeatability offered by RTD probes can be realized. The 4354 is designed to be used with LFE's type 1 (100 ohm at 0°C, 3850 PPM) platinum RTD probe for temperature measurements in the ranges −80/+299 or 0/+499 in °F or °C. A standard feature of the 4354 when temperature measurements exceed 299 or 499 is for the display to flash at the reading rate, to provide an eye-catching over-range indication.

MOS/LSI circuitry in this low-cost instrument, combined with a unique feedback circuit, provides high-accuracy, single slope, analog-to-digital conversion technique commonly found on expensive laboratory instruments. Rugged, low voltage, low power electrofluorescent tubes provide a ½" high planar 7-segment display of remarkable clarity and brightness. Widely specified for dependability in calculating equipment, these lamps are rated for 100,000 hour life, even at high ambient temperatures. A standard green window provides a pleasing display which is matched to peak visual sensitivity and best focus of the human eye.

Standard features include negative polarity indication, display hold, print command, and over-range. Low cost options include stored BCD outputs. All inputs are DTL/TTL compatible.

Temperature Range	Probe Current	Maximum Input Voltage	Part Number	Price*
0 to +499°F	1 mA	±10V	4354-6604-0020	$195.00
0 to +499°C	1 mA	±10V	4354-8004-0030	195.00
−80 to +299°F	1 mA	±10V	4354-6904-0020	195.00
−80 to +299°C	1 mA	±10V	4354-6904-0030	195.00

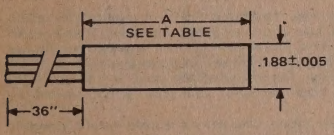
OPTION

BCD output (change last four digits of part number from 0020 and 0030 to 0220 and 0230) . . . . . add $10.00*

ACCESSORIES

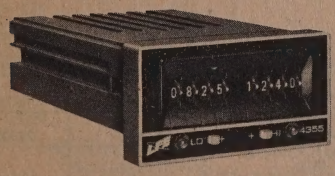
Input signal connector part no. 1125-252 . . . 3.50
Power input and BCD output connector part no. 1125-253 . . . 3.50

RTD SENSORS USED WITH MODEL 4354
Type 1, 100 ohm platinum probe, 3850 PPM.



PART NUMBERS AND PRICES							
"A" Dim. in inches	2	4	6	8	10	12	Price*
500°F Maximum RTD Probe	1680-64	1680-65	1680-66	1680-67	1680-68	1680-69	$35.00
1000°F Maximum RTD Probe	—	1680-70	1680-71	1680-72	1680-73	1680-74	$50.00

MODEL 4355 DUAL CONTROL COMPARATOR



The LFE Model 4355 Dual Control Comparator adds limit-set, GO / NO-GO, or ON/OFF control capability to any measuring device with TTL-compatible BCD output: digital panel meters, digital voltmeters, up/down counters, scalers, digital temperature indicators, and other process digitizers. Although the Model 4355 has been designed to complement the appearance and function of the LFE 4350 Series digital panel meters, it will work equally well with all types of DPM's with the same standard BCD output capability.

The Model 4355 makes two simultaneous thumbwheel-input comparisons with one 4-digit (or 3½-digit) input word, triggered by the trailing edge of a logic 1 pulse. Algebraic sign of each setpoint is independently selected with two front-panel switches.

The HIGH setpoint LED indicator and relay are switched when the BCD input is equal to, or greater than, the HIGH thumbwheel setting. The LOW setpoint LED indicator and relay are switched when the BCD input is equal to, or less than, the LOW thumbwheel setting.

One form C (DPDT) reed relay output for each setpoint is available for maximum circuit isolation and wiring flexibility. A TTL-compatible logic output for each setpoint also signals comparison status.

One LFE Model 4352 DPM (3½-digits) will drive one or two 4355 Dual Control Comparators, providing four setpoints or three zones for batch control. A standard 24" cable is available to interface one 4352 DPM with one 4355 Comparator.

Input	Supply Voltage	Part Number	Price*
Dual ±9999 thumbwheel setpoints	+5 VDC	4355-2300-1200	$175.00
Dual ±9999 thumbwheel setpoints	115 VAC	4355-2302-1200	195.00
Dual ±9999 hardwired setpoints	+5 VDC	4355-2300-0001	125.00

CONNECTORS

Input and +5 VDC Connector (required for all models)
P/N 1125-272 . . . . . $ 3.50
AC power connector (required only for 115/230 VAC models)
P/N 1125-273 . . . . . 3.50
Interface Cable: 24" long, with connectors to mate one API 4352 DPM with one API 4355 Dual Digital Comparator,
P/N 1125-276 . . . . . 25.00

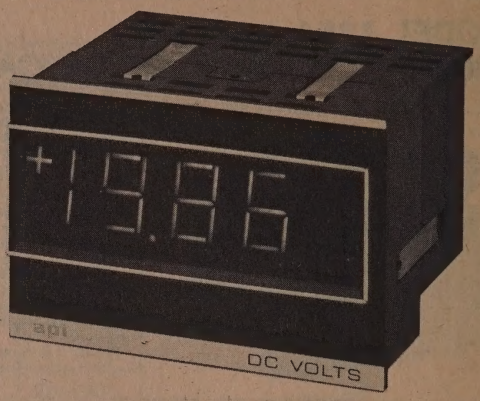
***The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.**

LFE CORPORATION

MODEL 4304 DIGITAL PANEL METER
MODEL 4310 DIGITAL COMPARATOR

MODEL 4304 DIGITAL PANEL METER

- Best readability among DPM's
- 7/8" seven-bar planar display
- High noise rejection
- BCD output standard DTL/TTL compatible
- 0.1% accuracy
- Autopolarity
- Print Command
- Display hold
- Programmable decimal points
- 1000 megohms input impedance
- Front or rear panel mounting
- Separable power supply



This new LFE digital panel meter is a precision measuring instrument with 4 digits for a display to 1999. Its unique segmented display, in a small package, offers unmatched clarity.

Analog to digital conversion with a sample and hold input amplifier provide excellent long term stability and high noise rejection for high accuracy measurements at an input impedance of 1000 megohms. Other standard features include a DTL/TTL compatible BCD output, autopolarity, display hold, print command, polarity and overrange outputs, and selectable decimal points.

Model 4304 easily adapts to users' equipment styling through either front or rear panel mounting, with attractive and easy to use hardware. All controls are included in the window area to eliminate unsightly adjustment holes in the panel when mounted from the rear.

Readings exceeding 1999 are indicated by illumination of the overrange lamp. Decimal points can be selected by either an internal or external connection to the common.

LFE digital panel meters provide maximum benefits in applications requiring repeatable accuracy, high resolution, extended operating temperatures, and fast response time. In addition, Model 4304 offers a large upfront display. Individual requirements can be satisfied by special ranging and zero offset. The 4304 is 4½" wide x 3" high. Depth behind the panel is 4.4" or 2 3/8" with the power supply separated. An input connector is not needed for operation, unless desired.

Mounting holes in the power supply case permit remote installation up to 24" from the display with accessory interconnecting cables. A connector, required for the BCD and decimal outputs, can be attached to the case and is listed under accessories.

STANDARD VOLTAGE RANGES

Part Number	DC Voltage	Input Impedance	Max. Voltage	Price*
4304-4700-0200	0-199.9 mV	100 M	250 V	$275.00
4304-0401-0200	0-1.999 V	1000 M	250 V	275.00
4304-4301-0200	0-19.99 V	10 M	1000 V	275.00
4304-7701-0200	0-199.9 V	10 M	1000 V	275.00
4304-0800-0200	0-19.99 mV	100 M	250 V	295.00

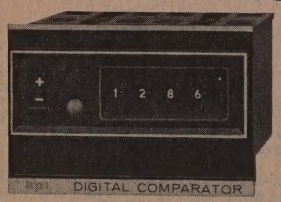
STANDARD CURRENT RANGES

Part Number	DC Current	Shunt Impedance	Max. Current	Price*
4304-0802-0200	0-19.99 μA	10K Ohms	10 mA	$275.00
4304-4702-0200	0-199.9 μA	1K Ohms	10 mA	275.00
4304-1003-0200	0-1.999 mA	100 Ohms	100 mA	275.00
4304-4303-0200	0-19.99 mA	10 Ohms	100 mA	275.00
4304-7703-0200	0-199.9 mA	1 Ohm	1 A	275.00

ACCESSORIES

Description	Part Number	Price*
Interconnecting cable (power supply to display) – 12" long	1126-278	$9.50
– 24" long	1126-279	9.50
Input connector	1125-244	3.50
BCD connector	1125-246	3.50
Bezel trim (rear panel mounting only)	1125-208	1.60

MODEL 4310 DIGITAL COMPARATOR



LFE Model 4310 Digital Comparator is a compact, panel-mounted instrument that compares BCD input data to a preselected limit, providing On/Off control.

The instrument algebraically compares both the sign and the BCD data of the input signal. A polarity switch permits selection of the sign, either plus or minus, of the limit point. Limit action occurs when the input data reaches the limit point of the preset sign. Example: With a limit point of –.500, output conditions do not change until the input rises from a more negative value in a positive direction to –.500.

Model 4310 compares on command. Comparison to input data is made but not transferred to the output until a compare command pulse is received. Comparison outputs include 2 ampere relay contact closure, a logic level change, and lamps for above and below limit point indication.

LFE offers a series of comparators which provide a choice of limit selection method and number of digits. Adjustable limits are set with thumbwheel switches on 3½-digit and 4-digit models. For applications requiring programmable limits by remote sources, or where fixed limits are adequate, 3½-digit and 4-digit models are provided without control switches and indicators. A printed circuit connector is all that is required for hard wiring of fixed limits or making remote connections.

Part Number	Single Limit Comparator Description	Range	Input Data	Price*
4310-1020-0000	Adjustable limit (high limit)	±0-1999	3 digits, overrange, polarity	$195.00
4310-1120-0000	Fixed or external limit (high limit)	±0-1999	3 digits, overrange, polarity	125.00
4310-2020-0000	Adjustable limit (high limit)	±0-9999	4 digits, overrange, polarity	231.00
4310-2120-0000	Fixed or external limit (high limit)	±0-9999	4 digits, overrange, polarity	145.00

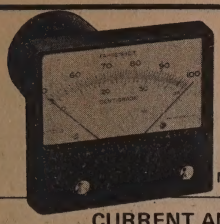
ACCESSORIES

Description	Part Number	Price*
Buffer (use with LFE digital panel meters when two to four comparators are used)	144-93	$35.75
Interconnecting cable, 24" long (logic circuitry to control module)	1126-307	27.00
Interfacing cable, 24" long (LFE model 4304 DPM to LFE model 4310 comparator)	1126-401	19.50
Interfacing cable, 24" long (LFE model 4304 DPM to two LFE model 4310 comparators)	1126-402	32.50
Interfacing cable, 24" long (LFE model 4352 DPM to LFE model 4310 comparator)	1126-488	19.50
Input connector (for connection to other instruments)	1125-248	3.50
BCD output connector (for LFE DPM)	1125-246	3.50
Bezel trim (rear panel mounting only)	1125-208	1.60

*The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.

LFE CORPORATION

api COMPACK METER-RELAY CONTROLLERS



MODEL 503

MODEL 371

COMPACK CONTROLLER MODEL NUMBERS		
Style and Size	Optical	Solid State
3¼" black phenolic panelist	303-K	303-X
4½" black phenolic panelist	503-K	503-X
5½" black phenolic panelist	603-K	603-X
edgewise (horizontal or vertical)	371-K	371-X

CURRENT AND VOLTAGE RANGES		OPTICAL COMPACKS				SOLID STATE COMPACKS			
		Model 303-K	Model 503-K	Model 603-K	Model 371-K	Model 303-X	Model 503-X	Model 603-X	Model 371-X
microamperes DC	microamperes AC								
0 to 5	–	$190.00	$193.00	$197.00	$200.00	$179.00	$182.00	$186.00	$189.00
0 to 10	–	169.50	172.50	176.50	179.50	159.00	162.00	166.00	169.00
0 to 20	–	154.50	157.50	161.50	164.50	159.00	162.00	166.00	169.00
0 to 50	–	147.00	150.00	154.00	157.00	159.00	162.00	166.00	169.00
0 to 100	0 to 100	141.00	144.00	148.00	151.00	159.00	162.00	166.00	169.00
0 to 200	–	136.00	139.00	143.00	146.00	159.00	162.00	166.00	169.00
0 to 500	–	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
5-0-5	–	–	–	–	–	159.00	162.00	166.00	169.00
50-0-50	–	–	–	–	–	159.00	162.00	166.00	169.00
	add $5.00 for AC ranges								
milliamperes DC	milliamperes AC								
0 to 1	0 to 1	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
0 to 5	–	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
0 to 10	–	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
0 to 25	–	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
0 to 50	0 to 47	132.50	135.50	139.50	142.50	159.00	162.00	166.00	169.00
0 to 100	–	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
	add $5.00 for AC ranges								
amperes DC	amperes AC								
0 to 1	0 to 1	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 2	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 5	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 10	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 20	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 30	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 40	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
–	0 to 50	138.00	141.00	145.00	148.00	159.00	162.00	166.00	169.00
	add $15.00 for AC ranges								
millivolts DC	millivolts AC								
0 to 5	–	165.00	168.00	172.00	175.00	172.00	175.00	179.00	182.00
0 to 10	–	146.00	149.00	153.00	156.00	152.50	155.50	159.50	162.50
0 to 50	–	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 100	0 to 100	–	–	–	–	152.50	155.50	159.50	162.50
0 to 250	0 to 250	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
	add $5.00 for AC ranges (X series) add $17.50 for AC ranges (K series, 0-250 mV min)								
volts DC	volts AC								
0 to 1	–	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 5	–	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 10	0 to 10	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 30	–	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 50	0 to 50	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 150	0 to 150	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
0 to 300	–	134.50	137.50	141.50	144.50	152.50	155.50	159.50	162.50
	add $5.00 for AC ranges								

TEMPERATURE RANGES (THERMOCOUPLE)			OPTICAL COMPACK CONTROLLERS ON-OFF CONTROL				SOLID STATE COMPACK CONTROLLERS ON-OFF CONTROL			
°F	°C	T/C	Model 303-K	Model 503-K	Model 603-K	Model 371-K	Model 303-X	Model 503-X	Model 603-X	Model 371-X
0 to 150	–16 to 66	J	–	–	–	–	$181.00	$188.00	$194.00	$217.50
0 to 300	0 to 150	J	$159.50	$168.00	$173.00	$166.00	181.00	188.00	194.00	206.00
0 to 500	0 to 260	J	159.50	165.50	169.00	166.00	175.00	181.00	188.00	199.50
0 to 800	0 to 400	J	159.50	165.50	169.00	164.00	175.00	181.00	188.00	199.50
0 to 1000	0 to 500	J	159.50	165.50	169.00	164.00	175.00	181.00	188.00	199.50
0 to 1500	0 to 800	K	157.50	159.50	165.50	158.50	175.00	181.00	188.00	199.50
0 to 2000	0 to 1100	K	157.50	159.50	165.50	158.50	175.00	181.00	188.00	199.50
0 to 2500	0 to 1370	K	157.50	159.50	165.50	158.50	175.00	181.00	188.00	199.50
0 to 3000	0 to 1650	R	159.50	165.50	169.00	158.50	175.00	181.00	188.00	199.50

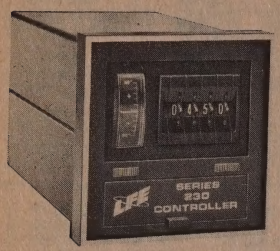
TEMPERATURE RANGES (THERMOCOUPLE)			OPTICAL COMPACK CONTROLLERS TIME PROPORTIONING CONTROL				OPTICAL COMPACK CONTROLLERS SCR DRIVER CONTROL			
°F	°C	T/C	Model 303-K	Model 503-K	Model 603-K	Model 371-K	Model 303-K	Model 503-K	Model 603-K	Model 371-K
0 to 300	0 to 150	J	$209.50	$212.00	$216.50	$212.00	$234.50	$237.00	$241.50	$237.00
0 to 500	0 to 260	J	207.00	209.50	213.50	209.50	232.00	234.50	238.50	234.50
0 to 800	0 to 400	J	207.00	209.50	213.50	209.50	232.00	234.50	238.50	234.50
0 to 1000	0 to 500	J	207.00	209.50	213.50	209.50	232.00	234.50	238.50	234.50
0 to 1500	0 to 800	K	203.50	204.00	209.50	204.00	228.50	229.00	234.50	229.00
0 to 2000	0 to 1100	K	203.50	204.00	209.50	204.00	228.50	229.00	234.50	229.00
0 to 2500	0 to 1370	K	203.50	204.00	209.50	204.00	228.50	229.00	234.50	229.00
0 to 3000	0 to 1650	R	207.00	209.50	213.50	209.50	232.00	234.50	238.50	234.50

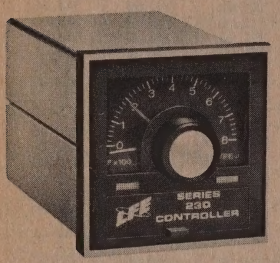
Consult Factory for ranges, accessories, and options not listed.
The above prices are for single setpoint. Add $25.00 for double setpoint.
Time proportioning control is available for single setpoint solid state Compack controllers. Add $25.00.

*The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.

LFE CORPORATION

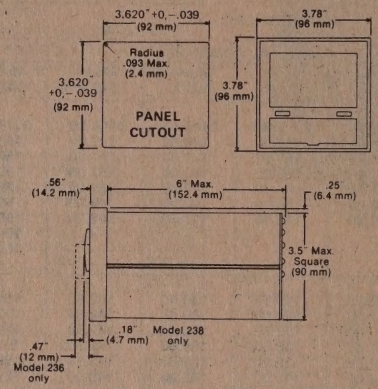
SERIES 230 TEMPERATURE CONTROLLERS





COMPACT DESIGN

Quarter DIN
cutout and bezel dimensions save panel space



LFE's new SERIES 230 temperature controllers are ideally suited for the exacting requirements of thermal processes. They represent the latest state-of-the-art electronics technology backed by LFE's long experience in process control.

LFE SERIES 230 temperature controllers use reliable solid-state design with advanced integrated circuit technology that minimizes heat and component failure and reduces total components. You get precise and ± ¼° consistent control of temperature to assure constant product uniformity, high product quality, and profitable throughput. The controller extends only six inches in depth from the front of the panel. Plug-in construction enables simple field maintenance and rapid replacement if it should become necessary.

Digital and analog setpoint versions are available. Analog set models have a full scale temperature indicator. Digital set models have a thumbwheel setpoint with a ± 50°F or °C deviation indicator. Deviation or process alarm functions are available. LFE SERIES 230 controllers provide proportional, integral, and derivative action. Controller adjustments conveniently located upfront are proportional band, rate time (derivative), reset (integral), cycle time, alarm setpoint, and secondary setpoint.

HOW TO ORDER

1. Specify the model number.

Model Numbers and Prices*	Analog Set	Digital Set
single output	236-13 $225.00	238-13 $245.00
dual output	236-23 $255.00	238-23 $275.00
bidirectional output	236-33 $265.00	238-33 $285.00

2. Specify the range and sensor type from the following list. The prices listed above do not include temperature sensors.

STANDARD RANGES FOR ANALOG SETPOINT MODELS	
0 to 300°F	J
0 to 400°F	J
0 to 500°F	J, T
0 to 600°F	J
0 to 800°F	J
0 to 1000°F	J
0 to 1500°F	K
0 to 2000°F	K
0 to 2500°F	K
0 to 3000°F	R, S
–100 to +400°F	T
–300 to +300°F	T
0 to 200°C	J
0 to 300°C	J
0 to 500°C	J, K
0 to 600°C	J
0 to 800°C	K
0 to 1000°C	K, R, S, Pt II

STANDARD RANGES FOR DIGITAL SETPOINT MODELS	
0 to 400°F	J
0 to 500°F	J, T
0 to 600°F	J
0 to 800°F	J
0 to 1000°F	J, K
0 to 2000°F	K
0 to 500°C	J, K
0 to 600°C	K
0 to 800°C	K
0 to 1000°C	K

Thermocouple sensors (T/C)

J	Iron-Constantan
K	Chromel-Alumel
T	Copper-Constantan
R	Platinum-Platinum, 13% Rhodium
S	Platinum-Platinum, 10% Rhodium
Pt II	Platinel II

3. Specify the electrical outputs.

LEGEND
TPR: Time Proportioning
SS: Solid-State

SINGLE OUTPUT (models 236-13, 238-13)
- 0-5V
- 4-20mA
- TPR relay
- TPR SS relay
- 1-5mA

DUAL OUTPUT (models 236-23, 238-23)

Primary (3-mode)	Secondary (1-mode)
0-5V	SS relay
1-5mA	SS relay
4-20mA	SS relay
TPR SS relay	SS relay

BIDIRECTIONAL OUTPUT (models 236-33, 238-33)

Primary (3-mode)	Secondary (3-mode)
TPR SS relay	TPR SS relay
TPR SS relay	0-5V
0-5V	TPR SS relay
0-5V	0-5V
4-20mA	TPR SS relay
4-20mA	4-20mA
1-5mA	1-5mA
1-5mA	TPR SS relay
0-5V	TPR SS 4:1
TPR SS relay	TPR SS 4:1
4-20mA	TPR SS 4:1

4:1 Cooling gain is 25% of heating gain. Where not specified, cooling and heating gains are equal.

4. Specify alarm option, if required. Only one of the three alarm options can be specified for any one instrument.

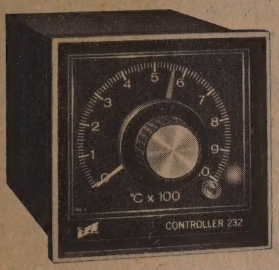
Alarm Option	Price* Adder
PROCESS ALARM: activated when process temperature exceeds or falls below an independent setpoint. SPDT adjustable 0-100%.	$35.00
DEVIATION ALARM: plus **OR** minus a desired percent from the principal setpoint. SPDT adjustable 0-25% of span.	40.00
DEVIATION BAND ALARM: plus **AND** minus a desired percent from the principal setpoint. SPDT adjustable ± 0.5% to ± 25% of span.	35.00

***The prices listed above are net each for lots of 1-9. Deduct 5% for lots of 10-24.**

LFE CORPORATION

TEMPERATURE CONTROLLERS

MODEL 232

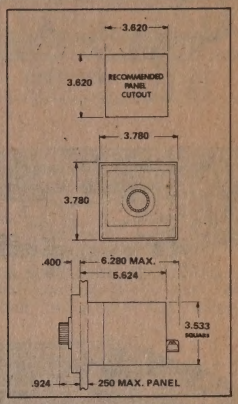


The Model 232 is a Compact, Solid State Controller available in a variety of control functions. It is suitable for temperature control of processes up to 3,000°F. An easily-read extra long 6.5 inch 250° arc indicator scale provides full scale temperature readout. A press-to-set knob allows the setpoint to be set on the indicator scale. The 232 controller saves panel space with its ¼ DIN dimensions. The 232 controller is available with on-off or time proportioning output.

The Model 232-20 is a highly compact solid-state Temperature Controller designed for applications requiring two separate but related control actions from one control unit. An auxiliary setpoint is adjustable 0 to 5% above or below the primary setpoint.

The 232-F is a Factory Mutual approved temperature limit instrument. It is designed, specifically to protect people and equipment by shutting off heating equipment and/or sounding an alarm when the limit setpoint temperature is exceeded. (FM # 22945)

RANGES	T/C
0 to 300°C	J
0 to 300°F	J
0 to 500°C	J
0 to 500°F	J
0 to 800°F	J
0 to 1000°C	K
0 to 1000°F	J
0 to 1000°F	K
0 to 1200°F	K
0 to 1500°F	J
0 to 1500°F	K
0 to 2000°F	K
0 to 2500°F	K
0 to 3000°F	R
0 to 3000°F	S



Model Number	Description	Control Output	Price* No Meter Indication	Price* With Meter Indication
232	Single output controller	On/off	$102.00	$122.00
		Time proportioning	112.00	132.00
232-20	Dual output controller with auxiliary setpoint	On/off (primary)	158.00	178.00
		Time proportioning (primary)	168.00	188.00
232-F	Temperature limit instrument	Limit	120.00	140.00

Option	For Model	Price* Adder
Solid state switch	232	$10.00
2 solid state switches	232-20	$20.00
External indicator output	232	$ 5.00

MODEL 227

The Model 227 Temperature Controller is especially designed for applications requiring a moderately priced controller with two-mode (proportional plus integral, or reset) stability. The 227 will accept Thermocouple or RTD (Resistance Temperature Detector) sensor inputs, and is available with any one of five outputs; Proportioning voltage, proportioning current, on/off relay, and phase fired or zero crossing pulse output. Full-scale temperature indication is provided on a large 3" edgewise display. It is also available with integral power pack especially designed for applications requiring an economical controller for loads up to 20 Amperes.

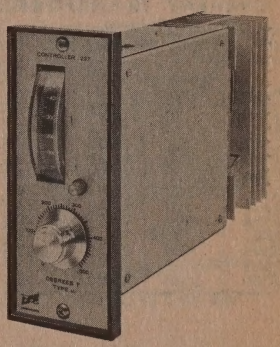
Control Mode	OUTPUT FORM	Price* ** Package A	Price* ** Package C
On/Off	On/Off Relay output. SPDT contacts rated at 2 amps, 120 VAC noninductive.	$176.00	$162.00
	On/Off triac, 9-amp solid state control element for resistive loads up to 240 VAC with integral power pack.	$181.00	–
Single Mode	Time proportioning, 9 amp solid state control element for resistive loads up to 240 VAC with integral power pack.	$181.00	–
Two Mode	Proportioning voltage output: 0 to 5 volts DC into a min. load of 1K.	$169.00	$153.00
	Proportioning current output: 0 to 5 mA DC into a max. load of 3K.	$169.00	$153.00
	SCR Driver phase-fired output—two isolated pulse outputs to drive SCR gates. Pulse amplitude 10 volts, 10 micro-second duration.	$188.00	$173.00
	SCR Driver zero-crossing output—two isolated pulse outputs to drive SCR gates.	$205.00	$190.00
	Proportioning phase-fired integral control. 9-amp solid-state control element for resistive loads up to 240 VAC with integral power pack.	$209.00	–
	Proportioning zero crossing fired integral control. 9-amp solid-state control element for resistive loads up to 240 VAC with integral power pack.	$229.00	–
	Proportioning phase-fired 20 Amp integral control for resistive loads up to 240 VAC with integral power pack.	$271.00	–
	Proportioning zero-crossing fired 20 Amp integral control for resistive loads up to 240 VAC with integral power pack.	$290.00	–

Package configurations

A = complete package with integral temperature indicator and integral setpoint assembly.

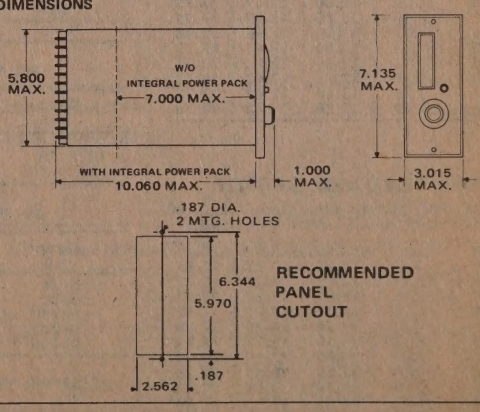
C = package with remote setpoint assembly and no temperature indicator.

RANGES	T/C
0 to 300°F	J
0 to 500°F	J
0 to 600°F	J
0 to 800°F	J
0 to 1000°F	J,K
300 to 800°F	J
500 to 1500°F	K
0 to 2000°F	K
1000 to 2000°F	K
500 to 2500°F	K,R,S
1000 to 3000°F	R,S,B
−100 to +400°F	T
0 to 200°C	J
0 to 300°C	J
0 to 500°C	J,K
0 to 600°C	J
0 to 800°C	J,K
0 to 1000°C	K,R,S
200 to 1200°C	K,R,S
700 to 1700°C	R
−200 to +200°C	T



OPTIONS	Price*
Remote setpoint/meter assembly	$ 40.00
Ten-position switch (req'd. when a single meter or recorder is used to monitor process temperature at several points)	$ 45.00
Plug connector part no. 1125-245	$ 4.50
Special Range (subject to factory acceptance)	$100.00
Adjustable proportioning band and integral action	$ 30.00

DIMENSIONS



**The 227 prices listed above are for standard T/C ranges. Add $18.00 for standard RTD ranges.

*The prices listed above are net each for lots of 1-9. Deduct 10% for lots of 10-24.

Simpson Panel Meters

INSTRUMENTS THAT STAY ACCURATE

3623, 3643

1521, 1522, 1541, 1542

1622, 1642, 1921, 1941

CURRENT TRANSFORMERS

Inverted one-turn primary type. For use with AC ammeters. Secondary, 5 amps.

Model	Primary Amps	Net Each, Lots of 1-9	10-24	25-49
1293	50	$33.00	$29.70	$28.05
1306	75	24.30	21.87	20.66
1297	100	20.25	18.23	17.21
1298	150	18.00	16.20	15.30
1299	200	18.00	16.20	15.30
1313	250	18.00	16.20	15.30
1300	300	20.25	18.23	17.21
1305	400	22.50	20.25	19.13
1301	500	24.30	21.87	20.66
2303	600	24.30	21.87	20.66
2459	750	28.80	25.92	24.48
2304	1000	30.90	27.81	26.27

PORTABLE SHUNTS

For DC panel ammeters requiring external shunt. Drop, 50 mV. Accuracy, ±1%. Phenolic base; with 5-ft. leads.

Model	Amps	Net Each, Lots of 1-9	10-24	25-49
6700	1	$13.80	$12.42	$11.73
6703	5	13.80	12.42	11.73
6704	10	13.80	12.42	11.73
6705	15	13.80	12.42	11.73
6707	25	13.80	12.42	11.73
6708	30	13.80	12.42	11.73
6709	50	13.80	12.42	11.73
6711	75	13.80	12.42	11.73
6713	100	13.80	12.42	11.73
6714	150	13.80	12.42	11.73
6715	200	13.80	12.42	11.73

SWITCHBOARD SHUNTS

For DC switchboard ammeters. Drop, 50 mV. Accuracy, ±1%. With 5-ft. leads.

6500	100	$13.80	$12.42	$11.73
6503	150	14.85	13.37	12.62
6504	200	14.85	13.37	12.62
6505	250	14.85	13.37	12.62
6506	300	14.85	13.37	12.62
6507	400	18.00	16.20	15.30
6508	500	21.30	19.17	18.11
6509	600	25.05	22.55	21.29
6510	750	32.10	28.89	27.29
6511	800	33.90	30.51	28.82
6512	1000	41.25	37.13	35.06
6513	1200	49.05	44.15	41.69
6514	1500	61.05	54.95	51.89
6515	2000	67.80	61.02	57.63
6516	2500	85.65	77.09	72.80
6517	3000	101.55	91.04	86.32

EDGEWISE PANEL METERS MODELS 3623 AND 3643

Molded polycarbonate case with top and bottom formed steel covers; two-piece offset scale for parallax-free readings; self-contained mounting lock eliminates need for external hardware; front bezel zero adjust. **Accuracy:** 2% of full scale with standard pivot and jewel suspension; 1% of full scale with taut band suspension available on special order. **Scale Length:** 2.6". **Size:** 3.60" w. x 1.23" h. Specify vertical or horizontal mounting type.

3623 DC PANEL METERS

Model	Scale	Net Each, Lots of 1-9	10-24	25-49
16862	0–25 μA	$46.35	$41.72	$39.40
16863	0–50 μA	43.65	39.29	37.10
16864	0–100 μA	41.25	37.13	35.06
16865	0–200 μA	38.85	34.97	33.02
16866	0–500 μA	37.65	33.89	32.00
16867	25–0–25 μA	44.10	39.69	37.49
16868	0–1 mA	36.75	33.08	31.24
16869	4–20 mA	40.50	36.45	34.43
16870	0–50 mV	37.80	34.02	32.13
16873	0–25 V	39.00	35.10	33.15
16874	0–50 V	39.00	35.10	33.15
16880	0–10 V	39.00	35.10	33.15
16881	0–15 V	39.00	35.10	33.15

3643 AC PANEL METERS

16871	0–5 A*	$49.20	$44.28	$41.82
16879	100–130 V†	90.15	81.14	76.63

*Rectifier type. †Segmental.

STACKING EDGEWISE PANEL METERS—MODELS 1622, 1642, 1921 AND 1941

Stacks horizontally or vertically. Features self-shielding core magnet meter movement to eliminate protruding barrel. Scale extends nearly to full width and height of meter. Steel housing, plastic window, dust-proof construction. Insulated terminals. **Accuracy:** ±2% FS. **Dielectric:** 1,500 V rms. **Terminals:** 1622 and 1642 have 6-32 studs; 1942 and 1941, solder type. **Size:** 1622 and 1642: 2⅝" w. x ¾" h.; mtg. ctrs. 2¹¹⁄₁₆"; cutout .562" x 2.312"; scale 1.85" lg. 1921 and 1941: 1.81" w. x 2.51" d. x .50" h.; mtg. ctrs. 2.28; cutout .525" x 1.718"; scale 1.370" lg.

DC VOLTMETERS—5,000 OHMS/V

Range Volts	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–10, 0–15	$26.25	$27.75
0–25, 0–50, 0–150	26.25	27.75
0–500	—	27.90

DC MILLIVOLTMETERS

Range mV	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–50	$27.45	$29.10

DC MILLIAMMETERS

Range mA	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–1, 0–5, 0–10	$25.80	$27.60
0–25, 0–50	27.15	28.80
0–100, 0–500	27.15	28.80

DC MICROAMMETERS

Range μA	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–25	$33.75	$35.25
0–50	33.45	34.65
0–100	29.85	31.80
0–200	27.45	29.10
0–500	26.85	28.20

RECTIFIER TYPE AC VOLTMETERS—5,000 OHMS/V

Range Volts	Net Each, Lots of 1-9* 1941—1½"	1642—2½"
0–150	$32.70	$34.20

EDGEWISE PANEL INSTRUMENTS—MODELS 1521, 1522, 1541 AND 1542

For mounting wherever space is a problem. Supplied with mounting hardware, including bezel with two speed nuts for quick, easy mounting. **Types:** DC and AC rectifier. **Accuracy:** DC, ±2% of full scale; AC, ±3% of full scale at 25° and 60 Hz sine wave. **Meter Movement:** Self-shielded. **Case:** Dustproof, molded acrylic. **Marking:** Black numbers, white background. **Terminals:** Stud type, ammeters; solder, all others. **Size:** 1521 and 1541: 1¾" w. x 2" d. x 1.13" h., overall; mtg. ctrs. 2"; cutout 1.94" x .53", scale 1⅜" lg. 1522 and 1542: 2½" w. x 3½" d. x 1.22" h. overall; mtg. ctrs., 2¹⁵⁄₁₆"; cutout 2.56" x .68"; scale 1⅞" lg.

VOLUME LEVEL INDICATORS

Range VU	Net Each, Lots of 1-9* 1541—1½"	1542—2½"
A or B Scale	—	$40.35

DC MILLIVOLTMETERS

Range mV	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–50	$23.70	$26.10

DC VOLTMETERS

Ranges Available: 0–10, 0–15, 0–25, 0–50, 0–150 and 0–500. All 1,000 ohms/volt, except 0–500 V, 2,000 ohms/V.

Range Volts	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–10 to 0–150	$22.50	$24.75
0–500	22.80	25.05

DC MICROAMMETERS

Range μA	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–25	$33.90	$36.30
0–50	29.70	31.95
0–100	26.25	28.80
0–200	23.70	26.10
0–500	23.10	25.20

DC MILLIAMMETERS

Range mA	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–1, 0–5	$22.05	$24.30
0–10	22.05	24.30
0–25, 0–50, 0–100	23.10	25.50
0–500	23.10	25.50

DC AMMETERS

Range Amps	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–5, 0–25	—	$26.10

RECTIFIER TYPE AC VOLTMETER

Resistance: 1,000 ohms per volt.

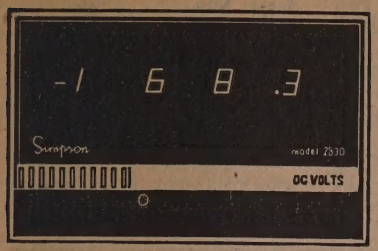
Range Volts	Net Each, Lots of 1-9* 1541—1½"	1542—2½"
0–150	$29.25	$31.35
0–300	—	31.35

★QUANTITY DISCOUNTS

Lots of	Discount	Multiplier
1–9	None	.....
10–24	−10%	.90
25–49	−15%	.85

Simpson Panel & Portable Meters

INSTRUMENTS THAT STAY ACCURATE



MODEL 2830 DIGITAL PANEL METER

Reliable 3½ digit digital panel meter for DC voltage and current measurements. Solid state circuitry with IC's for fast and accurate measurements. Features include automatic polarity and out of range indication. High input impedance and fast response time. Zero span and balance adjustable from front panel. Non-blinking type meter has bi-polar display and LED readout (.33" high). AC line operated and built-in power supply. Programmed cyclical burn-in. **Accuracy:** 0.1%. **Response Time:** Up to 1000 counts, less than 600 millisec. **Power Required:** 117/243 VAC ±10%, 50–400 Hz, 6 watts. **Size:** 4.34" w. x 2.813" d. x 2.70" h.; panel cutout, 2.813" x 4.375".

DC VOLTAGE MEASUREMENTS

Range	Maximum Indication	Input Impedance	Maximum Input V	Simpson Number	Net Each
200 mV	199.9 mV	100 megohms*	300 V	22960	$173.85
2 V	1.999 V	1000 megohms*	300 V	22961	173.85
20 V	19.99 V	10 megohms	300 V	22962	173.85
200 V	199.9 V	10 megohms	300 V	22963	173.85

DC CURRENT MEASUREMENTS

Range	Maximum Indication	Voltage Drop†	Max. Input Current	Simpson Number	Net Each
20 μA	19.99 μA	100 mV	5 mA	22965	$173.85
200 μA	1999.9 μA	100 mV	14 mA	22966	173.85
2 mA	1.999 mA	100 mV	50 mA	22967	173.85
20 mA	19.99 mA	100 mV	140 mA	22968	173.85
200 mA	199.9 mA	100 mV	1 A	22969	173.85

*Greater than. †Based on numerical indication of 1000. Bias current, 2 nA max. at reference conditions. Input isolation, 250 V rms between power line ground and circuit ground.

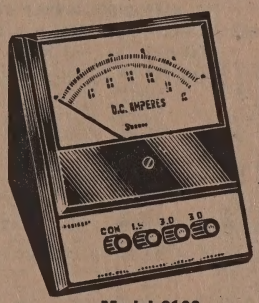
Options Available: Readout assembly can be remotely mounted. A/D conversion board available separately and with BCD output. Parallel BCD output; DTL/TTL compatible (1-2-4-8 positive logic). Logic Level: Logic "0" = 0 to +0.5 V. Logic "1" = +2 V to +5.25 V. Power supply board is separate; unit can be furnished with or without power supply, or for different input power requirements.

MODEL 2100 4½" PORTABLE INSTRUMENT WITH BUILT-IN CENTURY SERIES METERS

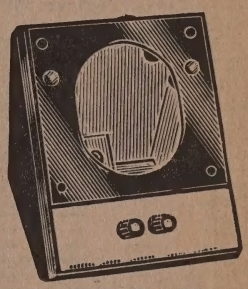
Best suited for electric measurements in schools, labs and industry. Features large, easy to read scale, knife-edge pointer; non-fogging glass lens. Self-shielded DC and AC rectifier movements. Four color-coded, multi-range binding posts, one common and 3 for range selection. Rear hole permits mounting fuse holder; nylon plug covers hole when not in use. **Accuracy:** DC instruments, ±2% full-scale; AC instruments, ±3% full-scale. **Size:** 5.15" w. x 5.55" d. x 5.70" h.

Simpson Model 2100 Portable Instrument—Comes in white case with black and white panel. Built-in Century meters with following ranges are stock items.

Wide-Vue meters, other ranges available on special order.



Model 2100


Model 2100 Case Kit

DC METERS

Model	Ranges	Net Each
17950	0–1.5–3–30 Amps	$40.50
17951	0–1–10–100 mA	40.50
17952	0–25–50–500 mA	40.50
17953	0–10–50–250 μA	77.70
17954	0–1.5–3–30 V	40.50
17955	0–10–25–100 V	41.55
17960	0–1K–100K ohms	45.30

AC METERS

17956	0–3–15–150 V	$57.90
17957	0–30–150–300 V	57.90
17958	0–150–300–600 V	53.55

Simpson Model 2100, Catalog No. 17949 Case Kit—Case assembly for mounting a 4½" meter to meet specific needs. Includes case, panel assembly, legend overlay, two binding posts, nylon plug and hardware. Net Each..... $8.40

BOLD-VUE PANEL METERS

Bold looking panel meters for 3-hole mounting. Made for easy reading, with bold numbers and wide tapered red lance pointer. DC meters have self-shielded annular movements; AC meters have magnetically damped iron vane movements. **Accuracy:** ±2% of full-scale. **Scale Length:** 2½" meters, 2.207"; 3½" meters, 3.047". **Size:** 2½" meters have 2¾" x 2 1/16" flange; body, 2.17" dia. x 1.19" deep. 3½" meters have 3½" x 3½" flange; body, 2.75" dia. x 1.19" deep.

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½" Net Each, Lots of 1-9	10-24	25-49	Model 1223—3½" Net Each, Lots of 1-9	10-24	25-49
0–5	1000 ohms/ volt	$24.75	$22.27	$21.04	$25.65	$23.08	$21.80
0–10		24.75	22.27	21.04	25.65	23.08	21.80
0–15		24.75	22.27	21.04	25.65	23.08	21.80
0–25		24.75	22.27	21.04	25.65	23.08	21.80
0–30		24.75	22.27	21.04	25.65	23.08	21.80
0–50		24.75	22.27	21.04	25.65	23.08	21.80
0–100		24.75	22.27	21.04	25.65	23.08	21.80
0–150		24.75	22.27	21.04	25.65	23.08	21.80

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½" Net Each, Lots of 1-9	10-24	25-49	Model 1223—3½" Net Each, Lots of 1-9	10-24	25-49
0–1	.050	$23.70	$21.33	$20.14	$22.50	$20.25	$19.12
0–5	.010	23.70	21.33	20.14	22.50	20.25	19.12
0–10	.005	23.70	21.33	20.14	22.50	20.25	19.12

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½" Net Each, Lots of 1-9	10-24	25-49	Model 1223—3½" Net Each, Lots of 1-9	10-24	25-49
0–1 mA	43.0	$22.05	$19.85	$18.74	$24.00	$21.60	$20.40
0–50	2.0	22.50	19.85	18.74	24.00	21.60	20.40
0–100	1.0	22.50	20.25	19.13	24.75	22.27	21.04
0–500	0.2	22.50	20.25	19.13	24.75	22.27	21.04

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

0–50 μA	1800	$29.85	$26.86	$25.37	$30.45	$27.40	$25.88
0–100	1800	26.85	24.16	22.82	27.90	25.11	23.71
0–200	1100	24.30	21.87	20.65	25.65	23.08	21.80
25–0–25	1800	—	—	—	30.75	27.67	26.14
50–0–50	1800	27.30	24.57	23.20	27.90	25.11	23.71
100–0–100	1100	—	—	—	25.80	23.22	21.93

AC AMMETERS—IRON VANE TYPE MOVEMENT

Range	Approx. Resis., Ohms	Model 1252—2½" Net Each, Lots of 1-9	10-24	25-49	Model 1253—3½" Net Each, Lots of 1-9	10-24	25-49
0–5 Amps	.008	$22.50	$20.25	$19.12	$26.10	$23.49	$22.18
0–10	.004	22.50	20.25	19.12	26.10	23.49	22.18
0–15	.0025	22.50	20.25	19.12	26.10	23.49	22.18
0–25	.002	22.50	20.25	19.12	26.85	24.16	22.82
0–50	.001	22.50	20.25	19.12	26.85	24.16	22.82

AC VOLTMETERS—IRON VANE TYPE MOVEMENT

0–150 V	25,000	$23.55	$21.19	$20.02	$25.20	$22.68	$21.42
0–300	50,000	23.55	21.19	20.02	25.20	22.68	21.42

Simpson Century Panel Meters

INSTRUMENTS THAT STAY ACCURATE

Century Series panel meters offer attractive design and easy reading. DC meters have self-shielded movements, with calibration unaffected by stray magnetic fields or magnetic mounting. AC meters have iron vane type movement. AC milliammeters and ammeters are calibrated for use on 25 through 800 Hz; AC voltmeters, 25–125 Hz. Calibration for frequencies up to 800 Hz available on request. **Flange Size:** 1½″ meters, 1.75″ sq.; 2½″ meters, 2.38″ sq.; 3½″ meters, 3.00″ sq.; 4½″ meters, 4.66″ x 4.20″. **Depth Behind Panel:** 1.34″ except 1½″ meters, .90″; wattmeters, 1.75″.

SPECIFICATIONS

Size	Model	Accuracy, Full Scale	Scale Lgth.	Mtg. Hole	4 Mtg. Studs on
1½″	2121	±2%	1.50″	1.51″ dia.	1.32″ centers #4-40
	2141	±3%			
2½″	2122, T	±2%	2.30″	2.16″ dia.	1.88″ centers #4-40
	2142	±3%			
	2152	±2%			
3½″	2123, T	±2%	3.14″	2.69″ dia.	2.24″ centers #4-40
	2143	±3%			
	2153, 2133	±2%			
	2173	±3%		2.75″	
4½″	2124, T	±2%	3.93″	2.69″ dia.	4″ x 3.57″ centers #6-32
	2144	±3%			
	2154, 2134	±2%			
	2174	±3%		2.75″	

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (1000 OHMS/VOLT EXCEPT AS NOTED)

MODEL 2121—1½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$23.10	$20.79	$19.64
0–8	—	—	—
0–10	23.10	20.79	19.64
0–15	23.10	20.79	19.64
0–25	23.10	20.79	19.64
0–30	23.10	20.79	19.64
0–50	23.10	20.79	19.64
0–100	23.10	20.79	19.64
0–150	23.10	20.79	19.64
0–200	—	—	—
0–250	—	—	—
0–300	—	—	—
0–300*	23.10	20.79	19.64
0–500*†	28.80	25.92	24.48

MODEL 2122—2½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$24.75	$22.28	$21.04
0–8	—	—	—
0–10	24.75	22.28	21.04
0–15	24.75	22.28	21.04
0–25	24.75	22.28	21.04
0–30	24.75	22.28	21.04
0–50	24.75	22.28	21.04
0–100	24.75	22.28	21.04
0–150	24.75	22.28	21.04
0–200	—	—	—
0–250	—	—	—
0–300	24.75	22.28	21.04
0–300*	—	—	—
0–500*	25.65	23.09	21.80
0–750*†	31.05	27.95	26.39
0–1000*†	32.10	28.89	27.29

MODEL 2123—3½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$25.65	$23.09	$21.80
0–8	—	—	—
0–10	25.65	23.09	21.80
0–15	25.65	23.09	21.80
0–25	25.65	23.09	21.80
0–30	25.65	23.09	21.80
0–50	25.65	23.09	21.80
0–100	25.65	23.09	21.80
0–150	25.65	23.09	21.80
0–200	25.65	23.09	21.80
0–250	25.65	23.09	21.80
0–300	25.65	23.09	21.80
0–300*	—	—	—
0–500*	26.85	24.17	22.82
0–750*	26.85	24.17	22.82
0–1000*†	33.00	29.70	28.05

MODEL 2124—4½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$27.90	$25.11	$23.72
0–8	27.90	25.11	23.72
0–10	27.90	25.11	23.72
0–15	27.90	25.11	23.72
0–25	27.90	25.11	23.72
0–30	27.90	25.11	23.72
0–50	27.90	25.11	23.72
0–100	27.90	25.11	23.72
0–150	27.90	25.11	23.72
0–200	27.90	25.11	23.72
0–250	—	—	—
0–300	27.90	25.11	23.72
0–300*	—	—	—
0–500*	28.95	26.06	24.61
0–750*	28.95	26.06	24.61
0–1000*†	35.40	31.86	30.09

*2000 ohms/volt. †External multiplier furnished; all others self-contained.

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Self-contained types are: 1½″ through 10 amps; 2½″, 3½″ and 4½″ through 50 amps. All other ranges require external shunts.

MODEL 2121—1½″

0–1 Amps	$23.10	$20.79	$19.64
0–1.5	—	—	—
0–2	23.10	20.79	19.64
0–3	23.10	20.79	19.64
0–5	23.10	20.79	19.64
0–10	23.10	20.79	19.64
0–15	23.10	20.79	19.64
0–25	23.10	20.79	19.64
0–30	—	—	—
0–50	23.10	20.79	19.64
0–100	—	—	—
0–150	—	—	—
0–200	—	—	—
0–300	—	—	—
0–500	—	—	—
15–0–15	—	—	—
30–0–30	—	—	—

MODEL 2122—2½″

0–1 Amps	$23.70	$21.33	$20.15
0–1.5	23.70	21.33	20.15
0–2	23.70	21.33	20.15
0–3	23.70	21.33	20.15
0–5	23.70	21.33	20.15
0–10	23.70	21.33	20.15
0–15	23.70	21.33	20.15
0–25	23.70	21.33	20.15
0–30	23.70	21.33	20.15
0–50	23.70	21.33	20.15
0–100	23.70	21.33	20.15
0–150	—	—	—
0–200	23.70	21.33	20.15
0–300	—	—	—
0–500	—	—	—
15–0–15	—	—	—
30–0–30	—	—	—

MODEL 2123—3½″

0–1 Amps	$24.75	$22.28	$21.04
0–1.5	24.75	22.28	21.04
0–2	24.75	22.28	21.04
0–3	24.75	22.28	21.04
0–5	24.75	22.28	21.04
0–10	24.75	22.28	21.04
0–15	24.75	22.28	21.04
0–25	24.75	22.28	21.04
0–30	24.75	22.28	21.04
0–50	24.75	22.28	21.04
0–100	24.75	22.28	21.04
0–150	24.75	22.28	21.04
0–200	24.75	22.28	21.04
0–300	24.75	22.28	21.04
0–500	24.75	22.28	21.04
15–0–15	26.10	23.49	22.19
30–0–30	26.10	23.49	22.19

MODEL 2124—4½″

0–1 Amps	$26.85	$24.17	$22.82
0–1.5	—	—	—
0–2	26.85	24.17	22.82
0–3	26.85	24.17	22.82
0–5	26.85	24.17	22.82
0–10	26.85	24.17	22.82
0–15	26.85	24.17	22.82
0–25	26.85	24.17	22.82
0–30	26.85	24.17	22.82
0–50	26.85	24.17	22.82
0–100	26.85	24.17	22.82
0–150	26.85	24.17	22.82
0–200	26.85	24.17	22.82
0–300	26.85	24.17	22.82
0–500	26.85	24.17	22.82
15–0–15	—	—	—
30–0–30	—	—	—

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2121—1½″

0–1 mA	$22.05	$19.85	$18.74
0–3	—	—	—
0–5	22.05	19.85	18.74
0–10	22.05	19.85	18.74
0–15	22.05	19.85	18.74
0–20	—	—	—
0–25	23.10	20.79	18.74
0–50	23.10	20.79	18.74
0–100	23.10	20.79	18.74
0–150	23.10	20.79	18.74
0–200	23.10	20.79	18.74
0–250	23.10	20.79	18.74
0–300	—	—	—
0–500	23.10	20.79	19.64
0–750	—	—	—
0–1000	—	—	—

MODEL 2122—2½″

0–1 mA	$23.25	$20.93	$19.76
0–3	23.25	20.93	19.76
0–5	23.25	20.93	19.76
0–10	23.25	20.93	19.76
0–15	23.25	20.93	19.76
0–20	—	—	—
0–25	23.70	21.33	20.15
0–50	23.70	21.33	20.15
0–100	23.70	21.33	20.15
0–150	23.70	21.33	20.15
0–200	23.70	21.33	20.15
0–250	23.70	21.33	20.15
0–300	23.70	21.33	20.15
0–500	23.70	21.33	20.15
0–750	—	—	—
0–1000	23.70	21.33	20.15

MODEL 2123—3½″

0–1 mA	$24.00	$21.60	$20.40
0–3	24.00	21.60	20.40
0–5	24.00	21.60	20.40
0–10	24.00	21.60	20.40
0–15	—	—	—
0–20	24.75	22.28	21.04
0–25	24.75	22.28	21.04
0–50	24.75	22.28	21.04
0–100	24.75	22.28	21.04
0–150	24.75	22.28	21.04
0–200	24.75	22.28	21.04
0–250	24.75	22.28	21.04
0–300	24.75	22.28	21.04
0–500	24.75	22.28	21.04
0–750	24.75	22.28	21.04
0–1000	—	—	—

MODEL 2124—4½″

0–1 mA	$25.65	$23.09	$21.80
0–3	25.65	23.09	21.80
0–5	25.65	23.09	21.80
0–10	25.65	23.09	21.80
0–15	—	—	—
0–20	—	—	—
0–25	26.85	24.17	22.82
0–50	26.85	24.17	22.82
0–100	26.85	24.17	22.82
0–150	26.85	24.17	22.82
0–200	26.85	24.17	22.82
0–250	26.85	24.17	22.82
0–300	26.85	24.17	22.82
0–500	26.85	24.17	22.82
0–750	26.85	24.17	22.82
0–1000	26.85	24.17	22.82

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2121—1½″

0–50 μA	$28.95	$26.06	$24.61
0–100	25.80	23.22	21.93
0–200	23.55	21.20	20.02
0–500	23.10	20.79	19.64
25–0–25	29.10	26.19	24.74
50–0–50	26.10	23.49	22.19
100–0–100	23.70	21.33	20.15
500–0–500	22.50	20.25	19.13

MODEL 2122—2½″

0–50 μA	$29.85	$26.87	$25.37
0–100	26.85	24.17	22.82
0–200	24.30	21.87	20.66
0–500	24.00	21.60	20.40
25–0–25	—	—	—
50–0–50	27.30	24.57	23.21
100–0–100	24.75	22.28	21.04
500–0–500	23.55	21.20	20.02

MODEL 2123—3½″

0–50 μA	$30.45	$27.41	$25.88
0–100	27.90	25.11	23.72
0–200	25.65	23.09	21.80
0–500	25.65	23.09	21.80
25–0–25	30.75	27.68	26.14
50–0–50	27.90	25.11	23.72
100–0–100	25.80	23.22	21.93
500–0–500	24.30	21.87	20.66

MODEL 2124—4½″

0–50 μA	$32.85	$29.57	$27.92
0–100	31.05	27.95	26.39
0–200	27.90	25.11	23.72
0–500	27.30	24.57	23.21
25–0–25	33.00	29.70	28.05
50–0–50	31.20	28.08	26.52
100–0–100	28.35	25.52	24.10
500–0–500	25.80	23.22	21.93

DC MICROAMMETERS—SELF-SHIELDED TAUT BAND METER MOVEMENT

MODEL 2122T—2½″

Range μA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	—	—	—
0–10	4900	$47.70	$42.93	$40.55
0–15	1960	43.35	39.02	36.85
0–25	1960	41.25	37.13	35.06
0–50	960	32.40	29.16	27.54
0–100	500	29.40	26.46	24.99
0–200	234	27.60	24.84	23.46

MODEL 2123T—3½″

Range μA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	$56.55	$50.90	$48.07
0–10	4900	49.65	44.69	42.20
0–15	1960	44.55	40.10	37.87
0–25	1960	43.05	38.75	36.59
0–50	960	33 00	29.70	28.05
0–100	500	30.45	27.41	25.88
0–200	234	—	—	—

MODEL 2124T—4½″

Range μA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	$60.15	$54.14	$51.13
0–10	4900	53.85	48.47	45.77
0–15	1960	48.45	43.61	41.18
0–25	1960	46.80	42.12	39.78
0–50	960	35.55	32.00	30.22
0–100	500	33.60	30.24	28.56
0–200	234	31.80	28.62	27.03

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. CONTINUED ON NEXT PAGE

Simpson Century Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DC MILLIVOLTMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2122—2½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$23.70	$21.33	$20.15
50–0–50	20	—	—	—

MODEL 2123—3½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$24.75	$22.28	$21.04
50–0–50	20	24.75	22.28	21.04

MODEL 2124—4½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$26.85	$24.17	$22.82
50–0–50	20	26.85	24.17	22.82

RECTIFIER TYPE AC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (2000 OHMS/VOLT)

MODEL 2141—1½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$31.80	$28.62	$27.03
0–10	31.80	28.62	27.03
0–15	—	—	—
0–50	—	—	—
0–150	31.80	28.62	27.03
0–300	31.80	28.62	27.03

MODEL 2142—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$29.40	$26.46	$24.99
0–10	—	—	—
0–15	—	—	—
0–50	—	—	—
0–150	29.40	26.46	24.99
0–300	—	—	—

MODEL 2143—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$33.60	$30.24	$28.56
0–10	33.60	30.24	28.56
0–15	33.60	30.24	28.56
0–50	33.60	30.24	28.56
0–150	33.60	30.24	28.56
0–300	—	—	—

MODEL 2144—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$37.20	$33.48	$31.62
0–10	37.20	33.48	31.62
0–15	37.20	33.48	31.62
0–50	37.20	33.48	31.62
0–150	37.20	33.48	31.62
0–300	37.20	33.48	31.62

AC VOLTMETERS—IRON VANE TYPE MOVEMENT (SELF-CONTAINED EXCEPT 0–500 V)

MODEL 2152—2½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	—	—	—
0–10	133	$22.50	$20.25	$19.13
0–15	300	22.50	20.25	19.13
0–25	833	22.50	20.25	19.13
0–50	3,333	22.50	20.25	19.13
0–100	16,666	—	—	—
0–150	25,000	23.55	21.20	20.02
0–250	41,166	23.55	21.20	20.02
0–300	50,000	23.55	21.20	20.02
0–500	83,333	—	—	—

MODEL 2153—3½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	$23.55	$21.20	$20.02
0–10	133	23.55	27.20	20.02
0–15	300	23.55	21.20	20.02
0–25	833	23.55	21.20	20.02
0–50	3,333	23.55	21.20	20.02
0–100	16,666	24.30	21.87	20.66
0–150	25,000	25.20	22.68	21.42
0–250	41,166	25.20	22.68	21.42
0–300	50,000	25.20	22.68	21.42
0–500	83,333	31.95	28.76	27.16

MODEL 2154—4½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	—	—	—
0–10	133	$26.25	$23.63	$22.31
0–15	300	26.25	23.63	22.31
0–25	833	26.25	23.63	22.31
0–50	3,333	26.25	23.63	22.31
0–100	16,666	26.25	23.63	22.31
0–150	25,000	26.85	24.17	22.82
0–250	41,166	26.85	24.17	22.82
0–300	50,000	26.85	24.17	22.82
0–500	83,333	34.05	30.65	28.94

AC AMMETERS—IRON VANE TYPE MOVEMENT

The following meters are self-contained: 2½″ through 50 amps, 3½″ and 4½″ through 75 amps. Higher range AC ammeters are 5-amp type to be used with external current transformer (listed on another page).

MODEL 2152—2½″

		Net Each, Lots of 1-9	10-24	25-49
0–1 Amps	.213	$21.30	$19.17	$18.11
0–1.5	.105	21.30	19.17	18.11
0–2	.065	—	—	—
0–3	.028	21.30	19.17	18.11
0–5	.008	21.30	19.17	18.11
0–10	.004	21.30	19.17	18.11
0–15	.0025	21.30	19.17	18.11
0–25	.002	22.05	19.85	18.74
0–30	.0015	22.05	19.85	18.74
0–50	.001	22.05	19.85	18.74
0–75	.008	—	—	—
0–100	.008	21.00	18.90	17.85
0–150	.008	—	—	—
0–200	.008	—	—	—
0–300	.008	—	—	—

MODEL 2153—3½″

		Net Each, Lots of 1-9	10-24	25-49
0–1 Amps	.213	$22.50	$20.25	$19.13
0–1.5	.105	—	—	—
0–2	.065	22.50	20.25	19.13
0–3	.028	22.50	20.25	19.13
0–5	.008	22.50	20.25	19.13
0–10	.004	22.50	20.25	19.13
0–15	.0025	22.50	20.25	19.13
0–25	.002	23.25	20.93	19.76
0–30	.0015	23.25	20.93	19.76
0–50	.001	23.25	20.93	19.76
0–75	.008	22.50	20.25	19.13
0–100	.008	22.50	20.25	19.13
0–150	.008	22.50	20.25	19.13
0–200	.008	22.50	20.25	19.13
0–300	.008	22.50	20.25	19.13

MODEL 2154—4½″

		Net Each, Lots of 1-9	10-24	25-49
0–1 Amps	.215	$23.85	$21.47	$20.27
0–1.5	.105	—	—	—
0–2	.065	23.85	21.47	20.27
0–3	.028	23.85	21.47	20.27
0–5	.008	23.85	21.47	20.27
0–10	.004	23.85	21.47	20.27
0–15	.0025	23.85	21.47	20.27
0–25	.002	24.75	22.28	21.04
0–30	.0015	24.75	22.28	21.04
0–50	.001	24.75	22.28	21.04
0–75	.008	26.85	24.17	22.82
0–100	.008	23.85	21.47	20.27
0–150	.008	23.85	21.47	20.27
0–200	.008	23.85	21.47	20.27
0–300	.008	23.85	21.47	20.27

AC MILLIAMMETERS—IRON VANE TYPE MOVEMENT

Ranges Available: 0–10 (Model 2153 not available), 0–50, 0–100, 0–250, 0–500 mA; specify when ordering.

MODEL 2152—2½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$21.00	$18.90	$17.85

MODEL 2153—3½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$22.50	$20.25	$19.13

MODEL 2154—4½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$23.85	$21.47	$20.27

DUAL-RANGE AC PANEL METERS, MODELS 2153 AND 2154, 0-150 AC VOLTS/0-5 AC AMPERES

Single instrument measures both volts and amps. For use in many common applications using an AC voltmeter and ammeter in pairs. Lets you save on panel space and purchasing cost. Can also measure extended AC current ranges through an accessory transformer. Available in 3½″ and 4½″ sizes, in Wide-Vue and Century Models.

Century Dual-Range Meter Model No.	Size	Net Each, Lots of 1-9	10-24	25-49
2153	3½″	$32.10	$28.89	$27.29
2154	4½″	34.20	30.78	29.07

VOLUME LEVEL INDICATORS—SELF-SHIELDED METER MOVEMENT

Range	Model 2141—1½″ Net Each, Lots of 1-9	10-24	25-49	Model 2142—2½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	—	—	—	$32.85	$29.57	$27.92
A Scale VU†	$35.40	$31.86	$30.09	39.00	35.10	33.15
B Scale VU†	—	—	—	—	—	—

Range	Model 2143—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2144—4½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	$34.95	$31.46	$29.71	$36.00	$32.40	$30.60
A Scale VU†	39.75	35.78	33.79	43.35	39.02	36.85
B Scale VU†	39.75	35.78	33.79	43.35	39.02	36.85

*Zero power level, 6 mW, 500-ohm line; 5000-ohm range. †Reference level, 1 mW, 600-ohm line; meet all electrical and ballistic specifications by Bell Labs and ASA as required by broadcasting, communication and sound engineers. Impedance, 3900 ohms at "0" VU.

WATTMETERS—DYNAMOMETER TYPE SINGLE PHASE

Accuracy, ±2% F.S. Maximum volts, 150 except 0–600 and up, 300 V. Calibrated for magnetic or non-magnetic panels; 25–125 Hz.

Range Watts	Max. Amps	Model 2173—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2174—4½″ Net Each, Lots of 1-9	10-24	25-49
0–75	1.0	$49.65	$44.69	$42.20	$61.65	$55.49	$52.40
0–150	2.0	49.65	44.69	42.20	61.65	55.49	52.40
0–300	4.0	49.65	44.69	42.20	61.65	55.49	52.40
0–750	10.0	49.65	44.69	42.20	61.65	55.49	52.40
0–600	4.0	54.00	48.60	45.90	65.70	59.13	55.85
0–1500	10.0	54.00	48.60	45.90	65.70	59.13	55.85
0–3000	20.0	54.00	48.60	45.90	65.70	59.13	55.85

WATTMETERS—COMPENSATED TYPE (±3% F.S. ACCURACY)

0–10	.175	$79.20	$71.28	$67.32	$82.35	$74.12	$70.00
0–20	.400	79.20	71.28	67.32	82.35	74.12	70.00
0–20*	.175	79.20	71.28	67.32	82.35	74.12	70.00
0–30	.650	79.20	71.28	67.32	82.35	74.12	70.00
0–30*	.300	79.20	71.28	67.32	82.35	74.12	70.00
0–50*	.500	79.20	71.28	67.32	82.35	74.12	70.00

*Maximum volts, 500; all others 300 volts maximum.

RF AMMETERS—SELF-SHIELDED METER MOVEMENT

Range Amps	Approx. Resis., Ohms	Model 2133—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2134—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1	.343	—	—	—	$32.40	$29.16	$27.54
0–2	.120	$28.35	$25.52	$24.10	32.40	29.16	27.54
0–3	.08	28.35	25.52	24.10	—	—	—
0–5	.045	28.35	25.52	24.10	—	—	—
0–10	.023	28.35	25.52	24.10	32.40	29.16	27.54

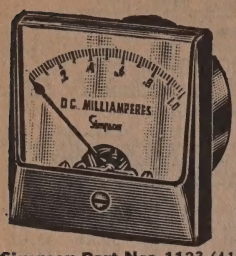
DC GALVANOMETERS—SELF-SHIELDED METER MOVEMENT

Range	Sensitivity μA	Model 2122—2½″ Net Each, Lots of 1-9	10-24	25-49	Model 2123—3½″ Net Each, Lots of 1-9	10-24	25-49
50–0–50	500–0–500	$23.25	$20.93	$19.76	$24.30	$21.87	$20.66
50–0–50	75–0–75	—	—	—	27.30	24.57	23.21

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. WRITE FOR INFORMATION.

Simpson Wide-Vue Panel Meters

INSTRUMENTS THAT STAY ACCURATE



Modern styling with durable, open face plastic cover for wide-angle readability and protection of meter face. DC meters have self-shielded meter movement (calibration not affected by stray magnetic fields or magnetic mounting). AC meters have iron-vane type movement. AC Milliammeters and Ammeters are calibrated for 25–800 Hz; Voltmeters are calibrated for use on 25–125 Hz; Wattmeters calibrated for either magnetic or non-magnetic panels and frequency range of 25–125 Hz. Other calibrations at frequencies up to 800 Hz, available on request.

Simpson Part Nos. 1123 (4½″) or **1253** (3½″) **Bezels**—For behind-the-panel mounting of "Wide-Vue" Meters. Net Each...**$2.70**

SPECIFICATIONS

Size	Model	Accuracy, Full Scale	Scale Lgth.	Mtg. Hole	4 Mtg. Studs on
1½″	1212, T	±2%	1.5″	1.5″ dia.	1.32″ centers #4-40
	1214	±3% **			
2½″	1227, T	±2%	2.3″	2.17″ dia.	1.88″ centers #4-40
	1247	±3% **			
	1257	±2%			
3½″	1327, T	±2%	3.14″	2.73″ dia.	2.24″ centers #4-40
	1337	±2%			
	1347	±3% **			
	1357	±2%			
4½″	1329, T	±2%	3.93″	2.75″ dia.	4″ x 3.56″ centers #6-32
	1339	±2%			
	1349	±3% **			
	1359	±2%			
	1379	±2%			

**At 25° C and 60 Hz sine wave.

DC PANEL METERS—MODELS 1212, 1227, 1227T, 1327, 1327T, 1329 AND 1329T

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (1000 OHMS/VOLT EXCEPT AS NOTED)

MODEL 1212—1½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$23.10	$20.79	$19.64
0-8	—	—	—
0-10	23.10	20.79	19.64
0-15	23.10	20.79	19.64
0-25	23.10	20.79	19.64
0-30	23.10	20.79	19.64
0-50	23.10	20.79	19.64
0-100	23.10	20.79	19.64
0-150	23.10	20.79	19.64
0-200	—	—	—
0-250	—	—	—
0-300	—	—	—
0-300*	23.10	20.79	19.64
0-500*†	28.80	25.92	24.48
0-750*	—	—	—
0-1000*	—	—	—

MODEL 1227—2½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$24.75	$22.28	$21.04
0-8	—	—	—
0-10	24.75	22.28	21.04
0-15	24.75	22.28	21.04
0-25	24.75	22.28	21.04
0-30	24.75	22.28	21.04
0-50	24.75	22.28	21.04
0-100	24.75	22.28	21.04
0-150	24.75	22.28	21.04
0-200	24.75	22.28	21.04
0-250	24.75	22.28	21.04
0-300	24.75	22.28	21.04
0-300*	—	—	—
0-500*	25.65	23.09	21.80
0-750*†	31.05	27.95	26.39
0-1000*†	32.10	28.89	27.29

MODEL 1327—3½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$25.65	$23.09	$21.80
0-8	25.65	23.09	21.80
0-10	25.65	23.09	21.80
0-15	25.65	23.09	21.80
0-25	25.65	23.09	21.80
0-30	25.65	23.09	21.80
0-50	25.65	23.09	21.80
0-100	25.65	23.09	21.80
0-150	25.65	23.09	21.80
0-200	25.65	23.09	21.80
0-250	25.65	23.09	21.80
0-300	25.65	23.09	21.80
0-300*	—	—	—
0-500*	26.85	24.17	22.82
0-750*	26.85	24.17	22.82
0-1000*†	33.00	29.70	28.05

MODEL 1329—4½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$27.90	$25.11	$23.72
0-8	27.90	25.11	23.72
0-10	27.90	25.11	23.72
0-15	27.90	25.11	23.72
0-25	27.90	25.11	23.72
0-30	27.90	25.11	23.72
0-50	27.90	25.11	23.72
0-100	27.90	25.11	23.72
0-150	27.90	25.11	23.72
0-200	27.90	25.11	23.72
0-250	27.90	25.11	23.72
0-300	27.90	25.11	23.72
0-300*	—	—	—
0-500*	28.95	26.06	24.61
0-750*	28.95	26.06	24.61
0-1000*†	35.40	31.86	30.09

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Self-contained types are: 1½″ through 10 amps; 2½″, 3½″ and 4½″ through 50 amps. All others require external shunts.

MODEL 1212—1½″

0-1 Amps	$23.10	$20.79	$19.64
0-1.5	—	—	—
0-2	23.10	20.79	19.64
0-3	23.10	20.79	19.64
0-5	23.10	20.79	19.64
0-10	23.10	20.79	19.64
0-15	23.10	20.79	19.64
0-25	23.10	20.79	19.64
0-30	—	—	—
0-50	23.10	20.79	19.64
0-100	—	—	—
0-150	—	—	—
0-200	—	—	—
0-300	—	—	—
0-500	—	—	—
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

MODEL 1227—2½″

0-1 Amps	$23.70	$21.33	$20.15
0-1.5	23.70	21.33	20.15
0-2	23.70	21.33	20.15
0-3	23.70	21.33	20.15
0-5	23.70	21.33	20.15
0-10	23.70	21.33	20.15
0-15	23.70	21.33	20.15
0-25	23.70	21.33	20.15
0-30	23.70	21.33	20.15
0-50	23.70	21.33	20.15
0-100	23.70	21.33	20.15
0-150	23.70	21.33	20.15
0-200	23.70	21.33	20.15
0-300	23.70	21.33	20.15
0-500	—	—	—
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

MODEL 1327—3½″

0-1 Amps	$24.75	$22.28	$21.04
0-1.5	24.75	22.28	21.04
0-2	24.75	22.28	21.04
0-3	24.75	22.28	21.04
0-5	24.75	22.28	21.04
0-10	24.75	22.28	21.04
0-15	24.75	22.28	21.04
0-25	24.75	22.28	21.04
0-30	24.75	22.28	21.04
0-50	24.75	22.28	21.04
0-100	24.75	22.28	21.04
0-150	24.75	22.28	21.04
0-200	24.75	22.28	21.04
0-300	24.75	22.28	21.04
0-500	24.75	22.28	21.04
15-0-15	26.10	23.49	22.19
30-0-30	26.10	23.49	22.19
50-0-50	26.10	23.49	22.19

MODEL 1329—4½″

0-1 Amps	$26.85	$24.17	$22.82
0-1.5	26.85	24.17	22.82
0-2	26.85	24.17	22.82
0-3	26.85	24.17	22.82
0-5	26.85	24.17	22.82
0-10	26.85	24.17	22.82
0-15	26.85	24.17	22.82
0-25	26.85	24.17	22.82
0-30	26.85	24.17	22.82
0-50	26.85	24.17	22.82
0-100	26.85	24.17	22.82
0-150	26.85	24.17	22.82
0-200	26.85	24.17	22.82
0-300	26.85	24.17	22.82
0-500	26.85	24.17	22.82
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

Self contained. Voltage drop, 150 mV or less.

MODEL 1212—1½″

0-1 mA	$22.05	$19.85	$18.74
0-3	—	—	—
0-5	22.05	19.85	18.74
0-10	22.05	19.85	18.74
0-15	22.05	19.85	18.74
0-20	—	—	—
0-25	23.10	20.79	19.64
0-50	23.10	20.79	19.64
0-100	23.10	20.79	19.64
0-150	23.10	20.79	19.64
0-200	23.10	20.79	19.64
0-250	23.10	20.79	19.64
0-300	23.10	20.79	19.64
0-500	23.10	20.79	19.64

MODEL 1227—2½″

0-1 mA	$23.25	$20.93	$19.76
0-3	23.25	20.93	19.76
0-5	23.25	20.93	19.76
0-10	23.25	20.93	19.76
0-15	23.25	20.93	19.76
0-20	23.25	20.93	19.76
0-25	23.70	21.33	20.15
0-50	23.70	21.33	20.15
0-100	23.70	21.33	20.15
0-150	23.70	21.33	20.15
0-200	23.70	21.33	20.15
0-250	23.70	21.33	20.15
0-300	23.70	21.33	20.15
0-500	23.70	21.33	20.15
0-750	—	—	—
0-1000	23.70	21.33	20.15

MODEL 1327—3½″

0-1 mA	$24.00	$21.60	$20.40
0-3	24.00	21.60	20.40
0-5	24.00	21.60	20.40
0-10	24.00	21.60	20.40
0-15	24.00	21.60	20.40
0-20	24.00	21.60	20.40
0-25	24.75	22.28	21.04
0-50	24.75	22.28	21.04
0-100	24.75	22.28	21.04
0-150	24.75	22.28	21.04
0-200	24.75	22.28	21.04
0-250	24.75	22.28	21.04
0-300	24.75	22.28	21.04
0-500	24.75	22.28	21.04
0-750	24.75	22.28	21.04
0-1000	24.75	22.28	21.04

MODEL 1329—4½″

0-1 mA	$25.65	$23.09	$21.80
0-3	25.65	23.09	21.80
0-5	25.65	23.09	21.80
0-10	25.65	23.09	21.80
0-15	25.65	23.09	21.80
0-20	25.65	23.09	21.80
0-25	26.85	24.17	22.82
0-50	26.85	24.17	22.82
0-100	26.85	24.17	22.82
0-150	26.85	24.17	22.82
0-200	26.85	24.17	22.82
0-250	26.85	24.17	22.82
0-300	26.85	24.17	22.82
0-500	26.85	24.17	22.82
0-750	26.85	24.17	22.82
0-1000	26.85	24.17	22.82

DC MICROAMMETERS—SELF-SHIELDED TAUT BAND METER MOVEMENT

MODEL 1212T—1½″

0-5 μA	—	—	—
0-10	—	—	—
0-15	$43.35	$39.02	$36.85
0-25	40.35	36.32	34.30
0-50	31.80	28.62	27.03
0-100	28.35	25.52	24.10
0-200	26.25	23.63	22.40

MODEL 1227T—2½″

0-5 μA	—	—	—
0-10	$47.70	$42.93	$40.55
0-15	43.35	39.02	36.85
0-25	41.25	37.13	35.06
0-50	32.40	29.16	27.54
0-100	29.40	26.46	24.99
0-200	27.60	24.84	23.46

MODEL 1327T—3½″

0-5 μA‡	$56.54	$50.89	$48.06
0-10	49.61	44.65	42.17
0-15	44.42	39.98	37.76
0-25	43.00	38.70	36.55
0-50	32.92	29.63	27.98
0-100	30.40	27.36	25.84
0-200	28.67	25.80	24.37

MODEL 1329T—4½″

0-5 μA‡	$60.01	$54.01	$51.01
0-10	53.71	48.34	45.65
0-15	48.35	43.52	41.10
0-25	46.78	42.10	39.76
0-50	35.44	31.90	30.12
0-100	41.95	37.76	35.66
0-200	31.66	28.49	26.91

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 1212—1½″

0-50 μA	$28.95	$26.06	$24.61
0-100	25.80	23.22	21.93
0-200	23.55	21.20	20.02
0-500	23.10	20.79	19.64
25-0-25	26.10	23.49	22.19
50-0-50	23.70	21.33	20.15
100-0-100	22.50	20.25	19.13
500-0-500			

MODEL 1227—1½″

0-50 μA	$29.85	$26.87	$25.37
0-100	26.85	24.17	22.82
0-200	24.30	21.87	20.66
0-500	24.00	21.60	20.40
25-0-25	—	—	—
50-0-50	27.30	24.57	23.21
100-0-100	24.75	22.28	21.04
500-0-500			

MODEL 1327—3½″

0-50 μA	$30.40	$27.36	$25.84
0-100	27.88	25.09	23.70
0-200	25.52	22.97	21.69
0-500	25.20	22.68	21.42
25-0-25	30.71	27.64	26.10
50-0-50	27.88	25.09	23.70
100-0-100	25.67	23.10	21.82
500-0-500	24.26	21.83	20.62

MODEL 1329—4½″

0-50 μA	$32.76	$29.48	$27.85
0-100	31.03	27.93	26.38
0-200	27.88	25.09	23.70
0-500	27.25	24.53	23.16
25-0-25	32.92	29.63	27.98
50-0-50	31.19	28.07	26.51
100-0-100	28.35	25.52	24.10
500-0-500	25.67	23.10	21.82

*2000 ohms/volt. †External multiplier furnished; all others self-contained. ‡High flux annular.

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. CONTINUED, NEXT PAGE

Simpson Wide-Vue Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DC MILLIVOLTMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 1212—1½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$23.10	$20.79	$19.64
50–0–50	—	—	—

MODEL 1227—2½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$23.70	$21.33	$20.15
50–0–50	—	—	—

MODEL 1327—3½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$24.75	$22.28	$21.04
50–0–50	24.75	22.28	21.04

MODEL 1329—4½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$26.85	$24.17	$22.82
50–0–50	26.85	24.17	22.82

DC GALVANOMETERS—SELF-SHIELDED METER MOVEMENT

Range	Sensitivity μA	Model 1212—1½″ Net Each, Lots of 1-9	10-24	25-49	Model 1227—2½″ Net Each, Lots of 1-9	10-24	25-49
50–0–50	500–0–500	$22.50	$20.25	$19.13	$23.25	$20.93	$19.76
50–0–50	75–0–75	23.70	21.33	20.15	25.20	22.68	21.42

Range	Sensitivity μA	Model 1327—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 1329—4½″ Net Each, Lots of 1-9	10-24	25-49
50–0–50	500–0–500	$27.30	$24.57	$23.21	$25.80	$23.22	$21.93
50–0–50	75–0–75	23.25	20.93	19.76	29.85	26.87	25.37

AC PANEL METERS—MODELS 1257, 1357, AND 1359

AC VOLTMETERS—IRON VANE TYPE MOVEMENT (SELF-CONTAINED EXCEPT 0-500 V)

MODEL 1257—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	—	—	—
0–10 or 0–15	$22.50	$20.25	$19.13
0–25 or 0–50	22.50	20.25	19.13
0–100	23.10	20.79	19.64
0–150	23.55	21.20	20.02
0–250 or 0–300	23.55	21.20	20.02
0–500	29.85	26.87	25.37

MODEL 1357—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$23.55	$21.20	$20.02
0–10 or 0–15	23.55	21.20	20.02
0–25 or 0–50	23.55	21.20	20.02
0–100	24.30	21.87	20.66
0–150	25.20	22.68	21.42
0–250 or 0–300	25.20	22.68	21.42
0–500	31.95	28.76	27.16

MODEL 1359—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$26.25	$23.63	$22.31
0–10 or 0–15	26.25	23.63	22.31
0–25 or 0–50	26.25	23.63	22.31
0–100	26.25	23.63	22.31
0–150	26.85	24.17	22.82
0–250 or 0–300	26.85	24.17	22.82
0–500	34.05	30.65	28.94

AC AMMETERS—IRON VANE TYPE MOVEMENT

The following meters are self contained: 2½″ through 50 amps, 3½″ and 4½″ through 75 amps. Higher range AC ammeters are 5-amp meters to be used with external current transformer.

MODEL 1257—2½″

Range Amps	Approx. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–1	.213	$21.30	$19.17	$18.11
0–1.5	.105	21.30	19.17	18.11
0–2	.065	—	—	—
0–3	.028	21.30	19.17	18.11
0–5	.008	21.30	19.17	18.11
0–10	.004	21.30	19.17	18.11
0–15	.0025	21.30	19.17	18.11
0–25	.002	22.05	19.85	18.74
0–30	.0015	22.05	19.85	18.74
0–50	.001	22.05	19.85	18.74
0–75	.008	—	—	—
0–100	.008	21.30	19.17	18.11
0–150	.008	21.30	19.17	18.11
0–200	.008	21.30	19.17	18.11
0–300	.008	21.30	19.17	18.11

MODEL 1357—3½″

Range Amps	Approx. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–1	.213	$22.50	$20.25	$19.13
0–1.5	.105	22.50	20.25	19.13
0–2	.065	22.50	20.25	19.13
0–3	.028	22.50	20.25	19.13
0–5	.008	22.50	20.25	19.13
0–10	.004	22.50	20.25	19.13
0–15	.0025	22.50	20.25	19.13
0–25	.002	23.25	20.93	19.76
0–30	.0015	23.25	20.93	19.76
0–50	.001	23.25	20.93	19.76
0–75	.008	25.20	22.68	21.42
0–100	.008	22.50	20.25	19.13
0–150	.008	22.50	20.25	19.13
0–200	.008	22.50	20.25	19.13
0–300	.008	22.50	20.25	19.13

MODEL 1359—4½″

Range Amps	Approx. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–1	.213	$23.85	$21.47	$20.27
0–1.5	.105	23.85	21.47	20.27
0–2	.065	23.85	21.47	20.27
0–3	.028	23.85	21.47	20.27
0–5	.008	23.85	21.47	20.27
0–10	.004	23.85	21.47	20.27
0–15	.0025	23.85	21.47	20.27
0–25	.002	24.75	22.28	21.04
0–30	.0015	24.75	22.28	21.04
0–50	.001	24.75	22.28	21.04
0–75	.008	26.85	24.17	22.82
0–100	.008	23.85	21.47	20.27
0–150	.008	23.85	21.47	20.27
0–200	.008	23.85	21.47	20.27
0–300	.008	23.85	21.47	20.27

AC MILLIAMMETERS—IRON VANE TYPE MOVEMENT—Ranges: 0–10, 0–50, 0–100, 0–250, 0–500 mA; specify.

MODEL 1257—2½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$21.30	$19.17	$18.11

MODEL 1357—3½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$22.50	$20.25	$19.13

MODEL 1359—4½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$23.85	$21.47	$20.27

DUAL-RANGE AC PANEL METERS, MODELS 1357 AND 1359, 0-150 AC VOLTS/0-5 AC AMPERES

Single instrument measures both volts and amps. For use in many common applications using an AC voltmeter and ammeter in pairs. Lets you save on panel space and purchasing cost. Can also measure extended AC current ranges through an accessory transformer. Available in 3½″ and 4½″ sizes, in Century Models and Wide-Vue.

Wide-Vue Dual-Range Meter Model No.	Size	Net Each, Lots of 1-9	10-24	25-49
1357	3½″	$32.10	$28.89	$27.29
1359	4½″	34.20	30.78	29.07

RECTIFIER TYPE AC VOLTMETERS—SELF-SHIELDED METER MOVEMENT—2,000 OHMS/VOLT RESISTANCE

MODEL 1214—1½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$31.80	$28.62	$27.03
0–10	31.80	28.62	27.03
0–15	—	—	—
0–50	—	—	—
0–150	31.80	28.62	27.03
0–300	31.80	28.62	27.03

MODEL 1247—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$29.40	$26.46	$24.99
0–10	29.40	26.46	24.99
0–15	—	—	—
0–50	—	—	—
0–150	29.40	26.46	24.99
0–300	29.40	26.46	24.99

MODEL 1347—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$33.60	$30.24	$28.56
0–10	33.60	30.24	28.56
0–15	33.60	30.24	28.56
0–50	33.60	30.24	28.56
0–150	33.60	30.24	28.56
0–300	33.60	30.24	28.56

MODEL 1349—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$37.20	$33.48	$31.62
0–10	37.20	33.48	31.62
0–15	37.20	33.48	31.62
0–50	37.20	33.48	31.62
0–150	37.20	33.48	31.62
0–300	37.20	33.48	31.62

VOLUME LEVEL INDICATORS—SELF-SHIELDED METER MOVEMENT

Range	Model 1214—1½″ Net Each, Lots of 1-9	10-24	25-49	Model 1247—2½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	—	—	—	$32.85	$29.57	$27.92
A Scale VU†	$35.40	$31.86	$30.09	39.00	35.10	33.15
B Scale VU†	—	—	—	—	—	—

Range	Model 1347—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 1349—4½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	$34.95	$31.46	$29.71	$36.00	$32.40	$30.60
A Scale VU†	39.75	35.78	33.79	43.35	39.02	36.85
B Scale VU†	39.75	35.78	33.79	43.35	39.02	36.85

*Reference level, 1 mW 600-ohm line. †Reference level, 1 mW 600-ohm line; meet all electrical and ballistic specifications by Bell Labs and ASA as required by broadcasting, communication and sound engineers. Impedance 3900 ohms at "0" VU deflection.

RF AMMETERS—SELF-SHIELDED METER MOVEMENT

Range	Approx. Resis., Ohms	Model 1337—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 1339—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1	.343	$28.35	$25.52	$24.10	$32.40	$29.16	$27.54
0–1.5	.200	28.35	25.52	24.10	32.40	29.16	27.54
0–2	.120	28.35	25.52	24.10	32.40	29.16	27.54
0–2.5	.10	28.35	25.52	24.10	32.40	29.16	27.54
0–3	.08	28.35	25.52	24.20	32.40	29.16	27.54
0–5	.045	28.35	25.52	24.10	32.40	29.16	27.54
0–8	.031	28.35	25.52	24.10	32.40	29.16	27.54
0–10	.023	28.35	25.52	24.10	32.40	29.16	27.54

WATTMETERS—MODEL 1379—4½″

DYNAMOMETER TYPE SINGLE PHASE

Range Watts	Range Volts	Max. Amps	Net Each, Lots of 1-9	10-24	25-49
0–75	150	1.0	$61.65	$55.49	$52.40
0–150	150	2.0	61.65	55.49	52.40
0–300	150	4.0	61.65	55.49	52.40
0–750	150	10.0	61.65	55.49	52.40
0–600	300	4.0	65.70	59.13	55.85
0–1500	300	10.0	65.70	59.13	55.85
0–3000	300	20.0	65.70	59.13	55.85

COMPENSATED TYPE

0–10	300	.175	$82.35	$74.12	$70.00
0–20	300	.400	82.35	74.12	70.00
0–30	300	.650	82.35	74.12	70.00

RF MILLIAMMETERS

0–500	.63	$33.39	$30.05	$28.38	$37.64	$33.88	$31.99

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY.

Simpson Special Panel Meters

INSTRUMENTS THAT STAY ACCURATE

"RUGGED SEAL" PANEL METERS

Metal-cased panel instruments ideal for use in field test equipment or where rigorous environments are encountered. Completely sealed, commercially ruggedized, metal cased and shielded against steel panel mounting. External magnet movement.

Standard Metal-Cased Meters: AC meters are rectifier type with ±3% of full scale accuracy at 25° C and 60 Hz sine wave. AC ammeters maintain accuracy over 55–125 Hz range; other AC meters over 25–2500 Hz range. DC meters have ±2% of full scale accuracy.

Segmental Metal-Cased Meters: Measure very small changes in input with segmental voltmeters and frequency meters. Significant portion is expanded to occupy the full scale length.

Expanded-Scale Type Meter	Freq. Range, Hz	Sensitivity Ohms/Volt	Waveform Influence		Max. Input Volt. V rms (10 sec)
			Squarewave	Triangular	
AC Voltmeters‡	55–550	50, 65, 80*	2.5, 2, 1%*	1.2, .6, .3%*	150
DC Voltmeters	.....	100	.....	.....	40†
Frequency Meters	.....	3 VA max.	.1% max.	.1% max.	140

*For 100–130, 105–125 and 110–120 V ranges respectively. †Volts max. input. ‡Rms sensing.

A

B

C

METER SIZES

Size	Fig.	Model	Size, Inches
2½"	B	3282	2.695 dia. flange; body 2.21 dia. x 2.0 d.
	B	3222	2.695 dia. flange; body 2.21 dia. x 1.60 d.
3½"	B	3223	3.51 dia. flange; body 2.80 dia. x 1.66 d.
	B	3283	3.51 dia. flange; body 2.80 dia. x 3.16 d.
	A	3323, 3343	3.25 sq.; body 2.69 dia. x 1.23 d.
	A	3383	3.25 sq.; body 2.72 dia. x 3.56 d.
4½"	B	3224	4.60 dia. flange; body 3.76 dia. x 1.51 d.
	B	3284	4.60 dia. flange; body 3.76 dia. x 3.83 d.
	A	3324, 3344	4.68 x 4.15; body 2.69 dia. x 1.21 d.
	A	3384	4.68 x 4.15; body 2.72 dia. x 3.56 d.
4" x 6"	C	3326, 3346	5.84 x 4.62; body 2.69 dia. x 1.19 d.
	C	3386	5.84 x 4.62; body 2.72 dia. x 3.56 d.

DC MODELS 3323, 3324 AND 3326

DC VOLTMETERS

Ranges Available: 0–1.5, 0–10, 0–15, 0–25, 0–50, 0–100, 0–500.

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
Any	1000	3323	3½"	$28.20	$25.38	$23.97
Value,	per	3324	4½"	30.75	27.67	26.14
Above	Volt	3326	4" x 6"	33.60	30.24	28.56

DC MILLIVOLTMETERS

0–50 mV	10	3323	3½"	$28.35	$25.52	$24.10
		3324	4½"	31.20	28.08	26.52
		3326	4" x 6"	34.20	30.78	29.07

DC MILLIAMMETERS

0–1 mA	80	3323	3½"	$27.15	$24.43	$23.08
		3324	4½"	29.40	26.46	24.99
		3326	4" x 6"	32.85	29.56	27.92
0–100mA	.5	3323	3½"	29.10	26.19	24.73
		3326	4" x 6"	34.35	30.91	29.20

DC MICROAMMETERS

0–50 μA	3000	3323	3½"	$36.30	$32.67	$30.85
		3324	4½"	39.00	35.10	33.15
		3326	4" x 6"	42.45	38.20	36.08
0–100 μA	1300	3323	3½"	33.00	29.70	28.05
		3324	4½"	35.55	31.99	30.22
		3326	4" x 6"	39.30	35.37	33.40

DC AMMETERS

Range, Amps	Internal Shunt	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–5	75	3323	3½"	$28.80	$25.92	$24.48
or	mV	3324	4½"	31.05	27.94	26.39
0–10	max.	3326	4" x 6"	34.35	30.91	29.20

EXPANDED-SCALE SEGMENTAL FREQUENCY METERS

Accuracy: ±0.25%, checked at center scale frequency at 25° C and 115 volts sine wave after 30-minute warmup; after 1-minute warmup, 1.0%; at end scale, maximum error is 0.5%.

Range, Hz	Center, Hz	Model	Size	Net Each, Lots of 1-9	10-24	25-49
		3283	3½" rd.	$247.05	$222.34	$209.99
		3284	4½" rd.	258.60	232.74	219.81
380–420	400	3383	3½" sq.	240.90	216.81	204.76
		3384	4½" sq.	247.80	223.02	210.63
		3386	4" x 6"	255.00	229.50	216.75

AC MODELS 3343, 3344 AND 3346

AC VOLTMETERS—RECTIFIER TYPE

Range, Volts	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–150	1000	3343	3½"	$33.90	$30.51	$28.81
or	per	3344	4½"	35.85	32.26	30.47
0–300	Volt	3346	4" x 6"	39.30	35.37	33.40

AC AMMETERS—RECTIFIER TYPE

Range, Amps	Internal Trans. Burden	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–1	0.5	3343	3½"	$42.30	$38.07	$35.95
or	VA	3344	4½"	43.95	39.55	37.36
0–5	max.	3346	4" x 6"	47.70	42.93	40.54

AC MILLIAMMETERS—RECTIFIER TYPE

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–1 mA	600	3343	3½"	$33.60	$30.24	$28.56
		3344	4½"	35.55	31.99	30.22
		3346	4" x 6"	42.30	38.07	35.95

AC MICROAMMETERS—RECTIFIER TYPE

0–100 μA	4000	3343	3½"	$35.55	$31.99	$30.22
		3344	4½"	37.05	33.35	31.49
		3346	4" x 6"	40.20	36.18	34.17

EXPANDED-SCALE SEGMENTAL AC VOLTMETERS

Center Scale: 115 volts, all models.

Range, Volts	Accuracy*	Model	Size	Net Each, Lots of 1-9	10-24	25-49
		3282	2½" rd.	$113.70	$102.33	$96.64
100–130	±1.0%	3283	3½" rd.	104.70	94.23	88.99
105–125	±0.5%	3284	4½" rd.	116.25	104.62	98.81
or		3383	3½" sq.	95.85	86.26	81.47
110–120	±0.3%	3384	4½" sq.	105.60	95.04	89.76
		3386	4" x 6"	112.95	101.65	96.01

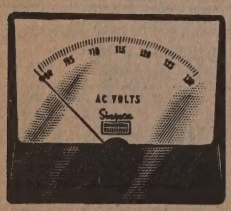
EXPANDED SCALE SEGMENTAL DC VOLTMETERS

Center Scale: 27 volts.

		3222	2½" rd.	$97.35	$87.61	$82.75
		3223	3½" rd.	88.95	80.05	75.61
24–30	±0.5%	3224	4½" rd.	99.90	89.91	84.91
		3323	3½" sq.	80.10	72.09	68.08
		3324	4½" sq.	89.85	80.86	76.37
		3326	4" x 6"	96.60	86.94	82.11

*Accuracy is in percent of center scale value.

SEGMENTAL VOLTMETERS



Models 1347, 1349

Self-shielding movement. Has four mounting studs. Possible to measure small changes in input conditions. **Frequency Range:** Single, 20–2000 Hz; Multi, 50–1000 Hz. **Sensitivity:** .6–1.3 VA, decreases as input voltage increases. **Range:** Single 100–130 VAC; Multi, 100–130; 200–260; 400–520 VAC. **Input Voltage (max.):** Single, 150 V rms (10 sec); Multi, 150, 300, 600 V rms (10 sec) per range respectively. **Waveform Influence:** Squarewave, 11%; Triangular, 5%. **Size:** Model 1349, 4.68" x 4.0" flange, body 2.75" dia. x 1.08" d.; Model 1347, 3.25" sq. flange, body 2.73" dia. x 1.08" d.; Model 49, 4.66" x 4.2" flange, body 2.75" dia. x 1" d. Model 2143, 3" sq. flange, body 2.69" dia. x 1.34" d.; Model 2144, 4.66" x 4.2" flange, body 2.69" dia. x 1.34" d. Bakelite* case.

WIDE-VUE TYPES

Model	Size	Net Each, Lots of 1-9	10-24	25-49
1347	3½"	$73.20	$65.88	$62.22
1349	4½"	73.65	66.28	62.60
1349*	4½"	90.90	81.81	77.26
2143†	3½"	73.20	65.88	62.22
2144†	4½"	73.65	66.28	62.60
2144*†	4½"	90.90	81.81	77.26

RECTANGULAR TYPE

49	4½"	$73.65	$66.28	$62.60

*Multi-range type; with external potential transformer. †Century design. *Registered Bakelite Corp. TM.

MOUNTING BEZEL AND ILLUMINATION KIT

FOR "WIDE-VUE" PANEL METERS

Mounting bezels add modern streamlined appearance to Wide-Vue panel meters (listed on another Simpson page). Groove and flange construction of diecast metal with satin black finish. For behind-panel mounting on panels ⅛" to 3/16" thick. With brackets, screws and template. Illumination kit is for 3½" and 4½" models.

Meter Size	For "Wide-Vue" Models	Net Each, Lots of 1-9	10-24	25-49
3½"	1327, 1337, 1347, 1357	$2.85	$2.56	$2.42
4½"	1329, 1339, 1349, 1359 and 1379	2.85	2.56	2.42
.....	Illum. Kit	2.70	2.43	2.30

Simpson Special Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DESIGNER SERIES PANEL METERS

Molded black phenolic-cased panel meters for compact equipment designs. Clean, professional styling. All have self-shielded spring backed jewel movement with ±2% accuracy and utilize maximum scale length for full readability. **Size:** Models 523, 543 and 553: 3.95″ w. x 1.81″ d. (behind panel) x 2.67″ h.; mtg. ctrs., 2.936″. Models 524, 544 and 554: 4½″ w. x 1.81″ d. (behind panel) x 2.9″ h.; mtg. ctrs., 3½″. All models supplied with necessary mounting and terminal hardware. Knife-edge pointer.

DC VOLTMETERS

Range	Model 523—3½″ Net Each, Lots of			Model 524—4½″ Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
0–5 V	$25.65	$23.08	$21.80	$27.90	$25.11	$23.71
0–10	25.65	23.08	21.80	27.90	25.11	23.71
0–15	25.65	23.08	21.80	27.90	25.11	23.71
0–30	25.65	23.08	21.80	27.90	25.11	23.71
0–50	25.65	23.08	21.80	27.90	25.11	23.71
0–100	25.65	23.08	21.80	27.90	25.11	23.71
0–150	25.65	23.08	21.80	27.90	25.11	23.71

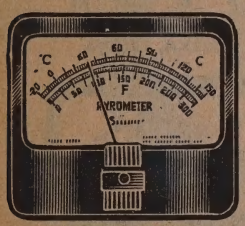
DC MILLIVOLTMETERS

0–50 mV	$24.30	$21.87	$20.66	$26.85	$24.16	$22.82

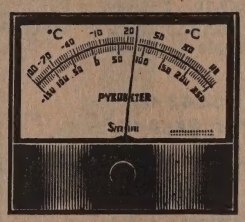
DC AMMETERS

0–1 A	$24.75	$22.27	$21.04	$26.85	$24.16	$22.82
0–3	24.75	22.27	21.04	26.85	24.16	22.82
0–5	24.75	22.27	21.04	26.85	24.16	22.82
0–10	24.75	22.27	21.04	26.85	24.16	22.82
0–15	24.75	22.27	21.04	26.85	24.16	22.82
0–25	24.75	22.27	21.04	26.85	24.16	22.82
0–50	24.75	22.27	21.04	26.85	24.16	22.82

PYROMETERS AND THERMOCOUPLES



Model 29



Model 3324

PYROMETERS

Fully compensated for ambient temperature changes and include copper circuit compensation. Calibrated for use with Simpson iron constantan thermocouples which are available as accessory items. Pyrometers with 0° F to +300° F range are calibrated for 5-ohm thermocouple resistance; all others for 10 ohms. Each pyrometer is supplied with an external, adjustable series resistor to permit use of lower resistance thermocouples in the field. Accuracy: 2%. Size: Model 29, 4.66″ w. x 1.70″ d. (behind panel) x 4.20″ h.; mtg. ctrs., 4″ x 3.56″. Model 3324, 4.68″ w. x 1.89″ d. (behind panel) x 4.15″ h.; mtg. centers, 4″ x 3.56″.

STANDARD BAKELITE® MODEL 29

Model No.	Temperature Range °F	Temperature Range °C	Res., Ohms*	Net Each, Lots of 1-9	10-24	25-49
21200	−150 to +250	−100 to +120	10	$42.30	$38.07	$35.96
21202	0–300	−20 to +150	5	42.30	38.07	35.96
21204	0–500	−20 to +260	10	42.30	38.07	35.96
21206	0–750	−20 to +400	10	42.30	38.07	35.96
21208	0–1000	−20 to +540	10	42.30	38.07	35.96
21209	0–1500	−20 to +820	10	39.30	35.37	33.41
21210	0–2000	−20 to +1200	10	39.30	35.37	33.41
21211	0–2500	−20 to +1380	10	39.30	35.37	33.41

RUGGED SEAL MODEL 3324

21201	−150 to +250	−100 to +120	10	$57.60	$51.84	$48.96
21203	0–300	−20 to +150	5	57.60	51.84	48.96
21205	0–500	−20 to +260	10	57.60	51.84	48.96
21207	0–750	−20 to +400	10	57.60	51.84	48.96
21212	0–1000	−20 to +540	10	57.60	51.84	48.96
21213	0–1500	−20 to +820	10	54.60	49.14	46.41
21214	0–2000	−20 to +1200	10	54.60	49.14	46.41
21215	0–2500	−20 to +1380	10	54.60	49.14	46.41

*Max., external. ®Bakelite Corp. trademark.

IRON CONSTANTAN THERMOCOUPLES

Stainless steel overbraid for extra-rugged service, or glass cloth for general purpose or permanent mtg. in protected sheaths. Pyrometers for 0–300° F take 5-ohm; all others, 10-ohm.

Model No.	Res., Ohms	Overbraid	Length Inches	Ga.	Net Each, Lots of 1-9	10-24	25-49
21221	5	Stainless steel	162	20	$19.35	$17.41	$16.45
21222	10	Glass cloth	137	24	7.05	6.34	5.99
21223	10	Glass cloth	34	30	5.85	5.26	4.97
21224	10	Stainless steel	325	20	35.10	31.59	29.83

DC MILLIAMMETERS

Range	Model 523—3½″ Net Each, Lots of			Model 524—4½″ Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
0–1 mA	$24.00	$21.60	$20.40	$25.65	$23.08	$21.80
0–5	24.00	21.60	20.40	25.65	23.08	21.80
0–10	24.00	21.60	20.40	25.65	23.08	21.80
0–50	24.75	22.28	21.04	26.85	24.16	22.82
0–100	24.75	22.28	21.04	26.85	24.16	22.82
0–200	24.75	22.28	21.04	26.85	24.16	22.82
0–300	24.75	22.28	21.04	26.85	24.16	22.82
0–500	24.75	22.28	21.04	26.85	24.16	22.82

DC MICROAMMETERS

0–15 μA*	$44.10	$39.69	$37.48	$48.45	$43.61	$41.18
0–25	37.65	33.88	32.00	41.55	37.39	35.32
0–50	30.45	27.40	25.88	32.85	29.56	27.92
0–100	27.90	25.11	23.71	31.05	27.94	26.39
0–200	25.65	23.08	21.80	27.90	25.11	23.71
0–500	25.20	22.68	21.42	27.30	24.57	23.20
25–0–25	30.75	27.68	26.14	33.00	29.70	28.05
50–0–50	27.90	25.11	23.71	31.20	28.08	26.52
100–0–100	25.80	23.22	21.93	28.35	25.52	24.10
500–0–500	24.30	21.87	20.66	25.80	23.22	21.93

*Taut band.

AC VOLTMETERS

Range	Model 553—3½″ Net Each, Lots of			Model 554—4½″ Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
0–150 V	$25.20	$22.68	$21.42	$26.85	$24.16	$22.82
0–250	25.20	22.68	21.42	26.85	24.16	22.82
0–300	25.20	22.68	21.42	26.85	24.16	22.82

AC AMMETERS

0–1 A	$22.50	$20.25	$19.12	$26.10	$23.49	$22.18
0–5	22.50	20.25	19.12	26.10	23.49	22.18
0–10	22.50	20.25	19.12	26.10	23.49	22.18
0–15	22.50	20.25	19.12	26.10	23.49	22.18
0–25	22.50	20.25	19.12	26.85	24.16	22.82
0–50	22.50	20.25	19.12	26.85	24.16	22.82
0–100	22.50	20.25	19.12	26.10	23.49	22.18
0–150	22.50	20.25	19.12	26.10	23.49	22.18

VOLUME LEVEL INDICATOR

Range, VU	Model 543—3½″ Net Each, Lots of			Model 544—4½″ Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
"A" Scale	$37.80	$34.02	$32.13	$43.35	$39.01	$36.85
"A" Scale*	43.80	39.42	37.23	47.25	42.52	40.16
"B" Scale*	43.80	39.42	37.23	47.25	42.52	40.16

*Illuminated.

ELAPSED TIME METERS

55ET

57ET

1357ET

2153ET

New model 108ET supplied with separate round and square interchangeable metal bezels; operating temp., −55° to +85° C; convex glass window solder-sealed to case; 5-digit readout. Model 1357ET matches Wide-Vue meters. Model 2153ET matches Century Series panel meters. Models 55ET and 57ET are similar to standard 3½″ meters. Uses self-starting synchronous clock motors. **Size:** Model 108ET, 2.675″ dia. round flange (sim. to 55ET), 2.75″ sq. flange (sim. to 57ET), body 2.14″ dia. x 2.368″ deep, three mtg. studs; Model 1357ET, 3.25″ sq. flange, body 2.75″ dia. x 2.37″ deep, four mtg. studs; Model 2153ET, 3″ sq. flange, body 2.69″ dia. x 1.34″ deep, four mtg. studs; Model 55ET, 3½″ dia. flange, body 2.75″ dia. x 2.55″ deep, three mtg. holes; Model 57ET, 3.00″ w. x 3.12″ h. flange, body 2.75″ dia. x 2.60″ deep, four mtg. studs.

Model	Oper. Volts	Size	Max. Hour Indication	Net Each, Lots of 1-9	10-24	25-49
108ET	120 VAC	2½″	9999.9	$49.05	$44.14	$41.69
1357ET	120 VAC	3½″	99999.9	29.55	26.59	25.12
1357ET	240 VAC	3½″	99999.9	29.85	26.86	25.37
2153ET	120 VAC	3½″	99999.9	21.30	19.17	18.10
2153ET	240 VAC	3½″	99999.9	29.85	26.86	25.37
55ET	120 VAC	3½″	99999.9	29.55	26.59	25.12
55ET	240 VAC	3½″	99999.9	29.85	26.86	25.37
57ET	120 VAC	3½″	99999.9	29.55	26.59	25.12
57ET	240 VAC	3½″	99999.9	29.85	26.86	25.37

Simpson Meter Relays, Accessories

INSTRUMENTS THAT STAY ACCURATE

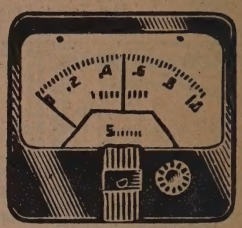
RUGGED SEAL CONTACTLESS METER RELAYS

Set points are 100% (single), 90% (dual) adjustable on scale by front panel knobs thru a gear drive; indication, by separate lance pointers, within 1% of actual switching. Sensing is done through an infinite life lamp and photoconductors. Solid state switching circuit and DPDT slave relay provided internally for each control point; both slaves open in case of power failure. Slaves will switch to 10 amps per set of contacts at 115 VAC. **Power Required:** 115 VAC, 50–500 Hz. DC required for sensing and switching is provided by external power module furnished with dual control models; self-contained, single control models. **Size:** (Single Control Models) 3½″ units, 3.25″ sq. x 2.20″ d. behind panel; 4½″ models, 4.68″ w. x 4.15″ h. x 2.20″ d. behind panel; 4″ x 6″ models, 5.84″ w. x 4.62″ h. x 2.20″ d. behind panel.

Range	3½″ Single Control* Net Each, Lots 1-9*		4½″ Single Control* Net Each, Lots 1-9*		4″ x 6″ Single Cont.* Net Each, Lots 1-9*	
	3323XA Pivot & Jewel	3323TXA Taut Band	3324XA Pivot & Jewel	3324TXA Taut Band	3326XA Pivot & Jewel	3326TXA Taut Band
0–10 μADC	.....	$150.00	.....	$152.10	.....	$156.00
0–25 μADC	.....	137.10	.....	.....	.....	143.10
0–50 μADC	.....	129.00	.....	131.10	.....	135.00
0–100 μADC	.....	125.10	.....	127.05	.....	131.10
0–200 μADC	.....	.....	$128.10	.....	.....	.....
0–500 μADC	.....	.....	124.05	.....	.....	.....
0–1 mADC	120.00	.....	122.10	.....	126.00	.....
0–50 mVDC	123.00	.....	125.10	.....	129.00	.....
0–5 AAC	.....	.....	140.10	.....	.....	.....
0–10 VAC	.....	.....	130.05	.....	.....	.....

*For dual control, add $33.00 to price shown except: †add $33.45. §Model 3344XA. ***Larger quantity prices on request.**

3326TXA Contactless Type



29XA Contactless Type

RUGGED SEAL TEMPERATURE CONTROL METER RELAYS

Contactless type, as above; thermocouples not supplied. 4½″ meter.

Range	Approx. Resis., Ohms	Model 3324XA 4½″ Net Each, Lots 1-9* Single Control	Dual Control	Range	Approx. Resis., Ohms	Model 3324XA 4½″ Net Each, Lots 1-9* Single Control	Dual Control
−150° to +300° F	10	$143.10	$176.10	0° to +1000° F	10	$140.10	$173.10
0° to +300° F	10	143.10	176.10	0° to +1500° F	10*	140.10	173.10
0° to +500° F	10	140.10	173.10	0° to +2000° F	10	140.10	173.10
0° to +750° F	10	140.10	173.10	0° to +2500° F	10	140.10	173.10

*Requires C/A type thermocouple; all others require I/C type thermocouple (listed on another page). ***Larger quantity prices on request.**

3623XA, 3643XA

MODELS 29XA AND 49XA CONTACTLESS METER RELAYS

Feature contactless control point sensing for high control accuracy, smaller "dead band", absolute freedom from interference with indicating meter. Solid state high gain amplifier for maximum reliability. Self-shielding annular movement. DPDT relay contacts for each control point, rated 10 amps at 115 VAC. **Accuracy:** ±2% of full scale. **Control Point Adjustment:** 0–100% of arc. Double control types have low limit of 0–95% of arc, high limit 95–100% of arc. **Control Point Switching:** Within 1% of indication. **Control Point Differential:** Within 0.5% of full scale. **Differential:** Difference between "on" and "off", within 0.5% of full scale. **Size:** 4.66″ x 4.21″; body, 2.72″ dia. x 4.25″ deep.

Range	Model	Net Each, Lots 1-9* Single Control	Dual Control
0–10 μA DC	29TXA*	$137.10	$170.10
0–25 μA DC	29TXA*	124.05	157.05
0–50 μA DC	29TXA*	116.10	149.10
0–100 μA DC	29TXA*	112.05	145.05
0–200 μA DC	29XA	113.10	146.10
0–500 μA DC	29XA	109.05	142.05
0–1 mA DC	29XA	107.10	140.10
0–50 mV DC	29XA	110.10	143.10
0–5 Amps AC	49XA	125.10	158.10
0–10 V AC	49XA	115.05	148.05

*Taut band types. ***Larger quantity prices on request.**

MODELS 3623XA, 3643XA CONTACTLESS METER RELAYS

Single and double set point models with mode indication lamps; each set point has SPDT relay rated 5 A resistive, 115 VAC, 50–500 Hz per pole; removable set point knobs to prevent tampering; relays are field-replaceable. **Power Ratings:** 4 VA max. single set point, 6 VA max. double set point; life, 1,000,000 operations. **Set Points:** Single, 0–100% of full scale; double, 0–98% low and 2–100% high, can be set within 2° of each other; control switching within 1.0% of set points; dead band less than 0.5% of full scale. Also available as temperature controller or as photocell output meter relay.

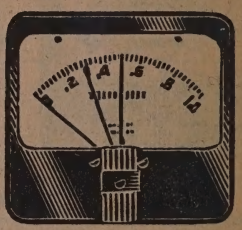
3623XA DC METER RELAYS

Model	Scale	Net Each, Lots of 1-9	10-24	25-49
16839	0–50 μA	$131.10	$117.99	$111.44
16840*	0–50 μA	164.10	147.69	139.49
16841	0–100 μA	127.05	114.35	107.99
16842*	0–100 μA	160.05	144.05	136.04
16847	0–1 mA	122.10	109.89	103.79
16848*	0–1 mA	155.10	139.59	131.84
16849	0–50 mV	125.10	112.59	106.34
16850*	0–50 mV	158.10	142.29	134.39

3643XA AC METER RELAYS

16851	0–5 A	$140.10	$126.09	$119.09
16852*	0–5 A	173.10	155.79	147.14
16853	0–10 V	130.05	117.05	110.54
16854*	0–10 V	163.05	146.75	138.59
16855	0–150 V	130.05	117.05	110.54
16856*	0–150 V	163.05	146.75	138.59

*Double set point meters; all others have single set points.



29XA Contact Type

29XA CONTACT METER RELAYS

D'Arsonval movement. **Contacts:** Externally adjustable over 95° of 100° scale arc, within 5° of each other. Non-locking; for use in circuits with external locking provisions or in non-locking uses. Will close within 2% and break within 10% of full scale value. Gold alloy. For use at 15 VDC 10 mA max. on resistive or diode protected inductive loads. **Accuracy:** ±2% of full scale. **Insulation Breakdown:** 300 VAC from relay contacts to meter circuit; 3 kV AC, relay terminals to mounting panel (all at 60 Hz). **Size:** 4.66″ x 4.21″; body, 2.77″ dia. x 0.99″ deep.

Range	Model No.	Net Each, Lots of 1-9	10-24	25-49
0–50 μA	7032	$64.05	$57.65	$54.44
0–100 μA	7034	63.00	56.70	53.55
0–200 μA	7036	62.10	55.89	52.79
0–500 μA	7038	60.00	54.00	51.00
0–1 mA	7040	59.10	53.19	50.24
0–50 mV	7050	61.05	54.95	51.89

MODEL 186 CURRENT TRANSFORMERS FOR CONTACTLESS METER RELAYS

Convert 0–10 volt Model 3344XA, above, to AC current control unit. Frequency Range, 30 Hz to 5 kHz. Accuracy, ±2%.

Model	Range	VA	Net Each, Lots of 1-9	10-24	25-49	Model	Range	VA	Net Each, Lots of 1-9	10-24	25-49
01294	0–50 mA	0.40	$18.75	$16.88	$15.94	01312	0–5 amp	0.75	$15.60	$14.04	$13.26
01295	0–100 mA	0.50	17.40	15.66	14.79	01314	0–10 amp	1.45	15.60	14.04	13.26
01296	0–200 mA	0.37	17.40	15.66	14.79	01315	0–15 amp	1.05	15.60	14.04	13.26
01303	0–300 mA	0.48	17.40	15.66	14.79	01316	0–20 amp	1.04	15.60	14.04	13.26
01304	0–500 mA	0.53	17.40	15.66	14.79	01317	0–25 amp	1.50	15.60	14.04	13.26
01307	0–750 mA	0.37	17.40	15.66	14.79	01318	0–30 amp	1.10	15.60	14.04	13.26
01308	0–1 amp	0.42	15.60	14.04	13.26	01319	0–40 amp	1.09	15.60	14.04	13.26
01309	0–2 amp	0.54	15.60	14.04	13.26	01321	0–50 amp	1.90	15.60	14.04	13.26
01311	0–3 amp	0.66	15.60	14.04	13.26						

Simpson Meter Relays and Panel Meters

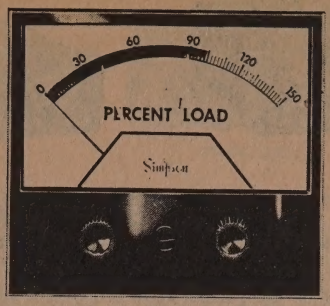
INSTRUMENTS THAT STAY ACCURATE

4½" MOTOR-LOAD METER RELAYS

Motor-load meter relays for monitoring motor current for overload and/or no-load conditions; hence meter is protected from costly burn-outs or other damages. Scale on 0–150% ranges are green (0–100%) and red (100–150%); scales on other ranges show motor load in AC amps.

Scale	Rating	Single Control-Point‡ Model	Single Control-Point‡ Net Each	Double Control-Point Model	Double Control-Point Net Each
0–150%*	10 VAC	21298	$145.05	21299	$178.05
0–150%†	5 amp AC	21296	135.90	21297	168.00
0–1 amp*	10 VAC	21301	140.10	21300	173.10
0–3 amp*	10 VAC	21303	140.10	21302	173.10
0–10 amp*	10 VAC	21305	140.10	21304	173.10
0–25 amp*	10 VAC	21307	140.10	21306	173.10
0–40 amp*	10 VAC	21309	140.10	21308	173.10
0–50 amp†	5 amp AC	21311	150.00	21310	183.00
0–100 amp†	5 amp AC	21313	150.00	21312	183.00
0–150 amp†	5 amp AC	21315	150.00	21314	183.00
0–200 amp†	5 amp AC	21317	150.00	21316	183.00
0–250 amp†	5 amp AC	21319	150.00	21318	183.00
0–300 amp†	5 amp AC	21321	150.00	21320	183.00
0–400 amp†	5 amp AC	21323	150.00	21322	183.00
0–500 amp†	5 amp AC	21325	150.00	21324	183.00

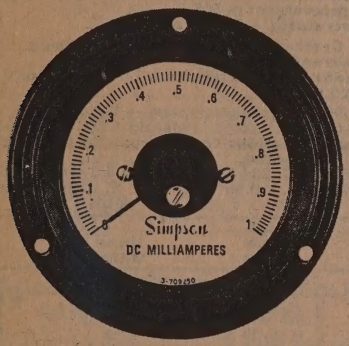
*Use with Model 186 current transformer. †Use with donut type current transformer. ‡High-limit.



SPECIFICATIONS

Calibration Accuracy: ±2% of full scale.
Control Points Adjustment: 0–100% of arc for single; 0–95% of arc for double low-limit; 5–100% of arc for double high-limit; all controls adjustable to within 4° of each other.
Switching: Within 1% of indication.
Differential: "On", "Off" difference is within 0.5% of full scale.
Contacts/Output Relay: DPDT relay contacts for each control point; each set of contacts rated at 10 amps, 115 VAC.
Movement: Self-shielding annular.
Power: 115 VAC, 50–500 Hz.
Case: Sealed metal case, glass window.

250° LONG-SCALE METERS



DC Milliammeter

Designed for applications that require high-accuracy readings, 250° panel meters provide more than double the scale length of the standard 90° or 100° movements. They are self-shielded, permanent magnet, moving coil instruments with non-magnetic pivots and spring-backed jewels. Cases are sealed per MIL-M-10304. External front access zero adjust. Red, knife edge type pointer. **Accuracy:** DC, 2% of full scale; AC, 3% of full scale. **Scale Length:** 4.77" for 3½" meters; 6.54" for 4½" meters.

DC MICROAMMETERS

Range	Resis., Ohms	3½" Model 2523 Model	3½" Model 2523 Net Each	4½" Model 2524 Model	4½" Model 2524 Net Each
0–50 μA	8000	17970	$59.55	17980	$63.30
0–100	4200	17971	57.60	17981	61.05
0–500	340	17972	52.05	17982	55.50

DC MILLIAMMETERS

0–1 mA	135	17973	$48.75	17983	$52.20
0–10	10	17974	48.75	17984	52.20
0–500	0.2	17975	51.15	17985	54.60
1–0–1	.....	17996	48.75	17997	52.05

DC AMMETER

0–10 V	.005	17976	$51.15	17986	$54.60

DC MILLIVOLTMETERS

0–50 mA	10	17977	$51.30	17987	$54.75

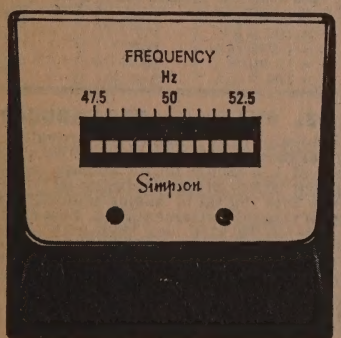
AC VOLTMETERS—RECTIFIER TYPE

Range	Resis., Ohms/Volt	3½" Model 2543 Model	3½" Model 2543 Net Each	4½" Model 2544 Model	4½" Model 2544 Net Each
0–10 V	2000	17990	$64.20	17995	$67.65
0–150	2000	17978	64.20	17988	67.65
0–300	2000	17979	62.20	17989	67.40

AC AMMETERS

The 0–10 VAC rectifier-type voltmeters above may be used with current transformer Model 186 to provide 17 common AC ammeter ranges from 0–50 mA to 0–50 amps. Prices on request.

RESONANT REED-TYPE FREQUENCY METERS



Model 1367, 3½" Wide-View

Frequency meters use tuned steel reeds for indicating AC frequency. Vibrating (resonant) reed is both the measuring and indicating element. Accuracy is virtually unaffected by wide changes in signal magnitude, phase or waveform and is basically dependent on only one component, the reed, whose calibration is inherently stable. With one moving part, construction is simple and sturdy. **Frequency:** 50, 60 or 400 Hz nominal. **Number of Reeds:** 11 (general purpose); 21 (high resolution). **Accuracy:** ±0.3% of mid-scale. **Temperature Coefficient:** −0.017% per °C max. **Operating Voltage:** 100 to 150 VAC. **Power Consumption:** 2 watts max. **Power Required:** 2 VA.

3½" CENTURY MODEL 2163

Model	Hz Rating	No. of Reeds	Hz Between Reeds	Net Each
03493	45–50–55	11	1	$51.00
03490	47.5–50–52.5	11	.5	53.55
03496	55–60–65	11	1	51.00
03491	57.5–60–62.5	11	.5	53.55
03492	380–400–420	11	4	55.95
03494	55–60–65	21	.5	60.75
03495	380–400–420	21	2	64.35

3½" WIDE-VUE MODEL 1367

03506	45–50–55	11	1	$51.00
03507	47.5–50–52.5	11	.5	53.55
03508	55–60–65	11	1	51.00
03509	57.5–60–62.5	11	.5	51.00
03510	380–400–420	11	4	53.40
03511	55–60–65	21	.5	57.90
03512	380–400–420	21	2	61.50

3½" ROUND MODEL 65

03520	45–50–55	11	1	$48.60
03521	47.5–50–52.5	11	.5	51.00
03522	55–60–65	11	1	48.60
03523	57.5–60–62.5	11	.5	51.00
03524	380–400–420	11	4	53.40
03525	55–60–65	21	.5	57.90
03526	380–400–420	21	2	61.50

WESTON® Digital Panel Instruments

1220

1222

MODEL 1220 BATTERY OR LINE OPERATED BIPOLAR DIGITAL PANEL METERS

Full 3½ digit bipolar digital panel meters utilize the Weston patented dual slope A/D conversion technique. All digital logic circuitry contained on a single MOS LSI plug-in 24-pin chip for added reliability. MOS LSI chip contains all logic circuitry, polarity sensing logic, comparator-to-sense threshold crossing, over range sensing logic, synchronization of the display throbing, and strobing and storage resistor. All logic circuitry is assembled on one socket; hence easily replaceable with another plug-in chip in case of failure. Features include LED readout plug-in type and instant accuracy with no warm-up time. Automatic blanking of unused digits in the readout. Special terminal provided that blanks out the readout when grounded; hence permits the design of "push-to-read" button on portable equipment to extend battery life. Fixed or remote programmed decimal points. Range changes easily accomplished. Easily attainable input vs. readout slope changes.

Voltage Ranges (Input Impedance): 0–100 mV (100 megs); 0–1 V (100 megs); 0–10 V (5 megs); 0–100 V (5 megs); 0–1000 (5 megs).
Current Ranges (Input Impedance): 0–10 μA (10K); 0–100 μA (1K); 0–1 mA (100 ohms); 0–10 mA (10 ohms); 0–100 mA (1 ohm).
Accuracy: ±0.1% of reading ±1 digit at 25° C ±10° C.
Overrange: 100% (reads 1999) except on 1000 V range (stated accuracy applies to full overrange).
Readout: 3½ digits, 7 segment LED, 0.19″ high.
Out-Of-Range-Indication: Flashing "1" in MSD with blanking of remaining digits.
Operating Temperature: 0–60° C (32–140° F).
Temperature Coefficient: ±0.01% FS ±1 digit (±0.005% reading/° C).
Common Mode Rejection: Greater than 120 dB.
Normal Mode Rejection: 30dB at 60 Hz.
Sampling Rates: Greater than 3/sec.
Response Time: Less than 1.5 sec.
Power Required: 5.5 VDC ±10%, 0.75 watts (4 Nicad "C" cells).
Size: 2.83″ w. x 1.41″ h. x 2.55″ d. behind panel. Weight, 4 oz. approx.

Weston Model 1220-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters			
0273851	0–100 mV	100 meg	$145.00
0273852	0–1 V	100 meg	145.00
0273853	0–10 V	5 meg	145.00
0273854	0–100 V	5 meg	155.00
0273855	0–1000 V	5 meg	155.00
DC Current Meters			
0273856	0–10 μA	10K	$155.00
0273857	0–100 μA	1K	155.00
0273858	0–1 mA	100	155.00
0273859	0–10 mA	10	155.00
0273860	0–100 mA	1v	155.00

Weston Model 9790-0273883—Input PC board connectors for Model 1220. List Price..... **$4.00***

MODEL 1221 LINE OPERATED BIPOLAR DIGITAL PANEL METERS

Identical to the Model 1220, except that operating power is 117/234 VAC ±10%, 50–400 Hz. **Size:** 2.38″ w. x 1.41″ h. x 5.0″ d. behind panel.

Weston Model 1221-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters			
0273889	100 mV	100 meg	$165.00
0273890	1 V	100 meg	175.00
0273891	10 V	5 meg	175.00
0273892	100 V	5 meg	175.00
0273893	1000 V	5 meg	175.00
DC Current Meters			
0273894	0–10 μA	10K	$175.00
0273895	0–100 μA	1K	175.00
0273896	0–1 mA	100	175.00
0273897	0–10 mA	10	175.00
0273898	0–100 mA	1	175.00

MODEL 1222 BATTERY OPERATED BIPOLAR DIGITAL PANEL METERS

Electrically identical to the Model 1220, except that the larger 0.3″ high readout increases power drain to 1.25 watts.

Weston Model 1222-	Full Scale Range	Output Ohms	List Price
DC Voltmeters			
0276655	0–100 mV	100 meg	$145.00
0276656	0–1 V	100 meg	145.00
0276657	0–10 V	5 meg	145.00
0276658	0–100 V	5 meg	145.00
0276659	0–1000 V	5 meg	145.00
DC Current Meters			
0276660	0–10 μA	10K	$145.00
0276661	0–100 μA	1K	145.00
0276662	0–1 mA	100	145.00
0276663	0–10 mA	10	145.00
0276664	0–100 mA	1	145.00

MODEL 1230 DIGITAL PANEL METER

GENERAL SPECIFICATIONS

TTL Logic: 0 to +5 volt output. Parallel BCD output except during conversion which is identified by print command output, is available, when specified. BCD to drive 2 loads TTL (sink 3.2 mA).
Operating Temperature: 0–50° C.
Storage Temperature: −40° C to +70° C.

Temperature Coefficient: 100 ppm/° C, full scale.
Input Bias Current: 1 nA max.
Ratio Operation: External reference 1.0 nominal or 0.1 V ±20%. Automatic zero setting.

Display: ±1999 Sperry gas discharge; 7 segment 0.55″ high; 7.5 readings/sec standard; amber Polaroid filter with sockets.
Common Mode Rejection: Greater than 80 dB at line frequency with 1K ohm unbalanced.
Power Required: 117/234 VAC ±10%, 4.7 watts, 50–60 Hz.
Size: Front, 4.00″ w. x 0.56″ d. x 1.75″ h.; behind panel, 4.25″ d.; panel cutout, 3.924″ w. x 1.682″ h. Weight, 1 lb.

Weston Model 1230-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters Without BCD			
0274871	0 ±199.9 mV	100 meg	$141.00
0274872	0 ±1.999 V	100 meg	141.00
0274873	0 ±19.99 V	5 meg	141.00
0274874	0 ±199.9 V	5 meg	141.00
0274875	0 ±1000 V	5 meg	151.00
DC Current Meters Without BCD			
0274876	0 ±19.99 μA	10K	$151.00
0274877	0 ±199.9 μA	1K	151.00
0274878	0 ±1.999 mA	100	151.00
0274879	0 ±19.99 mA	10	151.00
0274880	0 ±199.9 mA	1	151.00
DC Voltmeters With BCD			
0274900	0 ±199.9 mV	100 meg	$146.00
0274901	0 ±1.999 V	100 meg	146.00
0274902	0 ±19.99 V	5 meg	146.00
0274903	0 ±199.9 V	5 meg	156.00
0274904	0 ±1000 V	5 meg	156.00
DC Current Meters With BCD			
0274905	0 ±19.99 μA	10K	$156.00
0274906	0 ±199.9 μA	1K	156.00
0274907	0 ±1.999 mA	100	156.00
0274908	0 ±19.99 mA	10	156.00
0274909	0 ±199.9 mA	1	156.00

MODEL 9744 rms TRANSDUCER

Low cost, all solid state single range device providing DC output signal proportional to rms of input signal. Five voltage ranges. Input impedance of 1 megohm on all voltage ranges makes it suitable for signal or power circuit applications. 0–1 VDC output is suitable for use with digital or analog indicating instruments and a wide range of control instrumentation. Less than 0.5% error on frequency range 40–10 kHz; less than 0.35% on power frequencies (50–400Hz); no more than 1.5% on frequencies in the 30–20,000 Hz range is experienced on any kind of waveform applied. Generous 4:1 crest factor (peak/rms) assures accurate measurements on large signal peaks. **Size:** 4″ w. x 2.88″ d. x 1.94″ h. overall. Weight, less than 9 oz.
Weston Model 9744 rms Transducer—List Price..... **$150.00**

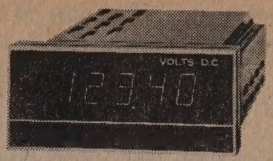
Weston Model	Full Scale Range	List Price*
9744-0274785	0–100 mV	$150.00
9744-0274786	0–1 V	150.00
9744-0274787	0–10 V	150.00
9744-0274788	0–100 V	160.00
9744-0274789	0–700 V	160.00

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, −10%; 10-24, −15%; 25 UP, −20%.

WESTON® Digital Panel Instruments

Models 1295, 1296

Model 1297



Model 1234

MODEL 1295 BI-POLAR DIGITAL PANEL METER

Bi-polar 3½ digit panel meter features dual slope A/D conversion technique for long term stability. All digital logic on a single 24-pin LSI MOS chip. Non-blinking display and 100% overrange (except 1000 V range). Automatic bi-polar operation and utilizes only 7 sq. in. of panel space. **Accuracy:** ±0.1% of reading, ±1 digit. **Overrange:** 100% (reads 1999). **Readout:** 7 segment LED's. **Operating Temperature Range:** 0°–60° C (32°–140° F). **Common Mode Rejection:** 100 dB with 1000 ohm unbalance at 60 Hz. **Normal Mode Rejection:** 30 dB at 60 Hz. **Sampling Rate:** More than 3 per second. **Response Time:** Less than 1.5 sec. **Power Required:** 117 VAC, 50–400 Hz; 230 VAC optional. **Size:** Front, 4.00″ w. x 0.56″ d. x 1.75″ h.; behind panel, 4.25″ d.; panel cut-out, 3.924″ w. x 1.682″ h. Weight, 13 oz. approx.

Weston Model 1295-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters			
0273561	0–100 mV	100 meg	$150.00
0273562	1 V	100 meg	150.00
0273563	10 V	5 meg	150.00
0273564	100 V	5 meg	160.00
0273565	1000 V	5 meg	160.00
DC Current Meters			
0273556	0–10 μA	10K	$160.00
0273557	0–100 μA	1K	160.00
0273558	0–1 mA	100	160.00
0273559	0–10 mA	10	160.00
0273560	0–100 mA	1	160.00

MODEL 1296 LIMITED BI-POLAR DIGITAL PANEL METER

Similar specifications and size as Model 1295, but accuracy is not guaranteed for negative inputs.

Weston Model 1296-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters			
0273601	0–100 mV	100 meg	$140.00
0273602	0–1 V	100 meg	150.00
0273603	0–10 V	5 meg	150.00
0273604	0–100 V	5 meg	150.00
0273605	0–1000 V	5 meg	150.00
DC Current Meters			
0273596	0–10 μA	10K	$150.00
0273597	0–100 μA	1K	150.00
0273598	0–1 mA	100	150.00
0273599	0–10 mA	10	150.00
0273600	0–100 mA	1	150.00

MODEL 1297 BI-POLAR DIGITAL METER

Similar to Model 1295, but features 2½ digit panel meter.

Weston Model 1297-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters			
0273641	0–100 mV	100 meg	$125.00
0273642	0–1 V	100 meg	125.00
0273643	0–10 V	5 meg	150.00
0273644	0–100 V	5 meg	150.00
DC Current Meters			
0273636	0–10 μA	10K	$135.00
0273637	0–100 μA	1K	135.00
0273638	0–1 mA	100	135.00
0273639	0–10 mA	10	135.00
0273640	0–100 mA	1	135.00

MODEL 1234 DIGITAL PANEL METER

A 4½ digit panel meter with 0.55″ high, seven segment gas plasma characters. Utilizes the Weston dual-slope A/D conversion technique for long-term stability and inherent rejection of AC noise in the input signal. Reliable transistor-transistor micrologic provides optimum applications versatility. BCD coded parallel data outputs may be included for use with a broad range of peripheral devices.

Accuracy: ±0.01% reading ±0.025% f.s. at 23° C.

AC Rejection: 40 dB minimum at 60 Hz.

Common Mode Rejection: 80 dB minimum, 60 Hz and 1000 ohm unbalance.

Reading Rate: 7.5 per sec. (15/sec. or 30/sec. optional).

Step Input Response: 2 sec. max. for full-scale step.

Operating Temperature: 0° to 50° C.

Storage Temperature: −40° to +70° C.

Temp. Coefficient: less than (50 ppm reading ±0.3 digit)/°C.

Outrange Indication: Display blanked except MSD "1" and polarity.

Control Outputs: Hold—Logic "O" retains most recent data; Convert (Optional)—A 1 μsec TTL pulse causes conversion within 10 msec.

Status Outputs: Print Command—Logic "O" signifies valid output data; Polarity—Logic "1" signifies positive input signal; Overrange—Logic "1" signifies signal beyond 19999 counts.

BCD Output (Optional): 1-2 4-8 parallel, TTL/DTL (2 u.l.).

Decimal Selection: External, by grounding appropriate terminal.

Power Required: 117 VAC ±10%, 50–60 Hz, 6 Watts (options of 100, 220, or 240 volts available).

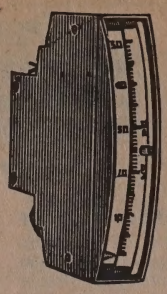
Size: 1.75″ h. x 4.0″ w. x 4.25″ d. behind panel.
Weight: Approx. 2 pounds.

Weston Model 1234-	Full Scale Range	Input Ohms	List Price*
DC Voltmeters Without BCD			
0276493	0–199.99 mV	10 meg	$245.00
0276494	0–1.9999 V	100 meg	245.00
0276495	0–19.999 V	5 meg	245.00
0276496	0–199.99 V	5 meg	255.00
0276497	0–1000.0 V	5 meg	255.00
DC Current Meters Without BCD			
0276498	0–19.999 μA	10K	$255.00
0276499	0–199.99 μA	1K	255.00
0276500	0–1.9999 mA	100	255.00
0276501	0–19.999 mA	10	255.00
0276502	0–199.99 mA	1	255.00
DC Voltmeters With BCD			
0276513	0–199.99 mV	10 meg	$255.00
0276514	0–1.9999 V	100 meg	255.00
0276515	0–19.999 V	5 meg	255.00
0276516	0–199.99 V	5 meg	265.00
0276517	0–1000.0 V	5 meg	265.00
DC Current Meters With BCD			
0276518	0–19.999 μA	10K	$265.00
0276519	0–199.9 μA	1K	265.00
0276520	0–1.9999 mA	100	265.00
0276521	0–19.999 mA	10	265.00
0276522	0–199.99 mA	1	265.00
DC Voltmeters With Buffered BCD			
0277698	0–199.99 mV	10 meg	$290.00
0277699	0–1.9999 V	100 meg	300.00
0277700	0–19.999 V	5 meg	300.00

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, −10%; 10-24, −15%; 25 UP, −20%.

WESTON® Thin Line Panel Meters

- COMPLETELY FLAT . . . CAN BE STACKED SIDE-BY-SIDE TO SAVE PANEL SPACE
- INLINE POINTER AND SCALE . . . PARALLAX ELIMINATED
- NEW SELF-SHIELDED MECHANISM
- ILLUMINATION (SELF-CONTAINED) ALSO AVAILABLE
- MEETS ASA C39.1 PERFORMANCE



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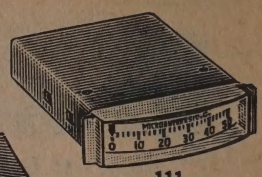

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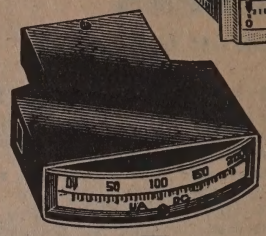

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MODELS 131 AND 231 EDGEWISE PANEL METERS

Model 131 is basically a 3½-inch flat edgewise meter offering many benefits not generally offered in this type of meter. To eliminate parallax normally associated with edgewise meters, an inline scale is standard; a red pointer increases readability. For those requiring lighting, self-contained illumination is available as an optional feature; bulbs are removable while meters are mounted in panel—even when stacked side-by-side. Designed to meet ASA C39.1 performance specifications. Incorporates Cormag® mechanism design for shielding purposes. The magnet is inside the moving coil and the resulting inherent shielding allows mounting on magnetic or non-magnetic panels without need for adjustment, as well as the ability to stack meters side-by-side without any interaction. Mechanism also has a shock absorption jewel arrangement to assure long life. For scale presentation approximately twice as wide. **Accuracy:** 2% of FS value for DC; 3% of FS value for AC rectifier type. **Scale Length:** 2.75″; anti-parallax inline scale. **Pointer:** Red lance type. **Movement:** Self shielded thin line Cormag mechanism. Shock mounted jewel arrangement. **Mounting:** Meter can be mounted either horizontally or vertically. Mounting clips fasten to meter behind panel—no screws show on front of panel. For stacking, thru holes are provided so stack can be bolted together. **Dielectric:** 1500 V rms. **Illumination:** Self-contained on request. **Size:** 3.437″ w. x 1.010″ h. x 3.921″ d. overall; panel cut out 2 9/16″ w. x 1 1/16″ h.

Model 231 is identical to above, but with wide face for improved readability.

DC INSTRUMENTS

No. 131- or 231- Horiz.	Vertical	Range	Scale Div.	Approximate Resistance	List Price*
1921010	.....	0–10 V	50	5000 Ω/V	$32.35
1921025	.....	0–25 V	50	5000 Ω/V	32.35
1921050	.....	0–50 V	50	5000 Ω/V	32.35
1921100	.....	0–100 V	50	5000 Ω/V	32.35
4921001	4922001	0–1 mA	50	38 ohms	28.45
5921050	5922050	0–50 μA	50	2300 ohms	35.35
5921100	5922100	0–100 μA	50	900 ohms	30.85
5921500	.....	0–500 μA	50	134 ohms	30.85
5921750	5922750*	50–0–50 μA	50	900 ohms	30.85
2921001	.....	0–1 A	50	0.05 ohm	24.40

*Available for Model 131 only.

AC INSTRUMENTS

No. 132- or 232- Horiz.	Vertical	Range	Scale Div.	Approximate Resistance	List Price*
1931150	.....	0–150 V	30	2000 Ω/V	$40.75

MODELS 121 AND 125 EDGEWISE PANEL METERS

Model 121 is a 2½″ flat edgewise meter utilizing a true flat Cormag mechanism design for shielding purposes. An inline scale is standard; eliminates parallax normally associated with edgewise meters. Red pointer increases readability. Front mounted zero corrector. **Accuracy:** 2% of FS value for DC; 3% of FS value for AC rectifier type. **Scale Length:** 1.9″; antiparallax inline scale. **Pointer:** Red lance type. **Movement:** Self shielded thin line Cormag mechanism. Shock mounted jewel arrangement. **Mounting:** Either horizontally or vertically. Mounting clips fasten to meter behind panel; no screws show on front of panel. For stacking, thru-holes are provided so stack can be bolted together. **Dielectric:** 2000 V rms. **Size:** 2.880″ w. x 1.010″ h. x 3.921″ d. overall; panel cut out, 2 9/16″ w. x 1 1/16″ h.

Model 125 is identical, but with wide face for best readability.

DC INSTRUMENTS

No. 121- Horiz.	Vertical	Range	Scale Div.	Approximate Resistance	List Price*
1921010	.....	0–10 V	50	5000 Ω/V	$25.50
4921001	4922001	0–1 mA	50	39 ohms	23.70
5921050	5922050	0–50 μA	50	2300 ohms	31.15
5921100	5922100	0–100 μA	50	900 ohms	27.25
5921200	.....	0–200 μA	40	600 ohms	27.25
5921500	.....	0–500 μA	50	134 ohms§	27.25
5921750	5922750	50–0–50 μA	50	900 ohms	27.25

No. 125- Horiz.	Vertical	Range	Scale Div.	Approximate Resistance	List Price*
4921001	.....	0–1 mA	50	39 ohms	$25.20
5921050	.....	0–50 μA	50	2300 ohms	33.15
5921100	.....	0–100 μA	50	900 ohms	29.05

*50 for Model 125. †Available for Model 121 only. ‡Model 125 only. §125 ohms for Model 125. ♯External-shunt types (Model 125) for higher ranges are available; write for information.

AC INSTRUMENTS

No. 122- Horiz.	Vertical	Range	Scale Div.	Approximate Resistance	List Price*
1931150	.....	0–150 V	30	2000 Ω/V	$30.30
1931300	.....	0–300 V	30	2000 Ω/V	30.30

THIN LINE MODEL 111 SELF-SHIELDED PANEL METERS

Edgewise instrument using a flat Cormag mechanism for inherent shielding; permits mounting on magnetic or non-magnetic panels without adjustment. Can be stacked side-by-side without interaction. Shock absorption jewel arrangement assures long life. Designed to meet ASA C39.1 specifications. Mounts vertically or horizontally (specify) using mounting clips behind panel; no screws show on panel front; thru-holes provided for stacking. Red lance pointer. **Scale:** 1.25″ long. **Accuracy:** 2% FS, DC; 3% FS, AC rectifier type. **Size:** 1.810″ w. x .500″ h. x 2.440″ d. behind panel; fits 1.650″ x .500″ panel cutout.

AC (RECTIFIER TYPE) VOLTMETERS

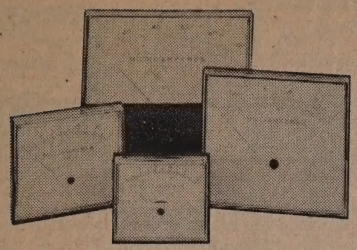
Weston No. 112- Horiz.	Vertical	Range	Scale Div.	Approx. Resistance	List Price*
1431150	.....	150 V	30	2000 Ω/V	$29.00

DC INSTRUMENTS

Weston No. 111- Horiz.	Vertical	Range	Scale Div.	Approx. Resistance	List Price*
5421050	5422050	50 μA	25	2300 Ω	$28.05
5421100	5422100	100 μA	20	900 Ω	24.00
5421200	5422200	200 μA	20	600 Ω	22.45
5421500	.....	500 μA	25	134 Ω	22.15
5421750	5422750	50-0-50 μA	20	900 Ω	24.00
4421001	4422001	1 mA	20	39 Ω	21.00
4421010	.....	10 mA	20	2 Ω	21.85
4421025	.....	25 mA	25	2 Ω	21.85
1421010	1422010	10 V	20	5000 Ω/V	22.80
1421025	.....	25 V	25	5000 Ω/V	22.80
1421050	.....	50 V	25	5000 Ω/V	22.80
.....	1422150	150 V	30	5000 Ω/V	22.80

★QUANTITY DISCOUNTS: LOTS OF 1-9, LIST; 10-24, —10%; 25-49, —15%

SERIES 2000 PANEL INSTRUMENTS



Attractive panel meters are styled to complement the appearance of equipment, rather than dominate it. Flattened scale arc gives excellent readability. Convenient snap-in covers permit easy scale replacement; use of a simple tool for replacement guards against finger snap-off of covers. Cormag® mechanism uses specially treated Alnico V magnet for full shielding from magnetic effects and long term stability. Offers the best combination of high torque with a minimum response time and minimum power consumption. Meets ANSI C39.1 standard. Features excellent dust sealing, plus the option of superior moisture-resistant sealing where required in critical environmental conditions. Easily adaptable to external illumination. Pivot and jewel types have spring back jewels. Half bezel is available for rear-of-panel mounting. Zero corrector is accessible from front of panel through bezel; no need to cut separate panel hole.

SPECIFICATIONS

All models have knife-edge pointer and plain scale; mirror scale available.

Model	Size	Function	Accuracy, Full-Scale†	Scale Length
2021	2½″	DC	2%	2.13″
2022	2½″	AC Rect.	3% (60 Hz)	2.13″
2031	3½″	DC	2%	2.7″
2032	3½″	AC Rect.	3% (60 Hz)	2.7″
2041	4½″	DC	2%	3.7″
2042	4½″	AC Rect.	3% (60 Hz)	3.7″
2051	5½″	DC	2%	4.5″
2052	5½″	AC Rect.	3% (60 Hz)	4.5″

†Except 1% types listed below.

DIMENSIONS

Depth behind panel, 1.140″ (1.725″ including terminal stud).

Model	Width	Height	Panel Hole Dia.	Mounting Centers‡ W.	Mounting Centers‡ H.
2021	2.800″	2.400″	2.200″	1.880″	1.880″
2022	2.800″	2.400″	2.200″	1.880″	1.880″
2031	3.500″	2.980″	2.820″	2.250″	2.250″
2032	3.500″	2.980″	2.820″	2.250″	2.250″
2041	4.530″	4.050″	2.820″	4.000″	3.562″
2042	4.530″	4.050″	2.820″	4.000″	3.562″
2051	5.630″	4.490″	2.820″	5.250″	3.000″
2052	5.630″	4.490″	2.820″	5.250″	3.000″

‡Four mounting studs, .500″ long.

PIVOT AND JEWEL METERS

DC MICROAMMETERS

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
50	2500	5841050	$27.00	$27.65	$29.20	$36.40
100	2300	5841100	25.25	25.70	27.00	#
200	850	5841200	#	#	26.00	25.50
50–0–50	2300	8888001	25.25	25.70	27.00	34.05

DC MILLIAMMETERS

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
1	85	4841001	$21.15	$21.85	$23.30	$28.80
2	16	4841002	#	#	#	#
5	9	4841005	#	#	23.30	#
10	2.2	4841010	21.15	21.85	#	#
20	1.6	4841020	#	#	#	#
50	2.0	4841050	21.15	21.85	#	#
100	1.0	4841100	21.15	21.85	#	#
200	0.5	4841200	21.15	#	#	#
300	0.33	4841300	21.15	#	23.30	#
500	0.2	4841500	#	21.85	23.30	#

DC AMMETERS

Range	Approx. Voltage Drop	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
1	50 mV	2841001	$21.15	$21.85	$23.30	$29.75
2	50 mV	2841002	#	#	23.30	#
5	50 mV	2841005	21.15	21.85	23.30	29.75
10	50 mV	2841010	#	21.85	#	29.75
25	50 mV	2841025	21.15	21.85	23.30	#
50	50 mV	2841050	#	21.85	23.30	#
100†	.....	8841100	21.15	21.85	23.30	#

†50 mV for use with external shunts.

DC VOLTMETERS

Range	Ohms/ Volt	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
5	1000	1841005	$22.35	#	#	#
10	1000	1841010	22.35	$23.05	$24.55	#
25	1000	1841025	#	23.05	#	#
50	1000	1841050	22.35	23.05	24.55	#
150	1000	1841150	22.35	23.05	24.55	#
200	1000	1841200	22.35	#	#	#
300	1000	1841300	22.35	23.05	24.55	#

AC VOLTMETERS (RECTIFIER TYPE)

Range	Ohms/ Volt	Weston No.*	List Price* Model 2022	Model 2032	Model 2042	Model 2052
15	1000	1841015	#	#	#	#
30	1000	1841030	#	#	#	#
75	1000	1841075	#	#	#	#
150	1000	1841150	#	$29.75	#	#
300	1000	1841300	#	#	#	#

*Complete Weston No. consists of Model number (2021, 2032, etc.) followed by suffix indicated in table; e.g., 2021-4841001. #Non-stock item.

TAUT-BAND METERS

DC MICROAMMETERS (2% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
50	950	5842050	$29.80	$30.35	$31.90	#
100	845	5842100	27.65	28.50	29.75	#
200	275	5842200	26.65	27.00	28.90	#
500	60	5842500	25.55	#	27.30	#
50–0–50	845	8888004	27.65	28.50	#	#
100–0–100	275	8888005	26.65	#	#	#
500–0–500	16.5	8888006	#	#	#	#

DC MICROAMMETERS (1% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
100	845	5812100	.....	.....	$38.70	$42.35
200	275	5812200	.....	.....	38.05	40.80

DC MILLIAMMETERS (2% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
1	16.5	4842001	$23.30	$24.00	$25.10	$31.55

DC MILLIAMMETERS (1% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
1	16.5	4812001	.....	.....	$34.35	$36.50

DC VOLTMETERS (1% ACCURACY)

Range	Ohms/ Volt	Weston No.*	List Price* Model 2021	Model 2031	Model 2041	Model 2051
50	1000	1812050	#	#	$35.55	#

VU METERS

Type A scale stresses the level in "VU" units for monitoring wire lines.

Scale Type	Weston No.*	List Price* Model 2022	Model 2032	Model 2042
Type 30 A	3841001	$36.85	$37.40	$39.00

#NON-STOCK ITEMS

Series 2000 panel meters are available in a variety of ranges in addition to those listed above, as non-stock items. Pivot and jewel meters are available to read DC microamps, AC microamps and AC milliamps. Taut-band meters are available to read DC amps, DC milliamps, AC and DC volts, AC milliamps and AC microamps. Write for complete information and prices.

SERIES 2000 PANEL INSTRUMENTS CONTINUED ON FOLLOWING PAGE

★QUANTITY DISCOUNTS

Lots of 1–9	Lots of 10–24	Lots of 25–49
List	List −10%	List −15%

SERIES 2000 PANEL INSTRUMENTS (CONT'D.)

AC AMMETERS (IRON VANE TYPE)
2% ACCURACY

Range	Weston No.	List Price* Model 2024	Model 2034	Model 2044
1	2841001	$19.90	$20.15	$21.30
5	2841005	19.90	20.15	21.30
10	2841010	19.90	20.15	21.30
20	2841020	19.90	20.15	21.30
25	2841025	#	20.15	21.30
30	2841030	19.90	20.15	21.30
50	2841050	19.90	20.15	21.30
100	2841100	19.90	20.15	21.30

AC VOLTMETERS (IRON VANE TYPE)
2% ACCURACY

Range	Weston No.	List Price* Model 2024	Model 2034	Model 2044
10	1841010	#	$21.30	$22.20
15	1841015	$20.80	#	22.20
50	1841050	#	21.30	22.20
150	1841150	20.80	21.30	22.20
300	1841300	20.80	21.30	22.20
500	1841500	#	#	22.20

AC MILLIAMMETERS (IRON VANE TYPE)
2% ACCURACY

Range	Weston No.	List Price* Model 2024	Model 2034	Model 2044
50	4841050	$19.90	$20.15	$21.30
100	4841100	19.90	20.15	21.30
150	4841150	19.90	20.15	21.30

MOTOR LOAD PERCENT INDICATOR

50 (0–150%)	2841888	.....	$20.15	$21.30

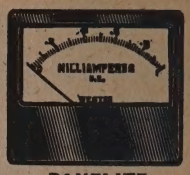
SERIES 2000 ACCESSORIES

Description	Weston No.	Used With Model	List Price*
Black Half Bezel	2009-0271495	2021 & 2024	$2.55
Black Half Bezel	2009-0271922	2031 & 2034	2.55
Black Half Bezel	2009-0271923	2041 & 2044	2.55
Black Half Bezel	2009-0271924	2051	2.55
Illumination Kit	2009-0271930	2031 & 2034	6.65
Illumination Kit	2009-0271931	2041 & 2044	6.65
Illumination Kit	2009-0271932	2051	7.40

271, 273

SERIES 1900 PANEL INSTRUMENTS

PLASTIC



BAKELITE

Mounting styles: Semi-flush, flush (with bezel) or recessed. Instruments are available with Bakelite* front or plastic front if desired (same price). 7½″ sizes, plastic only. Gray or yellow colored plastic inserts with plastic fronts on Series 1930, 1940 and 1950, add **60c** to price. All items listed are stock. Non-stock items available on special order; write for complete information and prices. Scale arcs for meters 100°.

*Bakelite Corp. trademark.

DC MICROAMMETERS
1% ACCURACY

Range	Model 1941 Weston No.	List Price*
50	5619050	$59.25
100	5619100	57.70

Supplied with knife-edge pointer and mirror scale.

SERIES 1900T TAUT BAND PANEL METERS

Same as 1900, but with taut band mechanism. Up to four times the sensitivity of conventional types; no pivots, jewels or springs needed. 1936T (3½″), 1946T (4½″) and 1956T (5½″) have external DC magnet; all others employ DC Cormag mechanism. Accuracy, ±2% except as noted.

DC MICROAMMETERS (EXT. MAG.)

Range	Model 1936 Weston No.	Model 1936 List Price*	Model 1946 Weston No.	Model 1946 List Price*	Model 1956 Weston No.	Model 1956 List Price*
5	5629005	$56.60	5629005	$61.80	.....	.....
10	5629010	49.50	.....	.....	5629010	$58.90
20	5629020	42.35	.....	.....	.....	.....

NULL INDICATORS

Model 1936T—(3½ inch) No. 5619069. List Price.... **$62.65**
Model 1946T—(4½ inch) No. 5629069. List Price.... **64.50**

HALF-FRAME MOUNTING BEZELS

Half-frame bezels mount 1900 series meters so only the scale is visible. For use only with clear-plastic-front instruments. Flat black enamel finish; for panels ⅛″ thick max.

Weston No.	For Models	List Price*
1909-0198486	1921, 2, 4	$2.00
1909-0198487	1931, 2, 4, 6, 8 or T	2.00
1909-0198488	1941, 2, 4, 6, 8 or T	2.00
1909-0198489	1951, 2, 4, 6, 8 or T	2.00
1909-0256375	1971, 6 or T	7.00

ILLUMINATION KITS

For use with plastic-front meters only. With half-frame bezel, 2 mounting brackets and socket for NEMA #47 lamp, not supplied.

245509	Series 1930	$5.25
245510	Series 1940	5.25
245511	Series 1950	5.75

MODELS 271 AND 273 FAN-SHAPED DC SWITCHBOARD INSTRUMENTS

Permanent magnet, moving coil type. **Rated Accuracy:** ±1%, full scale. **Scale Length:** Model 271, 5.8″; Model 273, 7.32″. **Overall Size:** Model 271, 7⅛″ w. x 6¼″ h. x 1¾″ above, 1½″ behind panel; Model 273, 9⅛″ w. x 7¹³⁄₁₆″ h. x 2⅛″ above, 1½″ behind panel. **Weight:** Model 271, 4 lbs.; Model 273, 5 lbs.

DC VOLTMETERS

Resistance: 1,000 ohms/volt.

Range	List Price* Model 271	Model 273	Range	List Price* Model 271	Model 273
10 V	$110.00	$125.00	75 V	$110.00	$125.00
15 V	110.00	125.00	150 V	110.00	125.00
20 V	110.00	125.00	250 V	110.00	125.00
30 V	110.00	125.00	300 V	110.00	125.00
50 V	110.00	125.00			

DC AMMETERS

External shunt type. To attain the scale reading listed below, an appropriate external 50 mV switchboard shunt must be used. Prices include one pair of Model 9958 5′ shunt leads only (.065 ohm, P/N 8986), external shunt not supplied; information on request. **Scale Readings Available:** 5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 400, 500, 600, 750, 1000, 1500, 2000 or 3000 amps. **Model 271**—List **$115.00***. **Model 273**—List **$120.00***

DC MICROAMMETERS AND MILLIAMMETERS

Ranges of 30 mA (25 mA for Model 273) and up are shunted and have a drop of approx. 50 mV.

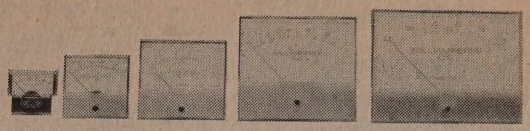
Range	List Price* Model 271	Model 273	Range	List Price* Model 271	Model 273
100 μA	$155.00	$185.00	25 mA	$115.00	$120.00
200 μA	145.00	160.00	50 mA	115.00	120.00
500 μA	135.00	150.00	100 mA	115.00	120.00
1 mA	125.00	130.00	200 mA	115.00	120.00
5 mA	125.00	130.00	300 mA	115.00	120.00
10 mA	125.00	130.00			

★QUANTITY DISCOUNTS: LOTS OF 1-9, LIST; 10-24, —10%; 25-49, —15%

WESTON® Panel Instruments

MUSTANG SERIES PANEL INSTRUMENTS

Cormag® mechanism uses specially treated Alnico V magnets for full shielding from magnetic effects and long term stability. Meters are styled to enhance the appearance of equipment, rather than dominate it. Unique taut band caging design affords added protection against environmental shock and vibration. Flattened scale arc and knife-edge pointer give excellent readability. Convenient snap-lock cover permits easy scale changing. Features excellent dust sealing. Available with either front-mounted Type 1 or flush rear-mounted Type 2 covers. Black painted covers available for front-mounted styles. Mounting styles available include the exclusive Ring-Lock mounting and the conventional stud mounting. Optional features such as painted covers in selective colors, special scales, clear plastic cases to facilitate backlighting of rear-mounted styles in 3½" and 4½" meters, special mounting-stud configurations, etc. are available on special order.



SPECIFICATIONS

All models have knife-edge pointers and plain scale.

Model	Size	Function	Accuracy Full Scale	Scale Length
7511	1½"	DC	2%	1.4"
7512	1½"	AC Rect.	3%	1.4"
7521	2½"	DC	2%	2.2"
7522	2½"	AC Rect.	3%	2.2"
7531	3½"	DC	2%	2.7"
7532	3½"	AC Rect.	3%	2.7"
7541	4½"	DC	2%	3.9"
7542	4½"	AC Rect.	3%	3.9"
7561	6"	DC	2%	4.6"

DIMENSIONS

Max. depth behind panel 0.97" (1.62" including terminal stud).

Model	Width	Height	Panel Hole Diam.	Mounting Centers W.	Mounting Centers D.
7511	1.75"	1.66"	1.5"	1.312"	.....
7512	1.75"	1.66"	1.5"	1.312"	.....
7521	2.56"	2.37"	2.125"	1.88"	1.88"
7522	2.56"	2.37"	2.125"	1.88"	1.88"
7531	3.43"	3.00"	2.125"	2.25"	2.25"
7532	3.43"	3.00"	2.125"	2.25"	2.25"
7541	4.68"	4.00"	2.125"	4.00"	3.56"
7542	4.68"	4.00"	2.125"	4.00"	3.56"
7561	6.00"	4.31"	2.125"	5.25"	3.00"

DC MICROAMMETERS

1½" MODEL 7511

Range	Resis. Ohms	Scale Div.	Weston No. Stud Mounting	List Price
50	1100	25	5849050	$26.00
100	650	20	5849100	23.50
200	208	20	5849200	21.00
500	45	25	5849500	20.50

2½" MODEL 7521

50	1100	50	5849050	$26.75
100	650	50	5849100	23.75
200	208	40	5849200	22.00
500	45	50	5849500	21.00

3½" MODEL 7531

50	1100	50	5849050	$28.25
100	650	50	5849100	25.00
200	208	40	5849200	22.75
500	45	50	5849500	22.50

4½" MODEL 7541

50	1100	50	5849050	$27.50
100	650	50	5849100	26.50
200	208	40	5849200	24.50
500	45	50	5849500	23.50

6" MODEL 7561

50	1100	50	5844050	$32.00
100	650	50	5844100	29.75
200	208	40	5844200	28.00
500	45	50	5844500	26.50

DC MILLIAMMETERS

1½" MODEL 7511

Range	Resis. Ohms	Scale Div.	Weston No. Stud Mounting	List Price
1	15	20	4849001	$20.50
5	10	25	4849005	20.50
10	5	20	4849010	20.50
20	2.5	20	4849020	20.50
50	1.0	25	4849050	21.25
100	0.5	20	4849100	21.25
200	0.25	20	4849200	21.25
500	0.1	25	4849500	21.25

2½" MODEL 7521

1	15	50	4849001	$20.50
5	10	50	4849005	20.50
10	5	50	4849010	20.50
20	2.5	40	4849020	20.50
50	1.0	50	4849050	20.75
100	0.5	50	4849100	20.75
200	0.25	40	4849200	20.75
500	0.1	50	4849500	20.75

3½" MODEL 7531

1	15	50	4849001	$21.50
2	10	40	4849002	21.50
5	10	50	4849005	21.50
10	5	50	4849010	21.50
20	2.5	40	4849020	21.50
50	1.0	50	4849050	21.50
100	0.5	50	4849100	21.50
200	0.25	40	4849200	21.50
500	0.1	50	4849500	21.50

DC MILLIAMMETERS (Cont.)

4½" MODEL 7541

Range	Resis. Ohms	Scale Div.	Weston No. Stud Mounting	List Price
1	15	50	4849001	$22.50
2	10	40	4849002	22.50
5	10	50	4849005	22.50
10	5	50	4849010	22.50
20	2.5	40	4849020	22.50
50	1.0	50	4849050	23.00
100	0.5	50	4849100	23.00
200	0.25	40	4849200	23.00
500	0.1	50	4849500	23.00

6" MODEL 7561

1	15	50	4844001	$24.75
2	10	40	4844002	24.75
5	10	50	4844005	24.75
10	5	50	4844010	24.75
50	1.0	50	4844050	27.40
100	0.5	50	4844100	27.40
500	0.1	50	4944500	27.40

DC AMMETERS

1½" MODEL 7511

Range	Approx. Voltage Drop	Scale Div.	Weston No. Stud Mounting	List Price
1	50 mV	20	2849001	$21.25

2½" MODEL 7521

1	50 mV	50	2849001	$21.50

3½" MODEL 7531

1	50 mV	50	2849001	$22.00

4½" MODEL 7541

1	50 mV	50	2849001	$23.00
2	50 mV	40	2849002	23.00

6" MODEL 7561

1	50 mV	50	2844001	$28.00

DC VOLTMETERS

1½" MODEL 7511

Range	Ohms/ Volt	Scale Div.	Weston No. Stud Mounting	List Price
2	1000	20	1849002	$21.25
5	1000	25	1849005	21.25
50	1000	25	1849050	21.25
150	10,000	15	1849150	21.25
200	10,000	20	1849200	21.25
300	10,000	30	1849300	22.50

2½" MODEL 7521

1	1000	50	1849001	$21.50
5	1000	50	1849005	21.50
15	1000	60	1849015	21.50
30	1000	60	1849030	21.50
50	1000	50	1849050	21.50
150	10,000	60	1849150	21.50
300	10,000	60	1849300	22.75

DC VOLTMETERS (Cont.)

3½" MODEL 7531

Range	Ohms/ Volt	Scale Div.	Weston No. Stud Mounting	List Price
2	1000	40	1849002	$22.75
5	1000	50	1849005	22.75
30	1000	60	1849030	22.75
150	10,000	60	1849150	23.50
200	10,000	40	1849200	23.50

4½" MODEL 7541

1	1000	50	1849001	$24.00
2	1000	40	1849002	24.00
5	1000	50	1849005	24.00
10	1000	50	1849010	24.00
15	1000	60	1849015	24.00
30	1000	60	1849030	24.00
50	1000	50	1849050	24.00
150	10,000	60	1849150	24.75
200	10,000	40	1849200	24.75
300	10,000	60	1849300	24.75

6" MODEL 7561

5	1000	50	1844005	$26.25
15	1000	60	1844015	26.25
30	1000	60	1844030	26.25
50	1000	50	1844050	26.25
150	10,000	60	1844150	26.25
300	10,000	60	1844300	26.25

AC VOLTMETERS RECTIFIER TYPE

1½" MODEL 7512

Range	Ohms/ Volt	Scale Div.	Weston No. Stud Mounting	List Price
150	870	15	1849150	$27.50
300	870	30	1849300	27.50

2½" MODEL 7522

150	870	60	1849150	$26.50
300	870	60	1849300	26.50

3½" MODEL 7532

150	870	60	1849150	$25.50
300	870	60	1849300	25.50

4½" MODEL 7542

150	870	60	1849150	$27.40
300	870	60	1849300	27.40

To order black painted cover, change the second digit of the number from 8 to 7 and add $0.75 to list price.

To order Ring-Lock mounting, change the fourth digit of number from 9 to 1 and subtract $0.50 from list price.

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE

MODEL 360 PORTABLE DIGITAL VOM

• Unique Analog Output and Indication • AC Line or Battery Operation

Model 360

Solid state IC designed meter for high accuracy measurements. Measures AC and DC current and voltages, conventional and "low-power" ohmic resistance on 29 popular ranges including "low-power" ohms. Analog indicator for scanning of nulls and peaks; analog output for interfacing with chart recorders. Up down integration analog/digital conversion assures superior stability, accuracy and noise immunity. Adjust-A-Vue handle. RANGES: **DC Volts (Input Impedance):** 200 mV (100 megohms); 2 V (1000 megohms); 20 V (10 megohms); 200 V (10 megohms); 1000 V (10 megohms); with accuracy of ±(0.25% reading +1 digit). **AC Volts:** 200 mV; 2 V; 20 V; 200 V; 600 V; all ranges on 1 megohm (15 pF) input impedance and accuracy of ±(0.5% of reading +1 digit). **DC Current:** 20 μA; 200 μA; 2 mA; 20 mA; 200 mA; 2 A; 10 A; with accuracy of ±(0.5% of reading +1 digit). **AC Current:** 200 μA; 2 mA; 20 mA; 200 mA; 2 A; 10 A; with accuracy of ±(1.0% of reading +1 digit). **Resistance:** 200 ohms (low-power); 2K ohms (low-power); 20K ohms; 200K ohms; 2 megohms; 20 megohms.

SPECIFICATIONS: **Temperature Range:** Operating, 0 to +40° C; storage, −40° C to +60° C. **Numeric Display:** 3½ digit, 7-segment, 0.33″ high, LED type, non-blinking with storage. **Conversion Rate:** 5/sec nom. **Overrange Indication:** Automatic beyond 1999, with lower half of the "1" digit flashing. **DC Polarity Selection:** Automatic with "+" or "−" indications. **Analog Display:** 50–0–50 μA moving coil indicator. **Power Required:** 117/234 VAC, 50 to 400 Hz or 4 nickel cadmium "C" size cells (not supplied). **Size:** 5.4″ w. x 3.75″ d. x 7.2″ h. Weight, 4 lbs. (without batteries) and 4.5 (with batteries).

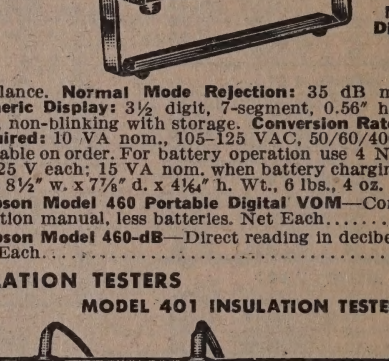
Simpson Model 360 Digital VOM—With test leads, AC line cord (less batteries) and operator's manual. Net Each..... **$325.00**

Simpson Model 360—220 VAC, 50 Hz operation (less batteries). Net Each..... **$330.00**

Simpson No. 00815—Carrying case for 360. Net Each **22.75**

MODEL 460 PORTABLE DIGITAL VOM

Combines high accuracy, multiple range testing with non-blinking 3½ digit numerical display and front panel analog meter readout. Ideal for field or lab use, operates on self contained batteries or line current. Batteries are rechargeable when plugged into AC line. Instant readout, no warm up time required; automatic + or − and overrange indication. Peaks and nulls shown by ½″ edgewise analog meter. Measures 26 switch-selected ranges; DC and AC voltage and current, and resistance. Unit is fused for AC line protection. Features include: Dual purpose handle, convenient line cord storage compartment and color-coded input jacks for instant visual recognition.



Model 460 Digital VOM

RANGES: **DC Volts:** 0–200 mV; 0–2–20–200–1000 V with ±0.1% reading accuracy, ±1 digit; input impedance, 10 megs except 200 mV, 100 megs and 2 V, 1000 megs. **AC Volts:** 0–200 mV; 0–2–20–200–1000 V with ±0.5% reading accuracy, ±1 digit; input impedance, 1 megohm; frequency range, 40 Hz to 10 kHz (±1% accuracy for 10 kHz to 20 kHz). **DC Current:** 0–200 μA; 0–2–20–200 mA (±0.2% reading accuracy, ±1 digit); 0–1000 mA (±0.5% accuracy); voltage drop, 0.2 V. **AC Current:** 0–200 μA; 0–2–20–200 mA (±0.7% reading accuracy, ±1 digit); 0–1000 mA (±1.0% accuracy); voltage drop, 0.2 V. **Resistance:** 0–200–2K–20K–200K–1000K ohms (±0.5% reading accuracy, ±1 digit); 0–20 megohms (±1% accuracy).

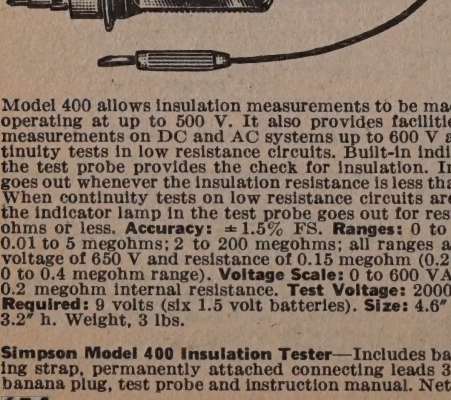
SPECIFICATIONS: **Temperature Range:** +10° C to +40° C. **Common Mode Rejection:** 80 dB min. at 60 Hz with 1K ohms unbalance. **Normal Mode Rejection:** 35 dB min. at 60 Hz. **Numeric Display:** 3½ digit, 7-segment, 0.56″ high, fluorescent type, non-blinking with storage. **Conversion Rate:** 5/sec. **Power Required:** 10 VA nom., 105–125 VAC, 50/60/400 Hz; 230 VAC available on order. For battery operation use 4 Ni-Cad "D" cells of 1.25 V each; 15 VA nom. when battery charging with unit on. **Size:** 8½″ w. x 7⅞″ d. x 4¼″ h. Wt., 6 lbs., 4 oz.

Simpson Model 460 Portable Digital VOM—Complete with instruction manual, less batteries. Net Each..... **$395.00**

Simpson Model 460-dB—Direct reading in decibels. Net Each..... **$000.00**

BATTERY OPERATED INSULATION TESTERS

MODEL 400 INSULATION TESTER

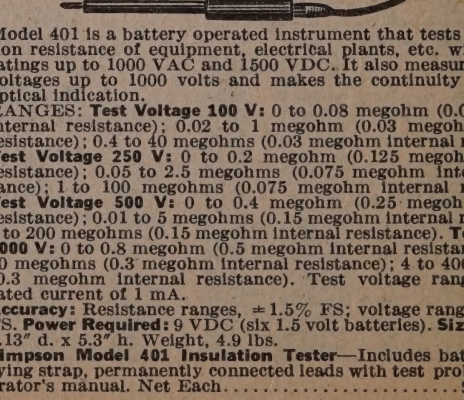


Model 400

Model 400 allows insulation measurements to be made on systems operating at up to 500 V. It also provides facilities for voltage measurements on DC and AC systems up to 600 V as well as continuity tests in low resistance circuits. Built-in indicator lamp in the test probe provides the check for insulation. Indicator lamp goes out whenever the insulation resistance is less than 1 milliohm. When continuity tests on low resistance circuits are being made, the indicator lamp in the test probe goes out for resistance of 500 ohms or less. **Accuracy:** ±1.5% FS. **Ranges:** 0 to 0.4 megohm; 0.01 to 5 megohms; 2 to 200 megohms; all ranges at open circuit voltage of 650 V and resistance of 0.15 megohm (0.25 megohm for 0 to 0.4 megohm range). **Voltage Scale:** 0 to 600 VAC/VDC with 0.2 megohm internal resistance. **Test Voltage:** 2000 volts. **Power Required:** 9 volts (six 1.5 volt batteries). **Size:** 4.6″ w. x 5.6″ d. x 3.2″ h. Weight, 3 lbs.

Simpson Model 400 Insulation Tester—Includes batteries, carrying strap, permanently attached connecting leads 3 ft. long with banana plug, test probe and instruction manual. Net.. **$195.00**

MODEL 401 INSULATION TESTER



Model 410

Model 401 is a battery operated instrument that tests the insulation resistance of equipment, electrical plants, etc. with voltage ratings up to 1000 VAC and 1500 VDC. It also measures AC/DC voltages up to 1000 volts and makes the continuity tests with optical indication.

RANGES: **Test Voltage 100 V:** 0 to 0.08 megohm (0.05 megohm internal resistance); 0.02 to 1 megohm (0.03 megohm internal resistance); 0.4 to 40 megohms (0.03 megohm internal resistance). **Test Voltage 250 V:** 0 to 0.2 megohm (0.125 megohm internal resistance); 0.05 to 2.5 megohms (0.075 megohm internal resistance); 1 to 100 megohms (0.075 megohm internal resistance). **Test Voltage 500 V:** 0 to 0.4 megohm (0.25 megohm internal resistance); 0.01 to 5 megohms (0.15 megohm internal resistance); 2 to 200 megohms (0.15 megohm internal resistance). **Test Voltage 1000 V:** 0 to 0.8 megohm (0.5 megohm internal resistance); 0.2 to 10 megohms (0.3 megohm internal resistance); 4 to 400 megohms (0.3 megohm internal resistance). Test voltage ranges are on rated current of 1 mA.

Accuracy: Resistance ranges, ±1.5% FS; voltage ranges, ±1.5% FS. **Power Required:** 9 VDC (six 1.5 volt batteries). **Size:** 9.6″ w. x 4.13″ d. x 5.3″ h. Weight, 4.9 lbs.

Simpson Model 401 Insulation Tester—Includes batteries, carrying strap, permanently connected leads with test probe and operator's manual. Net Each..... **$395.00**

INSTRUMENTS THAT STAY ACCURATE

MODEL 408 PORTABLE ILLUMINATION LEVEL METER

Model 408 illumination level meter for a wide range of measurements of illumination intensity under natural and artificial lighting conditions. By use of an accessory tube, it can also measure luminance of self-luminous or illuminated by ambient light surfaces. It can also serve as exposure meter with an appropriate table. **Ranges:** 0–15/50/150/500 foot candles; 0–1500/5000/15000/50000 foot candles with x 100 slip-on extension filter. **Light Sensitive Element:** 1.8″ dia. selenium photocell corrected to eye response. **Luminance Measurement:** Using slip-on x 2 tube ranges, 0–300/1000/3000/10000 cd/m²; tube aperture, 1.52″ dia.; test area diameter, 1.7 times distance. **Scale:** Longest scale arc, 2.8″; shortest scale arc, 1.92″. **Accuracy:** ±5%. **Size:** 3.2″ w. x 1.6″ d. x 4.6″ h. Weight, .62 lb.

Simpson Model 408 Illumination Meter—With remote senser, filter x 100 range extension, tube for luminance measurement, high impact plastic carrying case and instruction manual. Net Each..... **$145.00**

MODEL 410 PORTABLE PHOTO TACHOMETER

Model 410 measures the speed of motors, generators, machines and rotating parts of all kinds up to maximum speed of 50,000 rpm without making contact with the rotating body. Horizontal working position. **Ranges:** 1500–5000–15000–50000 rpm. **Accuracy:** ±2.5% FS. **Operating Temperature:** 0 to 40° C. **Pick-Up Head Sensitivity:** From 0.2″ to 2″ with light marking on dark background or reverse; from 2″ to 12″ with reflective marking on non-reflective background or reverse. **Input Resistance:** Greater than 10,000 ohms. **Movement:** Core magnet movement with pivot spring loaded suspension. **Power Required:** Indicating instrument, one 9 volt battery; pick-up head, two 1.5 volt batteries. **Size:** Indicating instrument, 3.6″ w. x 1.77″ d. x 5.98″ h.; pick-up head, 1.42″ w. x 1.9″ d. x 8.0″ h. Weight, indicating instrument .9 lb. and pick-up head of .7 lb.

Simpson Model 410 Photo Tachometer—Complete with batteries and instruction manual. Net Each..... **$205.00**

MODEL 886 SOUND LEVEL METER

- **SETS THE PERFORMANCE STANDARDS FOR MEASURING NOISE AND SOUND LEVELS, INDOORS OR OUT**
- **MEETS O.S.H.A. AND WALSH-HEALY REQUIREMENTS**

Quickly, accurately measures noise (or sound level) anywhere in accordance with O.S.H.A. and Walsh-Healy requirements. Helps check PA installations, small auditoriums, industrial acoustics, outdoor speakers, municipal noise. Simple and easy to operate, this rugged instrument offers all solid state reliability. Has built-in tripod mount and optional safety wrist strap. Output jack permits use with recorders and analyzers. Rugged, calibrated ceramic microphone. Full coverage, 40 to 140 dB with A, B and C weightings. Conforms to ANSI standard S1.4-1971, Type 2. Comes complete with two 9-volt batteries which provide 50 hours operational life. **Sound Level Range:** 40–140 dB in 10 dB increments; 20 μNewtons/m² as 0 dB reference. **Weighting:** 3 selectable networks for A, B or C curves per ANSI S1.4, Type 2. **Accuracy:** Meets requirements of ANSI S1.4, Type 2. **Meter:** 0–100 μA full scale, taut band movement; 2½″ dial has end marks −5 dB to +10 dB. **Response Speed:** Selectable fast or slow modes as required by ANSI S1.4-1971, Type 2. **Output:** 1.2 V rms open circuit for full scale meter indication; source impedance, 620 ohms; connector is Switchcraft 850 min. phone jack. **Harmonic Distortion:** Less than 0.5% (0.1% typical), 32–8,000 Hz (C weighting, meter at full scale). **Calibration:** Adjustable with screwdriver from side of case; requires calibrated sound pressure source coupled to the mike. **Magnetic Field Influence:** 50 or 60 Hz field of 1 Oersted (80 A/meter) will cause approx. 45 dB indication with C weighting when meter is oriented for maximum sensitivity to the field. **Temperature Range:** −10° C to +50° C, operating; −40° C to +60° C, storage with batteries removed. **Temperature Coefficient of Sensitivity:** −0.01 dB/° C at full scale meter indication. **Humidity:** 0 to 90% RH, operating. **Power Required:** Two 9-volt batteries (Burgess 2U6 or equiv.) supplied. **Size:** 3.03″ w. x 1.87″ d. x 10.07″ h. molded high impact, gray plastic case; internally shielded with electronic circuit packaged on flexible PC board. Brass insert on case bottom threaded ¼″-20 for tripod. Weight, 1 lb., nominal.

Simpson Model 886 Sound Level Meter—With batteries and operator's manual. Net Each..... **$250.00**
Simpson Model 00217 Carrying Case—Net Each.... **34.20**
Simpson Model 00576 Safety Wrist Strap—Net Each. **3.00**

MODEL 890 SOUND LEVEL CALIBRATOR

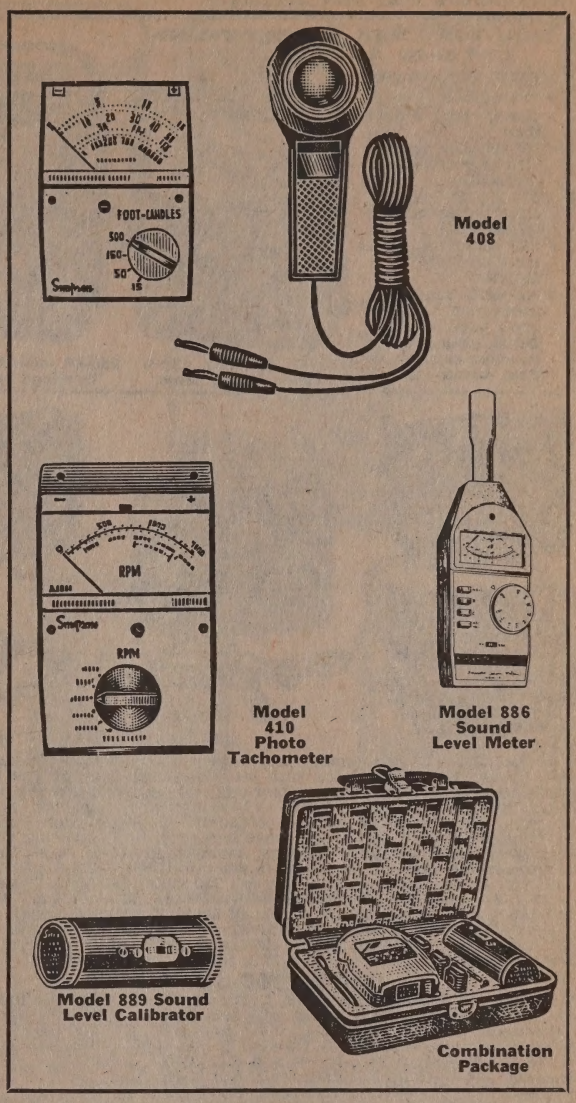
Sound level calibrator is used to calibrate the ceramic microphone on Model 886 Sound Level Meter. This tester is completely self-contained, features a single fumble-free control and yet provides a precise 1000 Hz sound-pressure level. Built-in LED indicator checks for adequate battery voltage. **Frequency:** 1000 Hz. **Pressure Level:** 114 dB ref. 20 μN/m². **Accuracy:** ±1 dB at 23° C and 760 mm mercury pressure. **Temperature Range:** 0 to +50° C operating. **Humidity:** 95% RH and +30° C. **Power:** 9-volt battery operation. **Size:** 5¼″ lg. x 2″ dia. Weight, 13.5 oz.

Simpson Model 890 Sound Level Calibrator—Complete with batteries, adjusting screwdriver and operator's manual. Net Each..... **$100.00**

SPECIAL COMBINATION PACKAGE

For increased convenience on and off locations for fast and accurate measurements. Includes one Model 886 sound level meter, one Model 890 calibrator, three spare 9 V batteries, one calibrator adjusting screwdriver and one wrist strap. Protective case included.

Simpson No. 12622 Combination Package—Net Each. **$380.00**



MODEL 884 SOUND LEVEL METER

Quickly and accurately measures noise (or sound level) anywhere in accordance with O.S.H.A. and Walsh-Healy requirements. Has built-in tripod mount and optional safety wrist strap. Output jack permits use with recorders and other testers. **Sound level range:** 50–130dB; **Weighting:** Type A per ANSI S1.4-1971 for Type 2; **Accuracy:** Meets requirements of ANSI S1.4-1971 for Type S2A; **Output:** 1.2V rms open circuit for full-scale meter indication, 100 ohms output impedance; **Size:** 3.03″ w. x 8.18″ h. x 1.87″ d.; **Weight:** 13.5 oz.

Simpson Model 884 Sound Level Meter—With batteries and operator's manual. Net Each..... **$195.00**

SPECIAL COMBINATION PACKAGE

Includes one Model 884 sound level meter, one Model 890 calibrator, microphone wind screen, three spare 9 V batteries, calibrator adjusting screwdriver, wrist strap, and operator's manual.

Simpson No. 12616 Combination Package—Net Each. **$300.00**

MODEL 888 OCTAVE BAND FILTER

A rugged, solid-state instrument for precision laboratory use or with the Simpson Model 886 Sound Level Meter by direct cable connection for octave band analysis of noise. Complies with ANSI S1.1-1971, DIN45651, and IEC255 (1966) requirements. Has bench-mount handle and in-the-field carrying case with shoulder strap; built-in LED battery test indication. **Center Frequencies:** 31.5, 63, 125, 250, 500, 1000, 2000, 4000, and 8000 Hz, switch selectable; **Filter Gain:** 0, +10, and +20dB, switch selectable with bypass provision; **Power Required:** Two 9 V batteries (Burgess 2U6 or equiv.) supplied; **Size:** 7.19″ d. x 6.01″ w. x 2.6″ h.; **Weight:** 2.6 lbs.

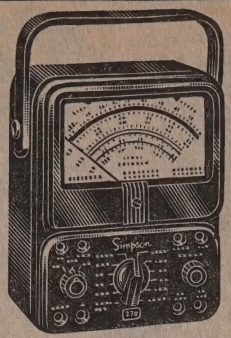
Simpson Model 888 Octave Band Filter—With batteries, carrying case, screwdriver, cable, and operator's manual. Net Each..... **$400.00**

Simpson Test Equipment, Cases

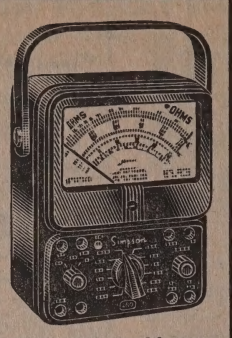
INSTRUMENTS THAT STAY ACCURATE

260® VOM'S WITH TAUT BAND METER MOVEMENT

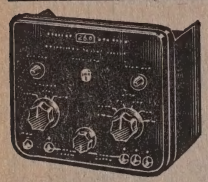
- **260 series 6**
- **260-6M with mirror scale**
- **260-6P with push-button overload protection**
- **261-2 with ±1.5% DC accuracy and mirror scale**
- **250 with 50 mV drop for solid-state circuits**
- **255 with temperature range**
- **270-4 with ±1.25% DC accuracy, temperature compensation, mirror scale**



260-6M, 261-2, 270-4 with Mirror Scale



260-6P with Pushbutton Overload Protection



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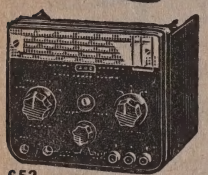

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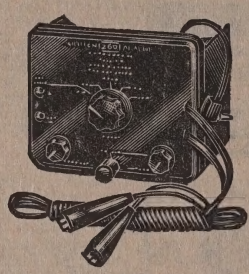

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653, 661

150

Features: Self-shielding annular taut band meter movement; increased linearity and stability; input protected with internal 1-amp fuse; greater repeatability; mirror scale with a knife-edge pointer on three models. **Other Features:** Polarity reversing switch for easier, faster DC measurements; no lead reversing. Easy-to-read scales with black and red spread-out for faster, more positive reading. Less circuit loading; AC voltage range sensitivity of 5,000 ohms/volt. Adjust-A-Vue handle for prop-up convenience. Available in roll-top case. Come complete with leads and manual. **AC Volts (5,000 ohms/V):** 0–2.5–10–50–250–500–1000 volts (0.1 μF capacitor in series through 250 volts). **DC Volts (20,000 ohms/V):** 0–.25–1–2.5–10–50–500–1000 volts. **DC Current:** 0–50 μA (250 mV drop); 0–1–10–100–500 mA; 0–10 A (250 mV drop). **dB Scale (1 mW–600 ohms):** −20 to +10; −8 to +22; +6 to +36; +20 to +50. **Resistance:** 0–2K ohms–200K ohms–20 megs (Rx1–x100–x10K); 12, 1200 and 120K ohms centers, respectively. **Scale Length:** 4.2". **Size:** 5¼" x 7" x 3⅛". Shpg. Wt., 6 lbs.

260-6, 260-6M, 260-6P

Lowest priced models of the series, features good accuracy with full range coverage. Choice of scale: 260-6 comes with standard scale; 260-6M has mirror scale. **Accuracies:** AC volts ±3% F.S., 0–2.5 to 0–1000. DC volts ±2% F.S. through 1000. DC current ±1.5% F.S. through 50 μA; ±2% 0–1 mA to 0–10 A. Resist., ±2.5° of arc, Rx1; ±2.0°, Rx100 and Rx10,000.

Simpson 260-6—With standard scale. Net Each..... **$75.50***

Simpson 260-6M—With mirror scale. Net Each..... **78.50***

Simpson 260-6P—Same as 260-6, but features protective overload circuit with reset button that pops out when an overload is present. Net Each.... **$115.00***

MODEL 261-2 HIGH ACCURACY VOM

With mirror scale, knife-edge pointer and special calibration circuit to increase accuracy. Diode overload protection prevents movement burnout even on 200,000% overload. **Accuracies:** AC volts ±3% F.S., 0–2.5 to 0–1000; ±4% F.S., 0–5000. DC volts ±1.5% F.S. through 1000; ±2.5%, 0–5000. DC current ±1.0% F.S., 0–50 μA; ±1.5%, 0–1 mA to 0–10 amps. Resistance ±2.0° of arc, Rx1; ±1.5°, Rx100 and Rx10,000.

Simpson Model 261-2—Net Each..... **$85.50***

MODEL 270-4 HIGH ACCURACY VOM

Features self-shielded annular meter movement with taut band; temperature compensated circuitry. Mirror scale with knife-edge pointer. **Accuracies:** AC volts ±2.0% F.S., 0–2.5 to 0–1000. DC volts ±1.25% F.S. through 1000. DC current ±0.75% F.S., 0–50 μA; ±1.25% F.S., 0–1 mA to 0–10 amps. Resistance ±1.5° of arc, Rx1; ±1.0°, Rx100 and Rx10,000.

Simpson Model 270-4—Net Each..... **$95.00***

***For Roll-Top Case Version**—Add suffix **RT** (i.e., 260-6PRT). Add.... **9.50**

MODEL 250 50-mV DROP VOM

Same as 260-6 except as follows: **AC/DC Volts:** Added ranges of 0–0.050 VDC; 0–500 VAC/DC. **Current:** Same but 50 mV drop on all ranges, plus 250 mV drop on 0–50 μA range only (±1% F.S. accuracy). Diode protected.

Simpson Model 250—With standard scale. Net Each.... **$81.00**

MODEL 255 WIDE TEMP., 50-mV DROP VOM

Same as 260-6 except as follows: **AC/DC Volts:** Added 0–0.05 V and 0–1 VDC ranges. **Current:** 0–50 μA (50 and 250 mV drop; ±1% F.S. accuracy); 0–1–10–100–500 mA (50 mV drop); to 250 amps AC using adapter. No dB scale. **Temp. Range:** +100° F to +1050° F. With leads, prods and 5' thermocouple lead. Diode protected.

Simpson Model 255—With standard scale.

Net Each..... **$95.00**

ACCESSORIES FOR ABOVE VOM'S

Model	Description	Net Each	Model	Description	Net Each
0248†	Roll-top case only	$15.25	0805	Ever-Redy vinyl case	$20.50
0507†	10 kV DC voltage probe	19.75	0549	Same, but with storage	23.25
0161†	10 kV AC voltage probe	22.00	0574	Snap-on probe case, 0549	7.00
0509†	30 kV DC voltage probe	22.00	0163‡	5' thermocouple lead	8.25
0505	5 kV AC safety probe	5.25	7500†	Banana plugs; allig. clips	4.25
0506	5 kV DC safety probe	5.25	7538†	Banana plugs; test prods	4.50
1818	Leather carrying case	16.75	0115	Leads, removable clips	5.25

†Also used with older 260-3 VOM. ‡For Model 255 only.

"ADD-A-TESTERS"
260 ADAPTER SERIES

Converts Simpson 260 VOM family (250, 255, 260, 261, 270-4) into nine different testers with a quality previously found only in individual pieces of test equipment. Just plug in one adapter, and you have added another application; no complicated connections. Take only ½ to ⅓ storage space of individual testers. Each combination of Add-A-Tester and 250, 255, 260, 261, 270-4 is self-contained and self-powered. All adapters provide for normal usage of basic tester without disconnecting adapter. Cannot be used with roll-top cased models.

MODEL 650 TRANSISTOR TESTER

Beta Ranges: 0–10–50–250, (F.S.). **Beta Accuracy:** Adapter, ±3%; with 250, 255 or 260, ±5% (nominal); with 261 or 270, ±4% (nominal). **Ico Range:** 0–100 μA. **Ico Accuracy:** Adapter, ±1%; with 260, ±3% (F.S.); with 261 or 270, ±2% (F.S.).

Simpson Model 650 Adapter—Net Each.. **$49.50**

Simpson Model 7545 Test Lead—Net Ea... **2.40**

MODEL 651 DC VTVM

Voltage Ranges: 0–.5/1.0/2.5/5.0/10/25/50/100/250/500. **Accuracy:** ±1%; with 250, 255 or 260, ±3% (F.S.); with 261 or 270, ±2% (F.S.). **Input Impedance:** More than 10 megs, all ranges.

Simpson Model 651 Adapter—Net Each.. **$55.00**

Simpson Model 733 Ground Lead—Net... **3.25**

MODEL 652 TEMPERATURE TESTER

Temperature Range: −50° F to +100° F; +100° F to +250° F. **Accuracy:** ±2° (nominal) with 250, 255, 260, 261 or 270. **Sensing Element:** Thermistor. Three lead positions provided.

Simpson Model 652 Adapter—Net Each.. **$55.00**

Centigrade Scale, add..... **1.95**

MODEL 653 AC AMMETER

Ranges: 0–0.25/1/2.5/12.5/25 amps. **Accuracy:** Adapter, ±2%; with 250, 255, 260, 261 or 270, ±3% F.S. **Frequency Range:** 50–3,000 Hz.

Simpson Model 653 Adapter—Net Each.. **$35.00**

MODEL 654 AUDIO WATTMETER

Load Ranges: 4, 8, 16, 600 ohms. **Wattage:** Continuous—25 watts (8, 600 ohms); 50 watts (4, 16 ohms). Intermittent—50 watts (8, 600 ohms); 100 watts (4, 16 ohms). **Accuracy:** Adapter, ±5%; with 250, 255 or 260, ±10% (nominal); with 261 or 270, ±7% (nominal). **Direct Reading Scale:** From 17 microwatts to 100 watts.

Simpson Model 654 Adapter—Net Each.. **$37.50**

MODEL 655 MICROVOLT ATTENUATOR

Ranges: 2.5 microvolts to 250,000 microvolts, continuously variable in decade steps. **Frequency:** DC to 20 kHz. **Accuracy:** Adapter, ± ½ dB; with 250, 255, 260, 261 or 270, ±1 dB.

Simpson Model 655 Adapter—Net Each. **$33.00**

MODEL 656 BATTERY TESTER

Checks all radio and hearing aid batteries up to 90 volts at the manufacturer's recommended load, or any external load. **Accuracy:** Adapter, ±1%; with 250, 255 or 260, ±3% (F.S.); 261 or 270, ±2% (F.S.).

Simpson Model 656 Adapter—Net Each.. **$33.00**

MODEL 657 MILLIOHMMETER

Ideal for accurate measurements of low resistance windings in meters, generators and transformers; ammeter and milliammeter shunts; and contact resistance in switches and relays. **Ranges:** 0–0.1/0.25/0.5/1.0 ohm. **Accuracy:** Adapter, ±½%; with 260, ±2% (F.S.); with 261 or 270, ±1½% (F.S.).

Simpson Model 657 Adapter—Net Each.. **$57.50**

MODEL 661 DC AMMETER

Dependable, portable DC ammeter for use in testing automotive accessories and electrical systems, DC supplies, industrial DC control systems, welding, etc. **Range:** 0–1/2.5/5/10/25 amps. **Accuracy:** Adapter, ±½%; with 250, 255 or 260, ±2% (F.S., nominal); with 261 or 270, ±1½% (F.S., nominal).

Simpson Model 661 Adapter—Net Each.. **$35.00**

MODEL 150 CLAMP-ON AMMETER

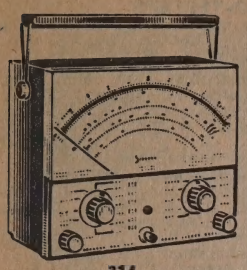
AC ammeter adapter permits current measurement without breaking circuit. Plugs into any VOM on this page. Reads on 0–2.5 VAC scale. **Ranges:** 0–5–10–25–50–100–250 amps AC. With 4' cord.

Simpson Model 150—Net Each..... **$29.50**

METER SAFE/GUARD

Use with Series 1, 2, 3 or 4 Simpson 260 or any other 20,000 ohms/volt VOM. Installs instantly to prevent damage to meter movement regardless of polarity with currents up to 200 mA, AC or DC.

Simpson Model 12621—Net Each..... **$2.30**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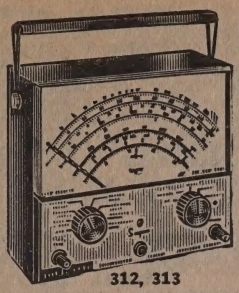
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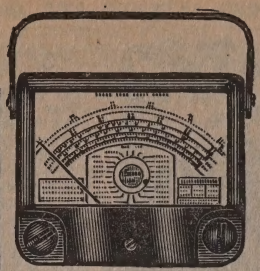
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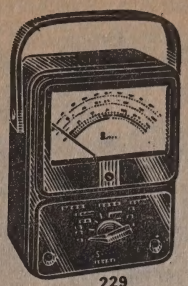
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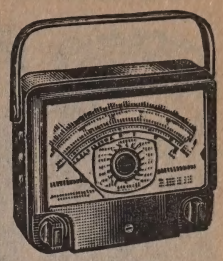

262-3, 269-3

MODEL 314 SOLID STATE AC-DC VOM

Most advanced solid state field effect VOM for general service use. Battery operated portable model accurately measures low-level voltages, current and semiconductor circuit resistances in low power ohms. **Accuracies:** ±2% of FS, DC; ±3% of FS, AC; ±3° arc, resistance. **AC Volts:** 0–0.01–0.03–0.1–0.3–1–3–10–30–100–300–1000; 10-meg input impedance; with probe multiplier on x10, 100-meg. **DC Volts:** 0–0.05–0.1–0.3–1–3–10–30–100–300–1000; 10-meg input impedance; with probe multiplier on x10, 100-meg. **Ohms:** Rx1, x10, x100, x1K, x10K, x100K, x1M; 10 ohms center and 1K ohms maximum on Rx1. **AC and DC Current:** 0–0.01–0.1–1–10–100–1000 mA; frequency response, 30 to 100,000 Hz shunted by 45 pF for AC; 100 mV voltage drop on all ranges except 1000 mA, 125 mV voltage drop. **dB:** −60 to +62 dB, eleven ranges. **Power Required:** One 1.5 "D" cell; two 1.5 V "AA" cells; one 9 V battery; all batteries replaceable through external access battery compartment at rear of instrument. **Size:** 7¾" x 6¾" x 4⅝". Weight, 5¼ lbs.
Simpson Model 314—With AC/DC ohms probe, batteries and instruction manual Net Each..... **$220.00**

MODEL 313 SOLID STATE AC-DC VOM

Portable instrument with VTVM features, VOM convenience. Operates for over 300 hours on 9-volt transistor battery, with high accuracy and high impedance. Rugged design with self-shielding movement, shock-proof and overload-protected. Fully protected voltage ranges. Reliable FET transistor input, 7" scale. Battery test position. Frequency and temperature compensation assure high accuracy of ±3% full-scale, AC and DC. **AC Volts:** 0–0.3–1–3–10–30–100–300–1000; 10-meg input impedance. **DC Volts:** 0–0.3–1–3–10–30–100–300–1000; 11-meg input impedance. **Response:** ±0.5 dB, 20 Hz to 100 kHz on ranges to 3 volts; 20 Hz to 20 kHz on ranges to 100 volts. **Ohms:** Rx1, x10, x100, x1K, x10K, x100K, x1M; 10-ohm center. **DC Current:** 0–0.1–1–10–100–1000 mA. **Size:** 7¼" x 6¾" x 3¾". Weight, 4¼ lbs. **$155.00**
Simpson Model 313—With leads, probe, manual. Net.

MODEL 312 VTVM

Up to 40% less circuit loading then conventional VTVM's; input resistance 16 megs instead of the usual 11. Easy-to-read 7" scale. Ideal for solid state tests with ½-volt range. **Accuracy:** ±3% FS, AC and DC; ±3° arc, resistance. **Frequency Response:** ±3%, 15 Hz to 3 MHz, thru 150 VAC; ±1 dB, 10 kHz to 250 MHz with RF probe; usable to 40 V rms. **DC Volts:** 0–0.5–1.5–5–15–50–150–500–1500 (16 megs imped.). **AC Volts:** 0–1.5–5–15–50–150–500–1500 V rms (1 meg min. imped.); 0–4–14–40–140–400–1400–4000 V p-p. **Resistance:** R x1, x10, x100, x1K, x10K, x100K, x1M; 10-ohm center. **Power:** 105/125 VAC, 50/60 Hz. **Size:** 7¼" w. x 6¾" h. x 3¾" d. Weight, 4¾ lbs. **$120.00**
Simpson Model 312—With probe and manual. Net..

MODEL 263 AC-DC DUAL SENSITIVITY VOM

Overlapping ranges for greater accuracy; ±1½% DC and ±3% AC, full scale. Diode overload protection against burnout (even on 200,000% overload). External battery compartment for easy replacement; takes 1½-volt alkaline type for greater stability on low ohms scale. **AC Volts:** 0–2.5–7.5–30–150–750 at 10K ohms/volt; 0–5–15–60–300–1500 at 5K ohms/volt. **DC Volts:** 0–.15–.75–3–7.5–30–75–300–750–3000 at 20K ohms/volt; 0–.3–1.5–6–15–60–150–600–1500–6000 at 10K ohms/volt. **Output Ranges:** 0.1 μF capacitor in series thru 300 VAC. **Ohms:** 0–500–5K–50K–500K, 0–5–50 megs; 4.5 ohms center scale. **DC Current:** All ranges ±1½% accuracy. At 150 mV, 0–75 μA, 0–.75–7.5–75–750 mA and 0–7.5 amps; at 300 mV, 0–150 μA, 0–1.5–15–150 mA and 0–1.5–15 amps. **dB:** −20 to +75.5 dB, ten ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs. **$115.00**
Simpson Model 263—With test leads; manual. Net...

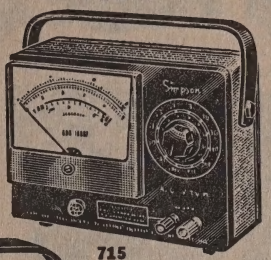
MODEL 715 AC VTVM

High sensitivity VTVM for the audio field. **Accuracy:** ±5% of full scale. **Sensitivity:** 10 mV full scale on lowest range. **Frequency Response:** ±1 dB, 10–400,000 Hz. **Input Impedance:** 1 meg minimum at 1 kHz shunted by 25 pF. **Internal Multipliers:** ±1% precision resistors. **Volts:** 0–0.01–0.03–0.1–0.3–1–3–10–30–100–300 rms. **dB:** Total range, −52 to +52 dBm. **Zero dBm:** 1 mW in 600 ohms. **Scale:** −12 to +2 dB. **Input Power Required:** 110–125 V rms, 50–60 Hz at 10 watts. **Size:** 7½" x 5½" x 3". Wt., 3¾ lbs. **$97.50**
Simpson Model 715—Complete with manual and shielded input cable. Net Each.....

MODEL 229 AC LEAKAGE TESTER

Tests 120 and 240 VAC appliances and equipment for current above the human "threshold of perception". Measures as low as 5 μA, detects shorts and near shorts. Overload protection. **Ranges:** 0–0.3–1–3–10 mA; 0–150, 300 volts; battery test. **Accuracy:** ±2% at 60 Hz. **Input Impedance:** 1500 ohms, shunted by shaping network; 500K on voltage ranges. **Size:** 5¼" w. x 3½" d. x 7" h. Weight, 3 lbs.
Simpson Model 229—With test leads and manual. Net Each..... **$99.50**

ACCESSORIES LISTED ON ANOTHER SIMPSON PAGE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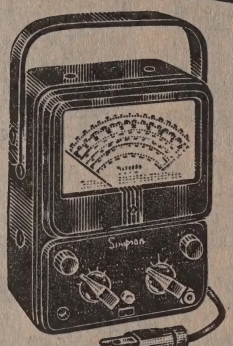
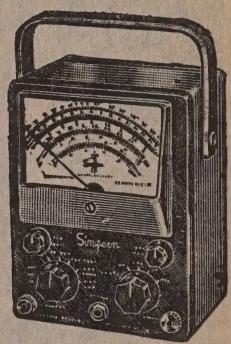

303-2


311-3

MODEL 262-3 AC-DC VOM

Compact design covers 33 ranges on easy-to-read 7" scale with repetitive accuracy. Diode overload protection. Self-shielded meter movement and spring-backed jewels. **AC Volts:** 0–3–8–40–160–400–800 at 5K ohms/volt and ±4% accuracy. **DC Volts:** 0–1.6–8–40–160–400–1600–4000 at 20K ohms/volt and ±3% accuracy. **Output Ranges:** 0.1 μF capacitor in series thru 160 VAC. **Ohms:** 0–500–5K–50K–500K; 0–5–50 megs; 4.5 ohms center scale. **DC Current:** ±3% accuracy, 0–80–160 μA; 0–1.6–16–160 mA; 0–1.6–8 amps. **dB:** −12 to +45.5 dB; four ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs. **$99.00**
Simpson Model 262-3—With test leads; manual. Net..

IMPROVED MODEL 269-3 AC-DC VOM

Self-shielded Taut-Band movement with spring-backed jewels; stops damage to pivots due to shock and vibration. External battery compartment for easy replacement. Input protected by 1.5-amp fuse. **AC Volts:** 0–3–8–40–160–400–800 at 5K ohms/volt and ±3% accuracy. **DC Volts:** 0–1.6–8–40–160–400–800–1600 (±2%)–4000(±3%) at 100K ohms/volt. **Output Ranges:** 0.1 μF capacitor in series thru 160 VAC. **Ohms:** 0–200–20K–200K; 0–2–20–200 megs; 12 ohms center scale. **DC Current:** ±2% accuracy 0–16–160 μA; 0–1.6–16–160 mA, 0–1.6–8 amps. **dB:** −12 to +45.5 dB; four ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs.
Simpson Model 269-3—With test leads, 4000 VDC probe extension and manual. Net Each..... **$125.00**

MODEL 303-2 AC-DC VTVM

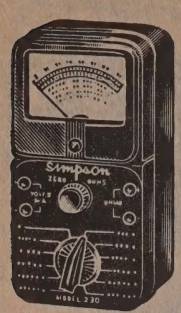
Features easy-to-read 4½" scale. **AC Volts:** 0–1.2–12–60–300–1200 (±5% FS). **DC Volts:** 0–1.2–12–60–300–1200 (±3% FS). **AF Volts:** 0–1.2–12–60. Frequency flat to 100 kHz on the three low AC ranges. **RF Volts:** 20 V max.; frequency 20 kHz to 100 MHz with RF probe. **Ohms:** 0–1K–100K; 0–1–10–1,000 megs (centers at 10, 1K, 10K, 100K and 10 megs, respectively). **dB:** −20 to +63; 5 ranges. **Input Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 5¼" x 7" x 3⅛". Net Weight, 4 lbs.
Simpson Model 303-2—Complete with VDC probe, VAC-ohm probe, ground lead and manual. Net Each.. **$97.50**
Simpson Model 303-2RT—In roll top case. Net Ea.. **$104.50**
Simpson Model 303-2 Dual—For 220/110 volts. Net. **103.50**

MODEL 311-3 AC-DC VTVM

High 22 meg DC input impedance reduces circuit loading. **AC Volts:** 0–1.5–5–15–50–150–500–1,500 rms (±5% FS). **Peak-To-Peak Volts:** 0–4–14–40–140–400–1,400–4,000. **DC Volts:** Same ranges as AC (±3% FS). **AF Volts:** Same ranges as AC (30 Hz to 110 kHz, ±5%). **RF Volts:** 0–1.5–5–15–50–150 with probe (50 Hz to 100 MHz, 0–150 V rms). **Frequency Response:** ±5% to 100 kHz; to 250 MHz with probe. **Ohms:** 0–1K–10K–100K; 0–1–10–100–1,000 megs (centers at 10, 100, 1K, 10K, 100K, 1 meg and 10 megs, respectively). **Input Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 7½" x 5⅝" x 4½". Weight, 5 lbs.
Simpson Model 311-3—With AC-DC ohms probe, ground lead and manual. Net Each..... **$97.50**

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE



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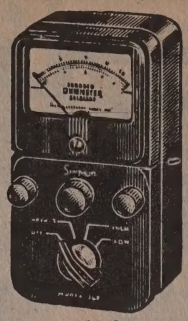

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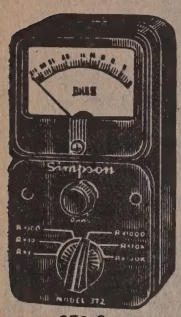

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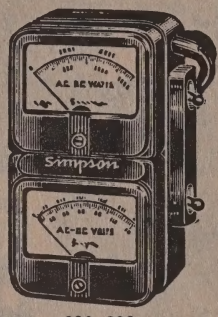

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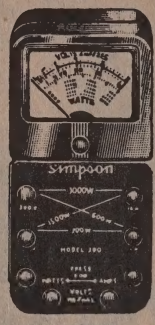
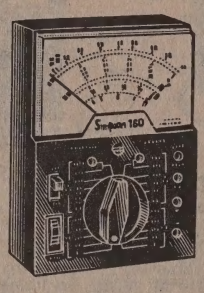


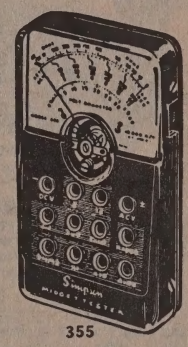
390

NEW... Improved Accuracy

160 Handi-VOM

Now ±2% DC and ±3% AC





355

AC-DC VOLT-OHMMETERS

COMPACT MODEL 160 Handi-VOM

Small, lightweight model with sensitivity and range of full size VOM. Range selector and polarity reversing switches. Diode overload protection. **AC Volts:** 0-2.5-10-50-250-500-1000 at 5K ohms/volt. **DC Volts:** 0-.25-1.0-2.5-10-50-250-500-1000 at 20K ohms/volt. **Ohms:** 0-3000-30K-300K; 0-3-30 megs. **DC μA:** 0-50. **DC mA:** 0-1-10-100-500. **dB Scale:** −20 to +10; −8 to +22, +6 to +36, +20 to +50. **Accuracy:** ±3% FS, AC; ±2% FS, DC. **Size:** 4⅜" x 3⅜" x 1⅜". Net Wt., 12 oz.
Simpson Model 160—Complete with alligator clip leads and manual. Net Each..... **$65.00**

MODEL 355 MIDGETESTER®

Compact meter with 100 μA self-shielded core meter movement; 10,000 ohms/volt sensitivity. **AC Volts:** 0-3-12-60-300-1200. **DC Volts:** 0-3-12-60-300-1200. **Ohms:** 0-10K-100K; 0-1-10 megs., 120, 1.2K, 12K and 120K ohms center, respectively. **Accuracy:** ± 3% DC; ± 5% AC; ± 3° ohms. **Frequency Response:** Essentially flat to 10 kHz. **Movement:** Self-shielded core magnet permits use without interference from metals or magnetic fields. **Size:** 2¾" x 4½" x 1". Net Weight, 8 oz.
Simpson Model 355—Complete with leads and manual. Net Each..... **$55.00**

ACCESSORIES FOR TESTERS ON THIS PAGE

Model	For Instrument	Description	Net Ea.
2055	160	Probe tip lead	$4.00
8375	230-2, 240-4, 372	Allig. clips and elbow terms.	3.75
8376	Micro-Testers	Allig. clips and spade terms.	3.75
8379	Micro-Testers	Test prods and spade terminals	4.50
8381	230-2, 240-4, 372	Test prods and elbow terminals	4.50
8418	390	Test cord assembly	9.25
8600	355	Test prods	4.25
2225	160	Carrying case	12.75
3011	Micro-Testers*	Leatherette-covered case	10.50
3413	391, 392	Leatherette-covered case	14.00
4299	Micro-Testers*	Ever-Redy leather case	12.75
6355	355	Ever-Redy leather case	7.00
8073	387	Ever-Redy vinyl case	14.00

*Except Models 391 and 392.

SIMPSON MICRO-TESTERS

General purpose, extra-compact test instruments available in a variety of models. **Size:** 3" x 5⅞" x 2½", Net Wt., 1½ lbs.

MODEL 240-4 AC-DC VOLT-OHM-MILLIAMMETER

For high voltage applications. Sensitivity, 1,000 ohms/volt. **AC Volts:** 0-15-150-750-3000. **DC Volts:** 0-15-75-300-750-3000. **Ohms:** 0-3K-300K; 30 and 3K ohms center respectively. **DC Current:** 0–15–150–750 mA. **Accuracy:** VDC ±3% FS; VAC ±4% FS; DC resistance ±3° of linear arc.
Simpson Model 240-4—With leads and manual. Net Ea. **$49.50**

MODEL 230-2 AC-DC VOLT-OHM-MILLIAMMETER

For telephone and marine uses. **AC Volts:** (1000 ohms/volt) 0-10-250-1000. **DC Volts:** (1,000 ohms/volt) 0-10-50-250-1000. **Ohms:** 0-1K-100K. **DC Current:** 0-10-50-250 mA. **Accuracy:** VDC, ±3% FS; VAC, ±4% FS; DC resistance ±3° of linear arc.
Simpson Model 230-2—With leads and manual. Net Ea. **$49.50**

MODEL 370 AC AMMETER

Self-contained current transformer (use on 60 Hz only) and indicating instrument. **Ranges:** 0-1-2.5-5-10-25 amps. **Accuracy:** ± 5% of full scale.
Simpson Model 370—Net Each..... **$45.00**

MODEL 375 DC AMMETER

Covers a wide range without auxiliary shunts. Ideal for unmetered power supplies in radio and TV shops. **Ranges:** 0-1-2.5-5-10-25 amps. **Accuracy:** ± 3% of full scale.
Simpson Model 375—Net Each..... **$45.00**

MODEL 362 LOW-OHMMETER

Makes accurate checks on low-current circuits. Reads from 0.1 to 25 ohms across two ranges, 0-5 and 0-25. Accuracy within ±3° of linear arc length. Ideal for checking motor armatures and fields, switch and relay contact resistances, industrial electrical equipment, shorts in TV and radio chassis wiring, between generator windings and grounds, etc. Draws only 5 mA for long battery life; uses 1½-volt flashlight batteries.
Simpson Model 362-2—Complete with calibrated test leads. Net Each..... **$47.50**

MODEL 372-2 OHMMETER

Features a wide range of measurements from 0.2 ohm to 50 megohms in six ranges. **Ranges:** 0-500-5K-50K-500K ohms; 0-5-50 megs. Center scale values: 5, 50, 500, 5K, 50K, 500K ohms. **Accuracy** ±3° of linear arc.
Simpson Model 372-2—Complete with test leads and manual. Net Each..... **$47.50**

MODELS 391 AND 392 AC-DC VOLT-WATTMETERS

For simultaneous readings of AC or DC volts and watts. Two separate 3" square meters; built-in cord and plug for connection to line outlet; separate toggle switches for range selection. **Volts:** 0–130–260. **Watts:** 0–1500–3000, 391; 0–1000–5000, 392. **Accuracy:** ±3% of full scale. With cord, plug and manual. **$79.50**
Simpson Model 391 AC-DC Volt-Wattmeter—Net Ea.
Simpson Model 392 AC-DC Volt-Wattmeter—Similar to Model 391 except watt ranges: 0-1000-5000. Net Each. **$90.00**

MODEL 390 AC VOLT-AMP-WATTMETER

Most popular tester for measuring AC/DC volts, AC amps and AC watts on one meter. Wide coverage permits servicing nearly any appliance. Rugged design. **Volts:** 0-150-300. **Amps:** 0-3-15. **Watts:** 0–300–600–1500–3000. **Accuracy:** ±3% of full scale.
Simpson Model 390—Complete with break-in plug, test leads and manual. Net Each..... **$90.00**

MODEL 371 AC VOLTMETER

For testing line voltages applied to motors, heating equipment and other industrial uses. **Ranges:** 0-150-300-600 volts. **Accuracy:** ±3% of full scale.
Simpson Model 371—Net Each..... **$45.00**

MODEL 376 AC VOLTMETER

Rectifier type, 1000 ohms/volt. Useful where limited current occurs in circuit. Ideal as output meter when used with proper capacitor. **Ranges:** 0-5-10-25-50-100-250-500-1000 volts. **Accuracy:** ±5% of full scale.
Simpson Model 376—Net Each..... **$45.00**

MODEL 377-2 DC VOLTMETER

Resistance 1000 ohms/volt for radio servicing and industrial applications. **Ranges:** 0-1-2.5-5-10-25-50-100-250-500-1000 volts. **Accuracy:** ±3% of full scale.
Simpson Model 377-2—Net Each..... **$45.00**

MODEL 373 DC MILLIAMMETER

General purpose design for plate and screen grid measurements on tubes, etc. **Ranges:** 0-1-5-10-25-50-100-250-1000 mA. **Accuracy:** ±3% of full scale.
Simpson Model 373—Net Each..... **$45.00**

MODEL 378 AC MILLIAMMETER

Five ranges for a wide variety of testing: Transformers, vacuum tubes, etc. With current transformer built-in. **Ranges:** 0–5–25–100–250–1000 mA. **Accuracy:** ±5% of full scale.
Simpson Model 378—Net Each..... **$45.00**

MODEL 374 DC MICROAMMETER

Basic movement sensitivity, 50 μA with self-contained shunts for other ranges. Use with external resistors or multipliers as high sensitivity voltmeter at 20K ohms/volt. Can be shorted out of circuit using selector knob. **Ranges:** 0–50–100–250–500–1000 μA. **Accuracy:** ±3% of full scale.
Simpson Model 374—Net Each..... **$45.00**

MODEL 379 BATTERY TESTER

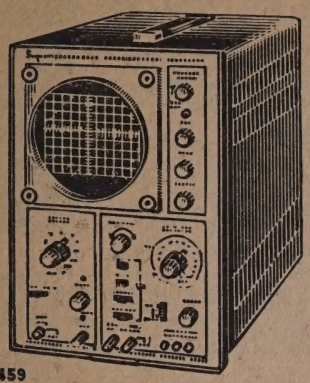
Accurate indication of all flashlight, hearing aid (mercury), transistor and portable radio batteries. **Ranges:** 0-1.5-4.5-6-7.5-9-15-22.5-30-45-67.5-90 volts.
Simpson Model 379—With test leads and manual. Net **$45.00**

MODEL 387 APPLIANCE TESTER

Millivoltmeter for fast, accurate gas unit servicing. Place probe across thermocouple terminals, test for correct value. **Accuracy:** ±3%, full-scale. **Range:** 0–10–30–100–300–1000 mV. **Size:** 3" x 5⅞" x 2½". Weight, 1½ lbs.
Simpson Model 387—Net Each..... **$47.50**

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE

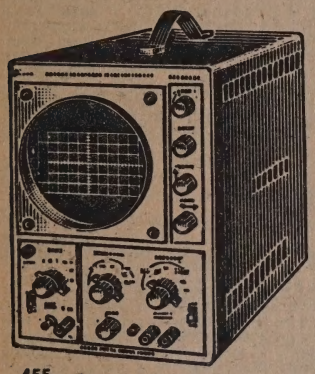


459

MODEL 459 GENERAL INDUSTRIAL 5-INCH OSCILLOSCOPE

Solid state, automatically triggered, 5″ scope ideal for the design, production and servicing of industrial communications and consumer electronic products. Illuminated 8 cm x 10 cm graticule has amplitude and vector markings. Unit accepts standard scope camera or light hood. Has P1 filter. Regulated power supplies maintain stable deflection, time base, brightness and focus. **Vertical Amplifier Bandwidth:** DC coupled, DC to 15 MHz (−3 dB); AC coupled, 2 Hz to 15 MHz (−3 dB). **Vertical Amplifier Sensitivity:** 11 calibrated steps from 10 mV/cm to V/cm (±3%). Variable gain control provides continuous coverage. **Vertical Amplifier Input Impedance:** 1 megohm ±2%, 35 pF approx. **Horizontal Amplifier Sweep Frequency Ranges:** 0.5 sec/cm to 0.2 μsec/cm in 20 calibrated steps. 5X magnifier extends sweep to 40 nsec/cm. Has additional range positions for TV-H and TV-V. **Horizontal Bandwidth:** DC coupled, DC to 1 MHz (−3 dB). **Horizontal Sensitivity:** Variable w/500 mV/cm max. **Horizontal Amplifier Input Impedance:** 200 kohm ±10%, 40 pF approx. **Calibration Voltage:** 1 kHz square wave, 5 V, 0.5 V and 50 mV peak-to-peak (±3%). **Power Source:** Line voltage, 120 VAC or 240 VAC, 50-60 Hz (±10%). **Power Required:** 90 VAC max. **Operating Temperature Range:** 0° to 40° C. **Size:** 8¾″ w. x 20″ d. x 12¼″ h. Weight, 30 lbs.

Simpson Model 459 Oscilloscope—With all front and rear panel controls, shielded input cable, line cord and operator's manual. Net Each..... **$450.00**



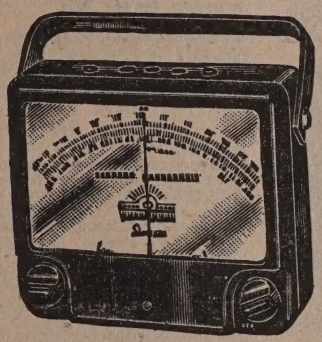
455

MODEL 455 GENERAL PURPOSE OSCILLOSCOPE

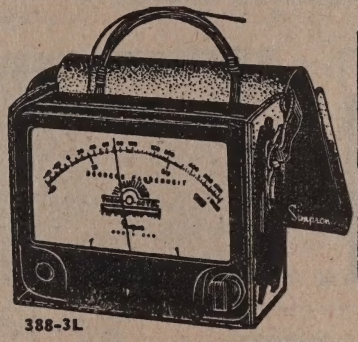
DC coupled general purpose oscilloscope with retrace blanking for color TV servicing and industrial applications. CRT measures and displays sharp waveforms with uniform intensity trace over entire viewing area in low parallax and high contrast graticule. Unit accepts scope camera, light hood and vector inputs. **Vertical Amplifier Bandwidth:** DC coupled, DC to 10 MHz (−3 dB); AC coupled, 2 Hz to 10 MHz (−3 dB). **Vertical Amplifier Sensitivity:** 9 calibrated steps from 10 mV/cm to 5 V/cm ±3%; vertical gain control provides continuous coverage. **Vertical Amplifier Input Impedance:** 1 megohm ±5%, 42 pF max. **Sweep Frequency Ranges:** 1 Hz to 200 kHz in 5 overlapping ranges. **Horizontal Amplifier Bandwidth:** DC coupled, DC to 500 kHz (−3 dB); AC coupled, 2 Hz to 500 kHz (−3 dB). **Sensitivity:** 300 mV/cm; x 1 x 10 step attenuator and fine control. **Input Impedance:** 1 megohm ±10%, 50 pF max. **Cathode Ray Tube:** 5″ round type 5 UP 1-F with 6 x 10 cm display area and 1.5 kV acceleration voltage. **Calibration Voltage:** 1 kHz square wave, 500 mV (p-p), ±5%. **Power Required:** 120/240 VAC, 50/60 Hz, as indicated on the back of instrument (operating range, 105 to 125 or 210 to 250 VAC), 100 VA max. **Intensity Modulation:** 30 V p-p. **Size:** 8″ w. x 16½″ d. x 10⅜″ h. (approx). Weight, 24 lbs. approx.

Simpson Model 455 Oscilloscope—With all front and rear panel controls, shielded input cable, 5 ft. line cord and operating manual. Net Each..... **$325.00**

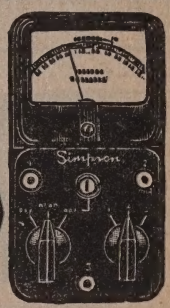
Simpson Model 07548—Low capacitance 10 to 1 probe for Model 455. Net Ea...**$17.50**



389-3L



388-3L



385-3L

MODEL 385-3L TEMPERATURE METER

Compact instrument ideal for measuring temperatures from −50° F to +70° F under conditions where fast, accurate readings are important. Thermistor sensing element. Large 3″ meter. **Accuracy:** ± 1° F, center scale; ± 2° F at ends. **Size:** 3″ x 5⅞″ x 2½″. Net Weight, 1½ lbs.

Simpson Model 385-3L—For three probes. Complete with one Model 0010 15′ thermistor type lead, and manual. Net Each..... **$55.00**

MODEL 389-3L THERM-O-METER®

Dual-range temperature tester permitting an accuracy of ± 2° F. Dial has combination Centigrade and Fahrenheit scales. **Ranges:** − 50° F to + 100° F; + 100° F to + 250° F. **Accuracy:** ± 2° F. Supplied in three-lead model only. **Size:** 7Ⅾ″x6″x2Ⅾ″. Wt., 4 lbs.

Simpson Model 389-3L—With internal battery, manual, and one Model 0010 15′ thermistor type lead; additional probes are available. Net Each..... **$105.00**

TEMPERATURE TESTER ACCESSORIES

For 385-3L or 389-3L			For 388 or 388-3L		
Model	Description	Net Ea.	Model	Description	Net Ea.
0789	Free air T probe	$16.25	0496	8′ service lead	$11.75
0010	15′ therm. lead	14.00	0190	Gen. purpose thermocouple	11.75
0216	Same, 30 ft.	14.00			
0415	Same, 50 ft.	15.25	0187	Surface temp. thermocouple, 1000° F max.	15.25
0416	Same, 100 ft.	18.50			
0417	Same, 150 ft.	23.25			
0790	Surface T probe	12.75	5262	Ever-Redy vinyl case†	18.00
8073	Ever-Redy Case*	14.00			

*Leather, 385-3L only. †For 388, 388-3L or 389-3L.

ACCESSORIES FOR OTHER TESTERS

Model	For Instrument	Description	Net Ea.
8463	269-3, others	Comb. test prods with allig. clips and elbow terms.	$ 3.75
0173	269 Series 1	16 kV high voltage probe	22.00
0181	269 Series 1	40 kV high voltage probe	22.00
0172	262 Series 1, 2	16 kV high voltage probe	22.00
0180	262 Series 1, 2	40 kV high voltage probe	22.00
5262	269-3, others	Ever-Redy vinyl case	18.00

MODEL 388-3L THERM-O-METER

Measures the temperature of gases, air, solids or liquids; over a range of from −50° F to +1000° F. Combined Fahrenheit and Centigrade scale. Thermocouple (iron-constantan) sensing element. **Accuracy:** ±1½ scale divisions. **Size:** 7Ⅾ″ x 6″ x 2Ⅾ″.

Simpson Model 388-3L—For three probes. With Adjust-A-Vue handle, one 0190 general purpose 8′ probe, internal battery, and instruction manual. Wt., 4 lbs. Net Ea.. **$115.00**

VOM AND VTVM ACCESSORIES

Model	For Instrument	Description	Net Ea.
0146	262-3	16 kV high-voltage probe	$23.25
0145	262-3	30 kV high-voltage probe	23.25
0158	263	Comb. 30 kV (10K ohms/V) and 15 kV (20K ohms/V) probe	21.00
0507	260-6, others	10 kVDC high-voltage probe	19.75
0509	260-6, others	30 kVDC high-voltage probe	22.00
0115	260-6, others	Comb. test prods, removable alligator clips, elbow terminals	5.25
0505	260-6, others	5 kVAC high-voltage probe	5.25
0506	260-6, others	5 kVDC high-voltage probe	5.25
0119	269-2, -3	16 kVDC high-voltage probe	23.25
0157	269-2, -3	30 kVDC high-voltage probe	23.25
5262	269-3, others	Ever-Redy vinyl case	18.00
1613	262-3, others	Sponge-lined vinyl case	18.50
0067	303-1	DC probe	7.00
0068	303-1	AC probe	7.00
0069	303-1	Ground lead	3.60
0073	303-1, -2	High frequency probe	14.75
0074	303-1	30 kVDC high-voltage probe	23.25
0805	260-5, others	Ever-Redy vinyl case	20.50
6379	303-1	Roll top safety case	15.25
0731	311-1	High frequency probe	22.00
0732	311-1, -2	High voltage probe	22.00
0733	311, 303-2	Ground lead	3.25
7594	311-1, -2	DC-AC/Ohms probe	14.00
0100	715	Input cable	5.75
0150	312, 303-2	AC/DC ohms probe	14.75
0152	312	High frequency probe	14.75
0155	312	30 kVDC high-voltage probe	23.25
0577	312, 313, 314,	Vinyl case with storage probe	19.75
1565	202	Sponge-lined vinyl case	22.75
0193	314	RF probe, 10 kHz to 250 MHz, ±1 dB	13.75
7509	383A	Test lead assembly	3.75

Simpson Test Equipment

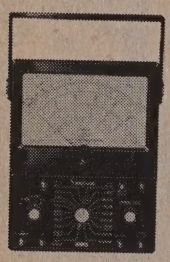
INSTRUMENTS THAT STAY ACCURATE

MODEL 257 MULTI-TESTER

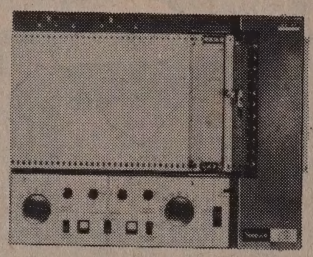
Similar to Model 256, with 100,000 ohms/volt DC sensitivity (20,000 ohms/volt AC). **Accuracy:** ±1.5% DC, ±2.5% AC. **DC Volts:** 0–0.1–0.5–2.5–10–25–100–250–1000–5000. **AC Volts:** 0–10–50–250–1000. **DC Current:** 0–10–50–250 μA; 0–1–5–25–100 mA; 0–1 amp. **DC Resistance:** Rx1 (30 ohms center scale), Rx1K, Rx100K, Rx10 meg (external 100–140 VDC supply needed). **AC Resistance:** Rx1 meg (1 meg center scale); external 100–240 VAC supply needed. **Capacitance:** 2000 pF to 5 μF (external 100–240 VAC supply needed. **Decibels:** −8 to +22, +6 to +36, +20 to +50. **Output Ranges:** 0.1 μF capacitor in series with AC voltage ranges, 10–250 VAC. **Size:** 4⅝″ w. x 3⅝″ d. x 9⅝″ h.
Simpson Model 257—With test leads, batteries and manual. Net Each..... **$95.00**

MODEL 260-6XL VOM

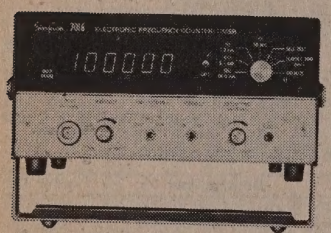
A new member of the 260 family for the special needs of the solid-state electronics industry. Has all the features of Model 260-6, plus extra ranges and features, low-power ohms capabilities, and extra shock and drop-resistant capabilities. **DC Volts (20,000 ohms/V.):** 0–0.25, 1, 2.5, 10, 25, 100, 250, 500, 1000; **AC Volts (5000 ohms/V):** 0–2.5, 10, 25, 100, 250, 500, 1000; **DC Current:** 0–50μA (250mV drop), 0–0.5 and 5mA (250mV drop), 0–5 and 50mA (252mV drop), 0–500mA (400mV drop), 0–5A (250mV drop); **AC Current:** Up to 250A with optional Model 150 Amp-Clamp Adapter; **dB Scale (1mW–600 ohms):** −20 to +10, −9 to +21, −1 to +29, +11 to +41, +19 to +49; **Resistance (conventional):** 0–1K ohms, 100K ohms, 1 meg, 10 megs (Rx1–x100–x1K–x10K) (6, 600, 6K, 60K ohm centers, respectively); **Resistance (low-power):** 0–1K ohms, 10K ohms (Rx1–x10) (20 and 200 ohm centers, respectively).
Simpson Model 260-6XL—Complete with batteries, test leads, and manual. Net Each..... **$90.00**
Simpson Model 260-XLM—With mirror scale. Net Each **93.00**
Simpson Model 260-XLP—Same as 260-XL, but features overload protection circuit. Net Each..... **$125.00**
Simpson Model 260-XLPM—With mirror scale. Net Each..... **128.00**



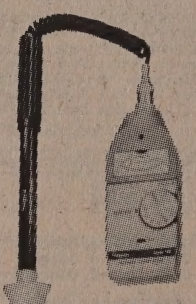
260



2745



7016



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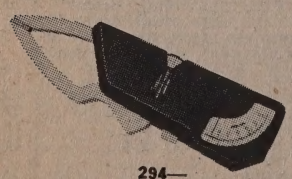


294—

MODEL 303-3XL SOLID-STATE FET VOM

A portable multimeter for field and factory electronic servicing, as well as design and component testing. IC's and LED's are combined in an all solid-state circuit for high input impedance, high sensitivity, and drift-free performance. Simplified dial places most measurements on same scale. Automatic LED "polarity" and "power on" indication. An AC charger (supplied) charges the self-contained, nickel cadmium "D" cell to provide up to 20 hrs. of continuous operation; the instrument can also be AC line operated. **AC and DC Volts (10 megohm impedance):** 0–0.03, 0.1, 0.3, 30, 100, and 300 (1000 VAC and 1000 VDC on separate jacks); **AC and DC Current:** 0–30μA, 1mA, 30mA (1A and 10A on separate jacks); **Resistance (low-power and diode ohms):** Rx1, Rx10, Rx100, Rx1K, Rx10K, Rx100K, Rx1 meg (10 ohms center scale).
Simpson Model 303-3XL—Complete with probe, test leads, battery, charger adapter, and manual. Net Each..... **$165.00**
Simpson No. 00074 HV (30KV) probe.—Net Each... **23.25**

MODELS 294, 295, 296 AMP-CLAMP METERS

A new series of lightweight instruments for troubleshooting on motors, relays, transformers, and control circuits. Load balance tests and alternating current measurements can be made without power interruption. **AC Current (all models):** 0–6, 15, 30, 60, 150, and 300A; **AC Voltage (Models 295 and 296):** 0–30, 150, 300, and 600V; **Resistance (Model 296):** 0–500 ohms (25 ohm center scale); **Size:** 10″ l. x 2.7″ w. x 1.4″ h; **Weight:** 14 oz.
Simpson Model 294—Net Each..... **$45.00**
Simpson Model 295—Complete with test leads and manual. Net Each..... **$53.00**
Simpson Model 296—Complete with test leads, battery, fuse and spare, and manual. Net Each..... **$71.50**
Simpson No. 02227 Probe and bracket—Net Each..... **2.75**
Simpson No. 02226 Carrying Case—Net Each..... **16.40**

MODEL 151 LINE SPLITTER

For use with Simpson Models 150, 294, 295 and 296 testers and other clamp-on units. Unit separates the two wires of an AC circuit for use of clamp-on meters; also provides 10X multiplication for low currents. Durable, high-impact housing withstands heavy-duty conditions.
Simpson Model 151—Complete with 2 ft. cord, 3-prong plug, and manual. Net Each..... **$7.15**

MODEL 7016 COUNTER-TIMER

An electronic frequency counter-timer for measuring frequency, elapsed time, and events. The 0.55″ planar display is easily readable. Other features include: display storage selection, automatic decimal point location, variable display time, manual reset, overrange and gate-time indications, high input impedance, and input overload protection. **Frequency:** 5 Hz to 50 MHz; **Gate time:** 10 msec. (0.1kHz resolution), 0.1 sec., 1.0 sec., 10 sec. (0.1 Hz resolution); **Accuracy:** ± 1 count ± time-base accuracy; **Elapsed Time:** 0.01 sec. to 19999.99 sec., based on 1,000,000 counts overrange; **Accuracy:** ± 1 count; **Self Test:** Internal 100kHz signal to test circuits and display.
Simpson Model 7016—With probe assembly, power cord, and manual. Net Each..... **$335.00**
Simpson Model 7016A—Same as Model 7016, but with more accurate internal oscillator. Net Each..... **$435.00**
Simpson Model 7016B—Same as Model 7016, but with BCD output. Net Each..... **$385.00**
Simpson No. 00238 Replacement Probe—Net Each.. **16.00**

MODEL 7026 ELECTRONIC COUNTER

Similar to Model 7016, but with extended measurement capabilities, such as: periods, ratios of two frequencies, time intervals, and totalizing. **Frequency:** 5 Hz to 50 MHz; **Gate Time:** 10 μsec. (0.1 MHz resolution), 100 μsec., 1 msec., 10 msec., 100 msec., 1 sec., 10 sec. (0.1 Hz resolution); **Accuracy:** ± 1 count ± time-base accuracy; **Period Display Range:** Single, 100 μsec. to 0.2 sec. Multiple, averaged, 100 msec. to 0.2 sec. Averaged, 1, 10, 100, 1000 sec.; **Resolution:** Single, 10 μsec. Multiple, averaged, 10 μsec.; **Accuracy:** ± 1 count ± time-base accuracy.
Simpson Model 7026—Complete with probe assembly, power cord, and manual. Net Each..... **$385.00**
Simpson Model 7026A—Same as Model 7026, but with more accurate internal oscillator. Net Each..... **$485.00**
Simpson Model 7026B—Same as Model 7026, but with BCD output. Net Each..... **$435.00**
Simpson No. 00238 Replacement Probe—Net Each.. **16.00**

MODEL 7020 HIGH-FREQUENCY SCALER

A solid-state scaler that will interface with Simpson Models 7016 and 7026 and other frequency counters to extend the frequency capability to 512 MHz. A front-panel switch selects direct frequency divisions of 1, 10, and 100. **Input f/1:** 10 MHz to 100 MHz, sine or square waves; **f/10:** 10 MHz to 512 MHz, square wave or 40 MHz to 512 MHz, sine wave; **f/100:** 10 MHz to 512 MHz, square wave or 40 MHz to 512 MHz, sine wave; **Sensitivity:** 50mV rms. min. to 2V rms. max., protected to 5V rms.
Simpson Model 7020—Complete with power cord, connectors and manual. Net Each..... **$450.00**

MODEL 380 MICROWAVE LEAKAGE TESTER

The Model 380 measures the amount of microwave leakage energy radiated by ovens, heaters, and other industrial equipment generating high power at 2450 MHz. The non-polarized probe permits selection of four distinct ranges for power-density measurements. The response time is variable. Built-in tripod mount. **Frequency:** 2450 MHz ± 10 MHz; **Power Density Ranges:** 0–2.5, 10, 25, and 100 mW/cm²; **Accuracy:** ± 1dB; **Response Time:** Fast–1.2 sec. max, Slow–3.0 sec. nominal; **Power Required:** Two 9 V batteries, supplied; **Size:** 8.18″ l. x 3.03″ w. x 1.87″ d.; **Weight:** less than 1 lb.
Simpson Model 380—Complete with probe, extra Styrofoam spacer, two batteries, and manual, all in carrying case. Net Each..... **$195.00**

MODEL 2745 X-Y RECORDER

The Model 2745 features full X-Y plus Y-T strip-chart recording. It is ideal for precision recording of sound-level variations in conjunction with Simpson Models 884 and 886 Sound Level Meters, with or without the Simpson Model 888 Octave Band Filter. Recording can be accomplished with ink using a felt-tip pen or inkless using a stylus and pressure-sensitive paper. Any range can be zero suppressed from 0 to 100%. The zero value can be placed anywhere on the chart for bipolar recording. **Ranges:** 1, 2, 5, 10, 20, 50 mV/cm, both axes; **Intermediate Ranges:** Sensitivity is continuously adjustable from 40 to 100% of any range selected; **Drive Speeds:** 1, 2, 4, 10, and 20 cm/sec., or 1, 2, 4, 10, and 20 min./cm.; **Power Required:** Eight 1.5 V "D" cells; **Size:** 8.08″ w. x 10.24″ d. x 3.59″ h.; **Weight:** 7.72 lbs.
Simpson Model 2745—Complete with two rolls of paper, two pads of sheets, two stylii, test leads, dust cover, batteries, and manual. Net Each..... **$1295.00**

INSTRUMENTS THAT STAY ACCURATE

MODELS 2750, 2755, 2760, 2761 AND 2762 MINIATURE STRIP CHART RECORDERS

Strip chart recorders mount in less panel space than a 4½" meter. Use specially formulated paper which requires no ink. Will record continuously for over a month at 20 mm per hour, using a single roll of chart paper. **Chart Speeds:** 20 mm (0.79") and 120 mm (4.72") per hour switch selectable. Quick-change gear boxes are available to provide other speeds. **Chart Paper:** Pressure sensitive, 2.6" wide x 50' long. **Take-Up Reel:** Built-in, automatic motor driven. **Motor Drive:** Synchronous, 3 VA, 90–160 VAC, 60 Hz. Supplied complete with two rolls of chart paper, panel mounting bracket, 60-inch three-wire line cord, test leads (Models 2761 and Model 2762) and manual. **Size:** 3¾" square by 9⅛" deep. Weight, 4 lbs. approximate.

MODEL 2750 MINIATURE CHART RECORDERS

Miniature single or dual-channel recorders available with AC and DC voltage, AC and DC current ranges; and as 0–1 mA/0–1 mA dual channel unit. **Accuracy:** ±1.5% of full scale. **Impression Rate:** 3 seconds.

Range	Net Each	Range	Net Each
0–10 DC microamps*	$211.75	0–0.4/25 DC millivolts‡	$297.00
0–50 DC microamps*	194.50	0–50 DC millivolts	178.25
0–100 DC microamps	183.50	0–5 AC amps	194.50
0–500 DC microamps	178.25	100–130 AC volts§	216.00
0–1 DC milliamps	178.25	0–150 AC volts	183.50
0–1/0–1 DC milliamps†	221.50	0–300 AC volts	183.50

*Impression rate: 6 seconds. †Dual channel; impression rate: 6 seconds; 5 times on one channel; 1 time on other channel. ‡Adjustable. §Segmental scale.

MODEL 2755 10-CHANNEL EVENT RECORDERS

Provides continuous recording of ten separate events. Records any variable that can be converted to an electrical value. **Accuracy of Recording:** 10 msec nominal pen response. **Impression Rate:** Continuous. **Power per Solenoid:** 1.2 watts except AC model, 2.2 VA.

Voltage	Voltage	Net Each
10 channels, 6 VDC	10 channels, 24 VDC	$243.00
10 channels, 12 VDC	10 channels, 115 VAC, 60 Hz	243.00
10 channels, 24 VAC, 60 Hz		243.00

SERIES 2760 SINGLE RANGE TEMPERATURE RECORDERS

Record for over a month unattended. Inkless, pressure sensitive paper. Switch selected chart speeds 20/120 mm per hour. Taut band movement is temperature compensated. Completely accurate up to 1.5% FS.

Simpson No.	Ranges	Sensor	Net Each
23100	−60° C to 0° C	Pt-100 Resis. Bulb	$205.25
23102	0 to +60° C	Pt-100 Resis. Bulb	205.25
23114	0 to +100° F	Pt-100 Resis. Bulb	205.25
23103	0 to +100° C	Pt-100 Resis. Bulb	205.25
23008	0 to +500° F	I/C Thermocouple	216.00
23009	0 to +800° F	I/C Thermocouple	216.00
23010	0 to +1500° F	C/A Thermocouple	216.00
23011	0 to +2500° F	C/A Thermocouple	216.00

MODEL 2761 TEMPERATURE RECORDER

Three built-in temperature ranges which are switch selected. **Temperature Range:** −50° F to +50° F; +50° F to +150° F; +150° F to +250° F. **Accuracy of Recording:** ±2° F over range of 0° to 120° F; ±3° F over balance of range. **Impression Rate:** 3 sec.

Simpson Model 2761 Temperature Recorder—Net Ea. **$205.20**

MODEL 2762 TEMPERATURE RECORDER

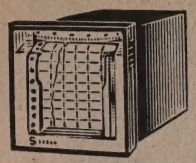
Dual channel features same range recorded on both channels, 2 inputs; two ranges switch selectable. **Temperature Range:** −40° F to +60° F; +50° F to +150° F. **Accuracy of Recording:** ±2° F. **Impression Rate:** 6 seconds; ten times on one channel, two times on the other channel.

Simpson Model 2762 Temperature Recorder—Net Ea. **$226.75**

TEMPERATURE SENSORS FOR SERIES 2760

Simpson No.	Description	Net Each
23235*	Stainless, .187" x 5", 10' leads	$38.75
23245†	Stainless, .187" x 5", 10' leads	22.05
21224†	Stainless overbraid, 235", 20 ga.	35.10
21223†	Glass cloth overbraid, 34", 30 ga.	5.85
21222†	Glass cloth overbraid, 137", 24 ga.	7.05
23246‡	Stainless, .187" x 5", 10' leads	22.05

*Pt-100 Resistance Bulb with 100 ohms resistance at 0° C. †I/C Thermocouple type with 10 ohms resistance. ‡C/A Thermocouple type with 10 ohms resistance.



Models 2750, 2761, 2762, Series 2760

Model 2755

MINIATURE RECORDERS USE JUST 3¾" X 3¾" OF PANEL SPACE

ACCESSORIES AND CHART PAPER

ACCESSORIES FOR 2750, 2755, 2761 AND 2762

Simpson No.	Description	Net Each
22392	Portable carrying handle	$23.25
22395	Plastic window for direct paper feedout	5.50
22301	Gear unit for 30/180 mm per hour speeds	31.50
22302	Gear unit for 60/160 mm per hour speeds	31.50
22303	Gear unit for 100/600 mm per hour speeds	31.50
22304*	Gear unit for 300/1800 mm per hour speeds	48.00
22305*	Gear unit for 600/3600 mm per hour speeds	48.00
22394†	Line cord, 3 wire, 60", with pigtail terminal	4.75
22393	Line cord, 3 wire, 60", with 117 VAC plug	5.25
22300	Gear unit for 20/120 mm per hour speeds	21.50

ACCESSORIES FOR 2761 AND 2762 ONLY

00789	Free air temperature probe	$16.25
00790	Surface temperature probe	12.75
00010	15-foot thermistor lead	14.00
00216	30-foot thermistor lead	14.00
00415	50-foot thermistor lead	15.25
00416	100-foot thermistor lead	18.50
00417	150-foot thermistor lead	23.25

*For use with Model 2755 recorders only. †For 2760 only.

CHART PAPER FOR 2750 AND 2755 RECORDERS

Box of 10 50-ft. rolls.

Simpson No. for 2750	Simpson No. for 2755	Calibration	Net, Box of 10 Rolls
22310	22380*	20 mm per hour, 30 divisions	$22.00
22311	.....	20 mm per hour, 50 divisions	22.00
22312	22381*	30 mm per hour, 30 divisions	22.00
22313	.....	30 mm per hour, 50 divisions	22.00
22314	22382*	60 mm per hour, 30 divisions	22.00
22315	.....	60 mm per hour, 50 divisions	22.00
22316	22383*	100 mm per hour, 30 divisions	22.00
22317	.....	100 mm per hour, 50 divisions	22.00

*2755 paper has 10 channel markings instead of 30 divisions.

CHART PAPER FOR SERIES 2760 PLATINUM RESISTANCE TYPE

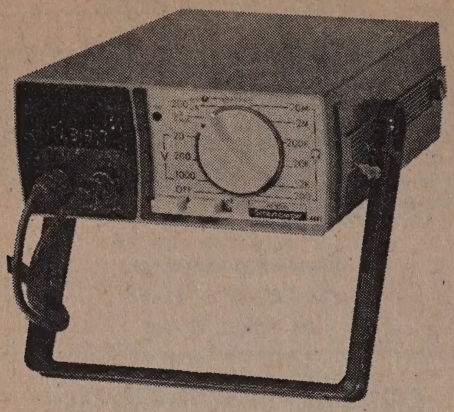
Simpson No.	Calibration	Net, Box of 10 Rolls
23200	20 mm per hour, 60° C	$22.00
23201	20 mm per hour, 100° C	22.00
23209	20 mm per hour, 0 to 100° F	22.00
23202	20 mm per hour, 150/300° C	22.00
23203	20 mm per hour, 200/400° C	22.00
23204	30 mm per hour, 60° C	22.00
23205	30 mm per hour, 100° C	22.00
23206	30 mm per hour, 150/300° C	22.00
23207	30 mm per hour, 200/400° C	22.00
23208	60 mm per hour, 60° C	22.00
23210	60 mm per hour, 150/300° C	22.00
23211	60 mm per hour, 200/400° C	22.00
23212	100 mm per hour, 60° C	22.00
23213	100 mm per hour, 100° C	22.00
23214	100 mm per hour, 150/300° C	22.00
23215	100 mm per hour, 200/400° C	22.00
	THERMOCOUPLE TYPE	
23248	20 mm per hour, 0 to 500° F	$22.00
23249	20 mm per hour, 0 to 800° F	22.00
23250	20 mm per hour, 0 to 1500° F	22.00
23251	20 mm per hour, 0 to 2500° F	22.00

CHART PAPER FOR 2761 AND 2762 RECORDERS

Simpson No. for 2761	Simpson No. for 2762	Calibration	Net, Box of 10 Rolls
23237	23241	20 mm per hour	$22.00
23238	23242	30 mm per hour	22.00
23239	23243	60 mm per hour	22.00
23240	23244	100 mm per hour	22.00

WESTON® Digital Test Instruments

MODEL 4442 DIGITAL MULTIMETER



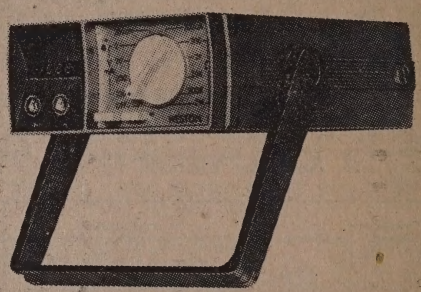
RANGES

DC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–1000 volts.
AC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–1000 volts.
DC Current: 0–1.99 μA; 0–1.999 mA.
AC Current: 0–199.9 μA; 0–1.999 mA.
Resistance: 0–199.9–1.999K–19.99K–199.9K–1.999M–19.99M ohms.
Conversion Rate: Approx. four per second.
Common Mode Rejection Ratio: 80 dB (approaches infinity on battery).
Normal Mode Rejection Ratio: 38 dB.
Temperature: 25° C ±3° C with guaranteed accuracy (operable from 0° to 50° C—derate accuracy).
Power Required: Four "C" size nickel cadmium cells (supplied); 115 VAC, 50–400 Hz.
Size: 5.45″ w. x 7″ d. x 2.25″ h. Weight, less than 2½ lbs.
Weston Model 4442 Digital Multimeter—Includes test probes and 117 VAC battery charger/AC converter. List Price . . . **$295.00***
Weston Model 4443 Digital Multimeter—Similar to Model 4442, but reads only DC current and voltage, and resistance. Ranges same as Model 4442. List Price **$250.00***

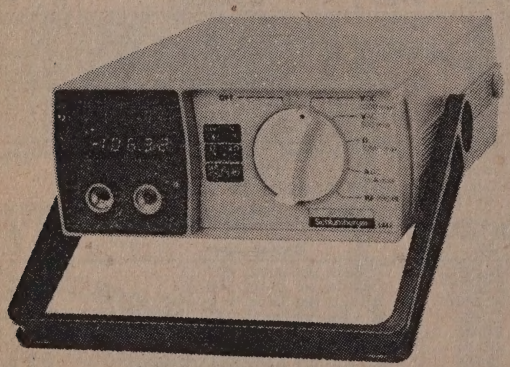
MODEL 4440 PORTABLE DIGITAL MULTIMETER

RANGES

DC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–999 volts.
AC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–999 volts.
DC Current: 0–199.9 μA.
AC Current: 0–199.9 μA.
Resistance: 0–199.9–1.999K–19.99K–199.9K–1.999M ohms.
Display: 1999 non-blinking; 0.19″ character size.
Conversion Rate: Approx. 4 per second.
Common Mode Rejection: 80 dB.
Normal Mode Rejection: 35 dB.
Temperature: 15° C to 35° C (10° C to 50° C with derated accuracy).
Power Required: Rechargeable or standard "C" batteries or 115 VAC, 50–400 Hz.
Size: 5.45″ w. x 7.25″ d. x 2.25″ h. Weight, less than 2½ lbs.
Weston Model 4440 Digital Multimeter—Comes with four Nicad "C" cells and battery charger. High impact molded plastic case. List Price **$269.00***



MODEL 4444 AC/DC AUTO RANGING DIGITAL MULTIMETER

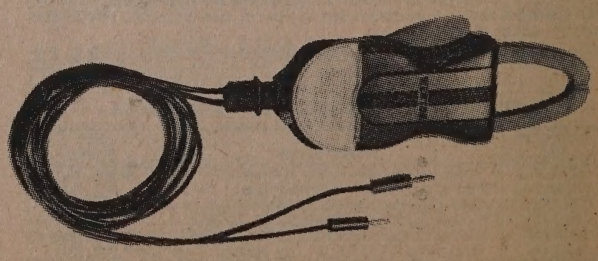


RANGES

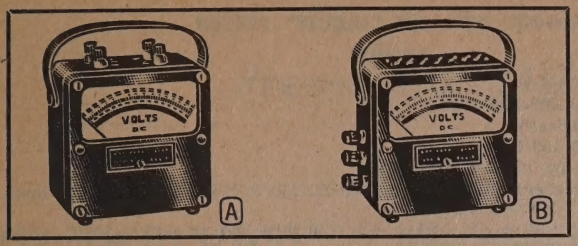
AC Volts: 0–100 mV; 0–1–10–100–500 volts.
DC Volts: 0–100 mV; 0–1–10–100–1000 volts.
DC Current: 0–10–100 μA; 0–1 mA.
Two Terminal Resistance: 0–1K–10K–100K–1M–10M ohms.
Input Sensitivity: 0–1–10–100 nA for DC current; 0–10–100 μV, 0–1–10–100 mV for all others.
Common Mode Rejection: Greater than 120 dB at DC rejection; greater than 130 dB at 60 Hz rejection.
Normal Mode Rejection: Greater than 60 dB at 60 Hz.
Readings/Second: Greater than 3/sec on DC and ohms; greater than 2/sec on AC.
Temperature Range: Operating, 0° to +45° C; storage, −30° C to +70° C.
Power Required: 117/234 VAC (10%–15%), 50/60 Hz.
Size: 5.45″ w. x 7″ d. x 2.25″ h. Shipping Weight, less than 2½ lbs.
Weston Model 4444 Digital Multimeter—Lightweight carrying case available as optional. List Price **$435.00***

CLAMP-ON AC CURRENT PROBE

The Model 9740-0275768 is a rugged, lightweight probe designed for one-hand use. For use with voltmeters having a 200 mV AC range at 1 megohm or higher impedance. Output is linear with respect to input and the probe is rated from 60–400 Hz. Output leads end in banana plugs. Accuracy is ±4% F.S. on 2 A range, ±3% F.S. on 20 A range and ±2% F.S. on 200 A range.
Weston Model 9740-0275768 Clamp-On Probe—List . . **$50.00**



★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, —5%; 10-24, —10%; 25 UP, —25%



MODEL 931 DC INSTRUMENTS (FIG. A)

Compact, light weight and accurate within ½ of 1%. Hand calibrated mirror scales and knife-edge pointers eliminate parallax errors. Scale length 4.04". Self-shielded permanent magnet moving coil. Size, 5¼" x 5" x 3¼". Approx. Weight, 2 lbs.

DC VOLTMETERS

1000 OHMS/VOLT

Weston No. 931-	Range	Scale Division	List Price*
1901003	50	100	$158.00
1901002	150	150	158.00
1905003	30/7.5/3	150	184.00
1905002	75/30/7.5	150	184.00
1905001	150/15/3	150	184.00
1905005	300/150/3	150	184.00
1905006	750/300/150	150	184.00
5000 OHMS/VOLT			
1906002	75/30/7.5	150	$205.00
1906004	150/15/3	150	205.00
1906006	300/150/3	150	205.00
1906005	500/100/10	100	205.00
1906001	750/300/150	150	205.00

DC MILLIAMMETERS

4904005	3/0.3/0.03	150	$201.50
4904004	15/1.5/0.15	150	201.50
4904003	150/15/1.5	150	180.50
4904002	1500/150/15	150	180.50
4904001	3000/300/30	150	180.50

DC MICROAMMETERS

5901003	100	100	$180.50
5902002	30	150	205.00
5902003	100	100	205.00
5902001	200	100	180.50

DC AMMETERS (SELF-CONTAINED TO 50 AMPS)

Scale Division: 100 (150 for ranges of 1.5, 3 A and their multiples).

Weston No. 931-	Range, Amps	List Price*	Weston No. 931-	Range, Amps	List Price*
2902007	5/0.5/0.05	$191.50	2902105	30/15/3	$191.50
2902008	5/2.5/0.5	191.50	2902013	50/5/0.5	191.50
2902006	10/1/0.1	191.50	2902002	50/10/2	191.50
2902009	10/5/1	191.50	2902001	50/20/5	191.50
2902003	15/3/1.5	191.50	2902004	50/25/10	191.50
2902012	25/10/2.5	191.50			

MODEL 432 DC AND SINGLE-PHASE AC WATTMETERS (FIG. A)

Electrodynamometer accurate within ½ of 1%. Power consumption: Potential circuit at 115 volts, 60 Hz, 1.2 watts, 1.2 volt-amperes; current circuit at 5 amperes, 60 Hz, 0.65 watt, 0.68 volt-ampere. Scale 4.04" l. Scale Division: 75, unless otherwise noted. Size, 5¼" x 5" x 3¼". Weight, 3¼ lbs., approx.

DC AND SINGLE PHASE 25-125 Hz

Weston No. 432-	Volts		Amps		Watts		List Price*
	Nor.	Max.	Nor.	Max.	High	Low	
9901001	150/75	200/100	1	1.5	150	75	$359.00
9901005	150/75	200/100	5	7.5	750	375	359.00
9901002	300/150	400/200	1	1.5	300	150	359.00
9901006	300/150	400/200	5	7.5	1.5 kw	75 kw	359.00
9901008	300/150	400/200	10	15	3 kw	1.5 kw	359.00
9901010†	300/150	400/200	20	30	6 kw	3 kw	359.00
9901011	300/150	400/200	50	75	15 kw	7.5 kw	359.00
9902005	150/75	200/100	10/5	15/7.5	1500/750	750/375	359.00
9902003*	200/100	260/130	5/2.5	7.5/3.75	1000/500	500/250	359.00
9902004	300/150	400/200	5/2.5	7.5/3.75	1500/750	750/375	359.00
9902007	300/150	400/200	10/5	15/7.5	3/1.5 kw	1.5/.75 kw	359.00

DC AND SINGLE PHASE 25-1000 Hz

9902013	300/150	400/200	5/2.5	7.5/3.75	1500/750	750/375	$389.50
9901015	300/150	400/200	5	7.5	1.5 kw	.75 kw	389.50

Scale Div.: *100; †60.

FOR LOW POWER FACTOR 25-125 Hz

9902009	—	300/150	—	5/25	300/150	150/75	$413.50
9902010	—	—	—	10/5	600/300	300/150	413.50

MODEL 433 AC INSTRUMENTS (FIG. B)

Movable iron type, horizontal operation, shielded from external magnetic fields. Well compensated for temperature changes. **Power Consumption:** 150 V range at 115 volts, 60 Hz, 2.5 watts, 2.5 VA. **Rated Accuracy:** .75%. **Frequency Coverage:** Alternating current at frequencies from 25 to 1000 Hz available. **Self-Contained Ranges:** Single, double and triple up to 750 volts. **Range Extension:** Higher ranges obtained with multipliers or by using Model 311 Potential Transformer in connection with a 150 volt range. **Size:** 3¼" x 5" x 5¼". Weight, 2½ lbs., approx.

AC VOLTMETERS

25-125 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
1901005	150	5300	150	$175.50
1901008	250	18,200	125	175.50
1902011	10/5	24/12	100	178.50
1903001	20/10	116/58	100	178.50
1903002	30/15	336/168	150	178.50
1903004	60/30	850/425	150	178.50
1903007	150/75	5300/2680	150	178.50
1903009	300/150	22,000/11,000	150	178.50
1905001	450/300/150	33,000/22,000/11,000	150	210.50
1906002†	600/300/150	44,000/22,000/11,000	150	210.50
1906003†	750/300/150	55,000/22,000/11,000	150	210.50

†Has extension on case for additional resistance.

25-1000 Hz

1903008	150/75	.....	150	$204.00
1903010	300/150	.....	150	204.00
1906001	600/300/150	.....	150	234.00
1907001‡	750/300/150	.....	150	288.00

‡Includes necessary external Model 9990, Type 52 resistance box.

AC AMMETERS

Similar to Fig. A in appearance. **Power Consumption:** 5 amps range at 5 amps, 60 Hz, 0.50 watt 0.52 VA. Single, double and triple ranges cover frequencies 25–500 Hz. Higher frequency coverage available. Triple range instruments have internal current transformer. All have two binding posts, double and triple range instruments have range selector switch. For ranges above 50 amps, Model 461 Current Transformer, Type 1 with 5 amps instrument is recommended.

25-500 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
2901001	1	0.48	100	$165.00
2901002	5	0.020	100	165.00
2901005	15	0.0038	150	165.00
2903004	2/1	0.12/0.48	100	190.50
2903001	5/2.5	0.02/0.08	100	190.50
2903005	10/5	0.0083/0.028	100	190.50
2930006	20/10	0.004/0.0108	100	190.50
2906002	3/1.5/0.75	0.18/0.43/0.59	150	262.00
2906001	5/2.5/1	0.13/0.26/0.37	100	262.00
2906005	10/5/1	0.030/0.070/0.37	100	262.00
2906006	10/5/2.5	0.030/0.060/0.075	100	262.00
2906007	15/7.5/1.5	0.023/0.044/0.19	150	262.00
2907001	20/5/2	0.040/0.19/0.30	100	262.00
2908001	30/7.5/3	0.0090/0.036/0.040	150	262.00
2909001	50/20/5	0.0084/0.0011/0.020	100	262.00
2909002	50/20/10	0.0073/0.0080/0.010	100	262.00

25-1000 Hz

2906003	5/2.5/1	—	100	$270.00
2909003	50/20/5	—	100	270.00

AC MILLIAMMETERS

Double ranges cover 25–1000 Hz. Double range instruments have range selector switch. Frequency span to 2500 Hz within ¾% accuracy possible.

25-500 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
4903005	150/75	30/120	150	$188.50
4903002	300/150	6.4/26	150	188.50
4903006	500/250	1.6/6.6	100	188.50

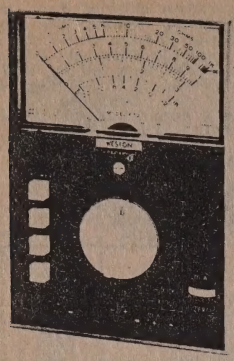
25-1000 Hz

4903001	100/50	.....	100	$198.00
4903003	500/250	.....	100	198.00

★QUANTITY DISCOUNTS

1-5	6-14	15-24	25 Up
List	List −5%	List −10%	List −15%

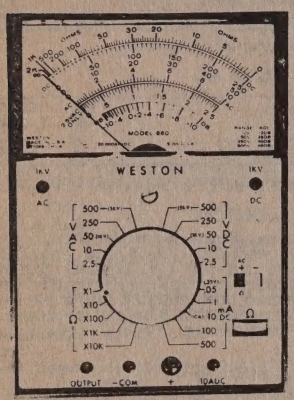
NOTE: ONLY THE MOST COMMON RANGES ARE LISTED. OTHER RANGES AND MODELS ON REQUEST.



MODEL 670 "IN-CIRCUIT" TESTER

RANGES

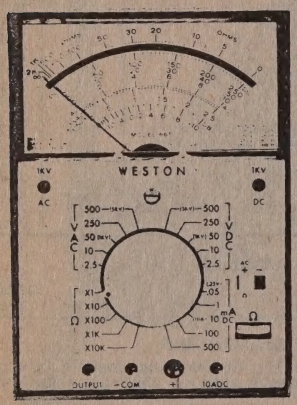
DC Millivolt: 0–100–300 mV.
DC Volts: 0–1–3–10–30–100–300 volts.
AC Millivolts: 0–100–300 mV.
AC Volts: 0–1–3–10–30–100–300 volts.
DC Milliamps: 0–3–10–30–100–300 milliamps.
Ohms: RX1 (10 ohms center scale)/RX10/RX100/RX1K/RX10K/RX100K/RX1 megohms; 7 normal and 7 low power ranges.
dB Scales: −40 to −18/−30 to −8/−20 to +2/−10 to +12/0 to +22/+10 to +32/+20 to +42/+30 to +52.
Accuracy: 2% DC volts; 3% AC volts; 5% DC current; 3% (of arc) ohms.
Sensitivity: 11.1 megohms DC, 10 megohms (100 pF) AC.
Power Required: 115 VAC, 60 Hz.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs.
Weston Model 670-2745080 "In-Circuit" Tester—Comes with line cord, standard probes and the special "In-Circuit" current probes. List Price.....**$249.50***



MODEL 660 VOM

RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2000 ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56. Measured with 1 mW on 600 ohm line.
Accuracy: 2% DC (1.5% on 50 μA range); 3% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 660-2714010 VOM—List Price.....**$72.00***



MODEL 661 HIGH ACCURACY VOM

RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2000 ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56. Measured with 1 mW on 600 ohm line.
Accuracy: 1% DC; 2% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 661-2714020 High Accuracy VOM—List Price.....**$83.00***

CLAMP-ON AC CURRENT PROBE

The Model 9970-0275769 is a rugged lightweight probe designed for one-hand operation. For use with meters having a 2.5 VAC range at 5000 ohms/volt sensitivity. Output is linear with respect to input and the probe rated from 60–400 Hz. Output leads end in banana plugs. Accuracy is ±3% F.S. on 5 A and 25 A ranges, ±2% F.S. on 125 A and 250 A ranges.
Weston Model 9970-0275769 Clamp-On Probe—List..**$40.00**

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, —5%; 10-24, —15%; 25 UP, —20%.

CRAMER ELECTRONICS

Presents a Total Video Concept

TO INCLUDE: AIDING YOU IN THE SELECTION OF EQUIPMENT, SERVICE AND PRODUCTION FACILITIES, AS WELL AS THE DUPLICATION AND DISTRIBUTION OF VIDEO SOFTWARE.

PRODUCTION

Cramer has a fully equipped staff ready to consult with you on the selection of the proper production facility, and the creation and critiqueing of both large and small Video programs.

EQUIPMENT

As a leading distributor of video hardware, we handle all major lines of equipment, some of which are listed in this catalog. Besides the ones listed, Cramer represents approximately 75 additional Video manufacturers that supply Video tape recorders, cameras, monitors, special effects generators and a variety of switching equipment for CCTV and CATV applications. Should your interest extend beyond one of the lines listed, please contact the Cramer office in your area and they will be happy to provide additional information.

SERVICE

Due to our nationwide network of offices, we are able to tailor a service program for your particular needs beyond the manufacturer's warranty period. Cramer's toll free number, 800-225-3768, allows you to call our national service headquarters and receive immediate information to help in the resolution of any service problem.

G.S.A. REQUIREMENTS

Cramer Electronics will make available, upon request, Government Service Administration price schedules to all customers who qualify for purchasing under a G.S.A. contract number. Most manufacturers listed in this catalog are on G.S.A. and a complete listing may be obtained by calling your local Cramer sales office.

DUPLICATION

Cramer has available, a tape duplication center with a staff of professionals ready to handle any duplication requirement, whether large or small. Please call the representative in your area for more information and pricing on our duplication service.

SPECIALIZED INVENTORY

Due to the specialized nature of today's market, Cramer Electronics will provide items tailored to your specific application. Whether it be particular tape lengths or modification to standard manufacturers' line items, we would be happy to discuss your requirements.

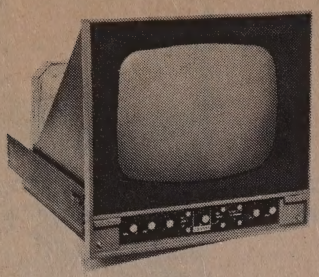
REPLACEMENT PARTS

Cramer Electronics, being a factory authorized service facility for all major lines of video equipment, maintains a large inventory of parts to support our sales and service efforts at our part facility located at 120 Hampton Ave., Needham, Ma. 02194.

SYSTEMS AND STUDIOS

We offer a full range of video equipment, from a simple one camera security system to the most elaborate color studios. Whether you want us to do the complete job or supplement your in-house capabilities, our experienced professionals can handle the entire job from start to finish. Should you desire to implement a video system in your company for the first time, our qualified engineers, technicians and training department are available to you to help make this first step successful with the least amount of complications.

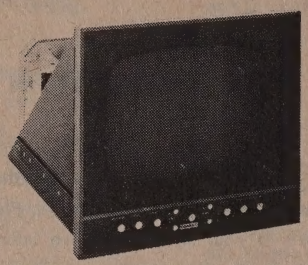
CONRAC CORPORATION Television Equipment



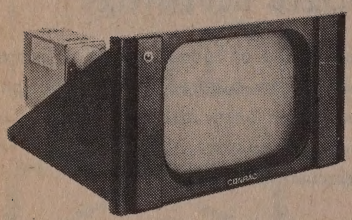
RQB Series Solid State Monitors, High Resolution

Conrac Number	Description
14″ CRT	
RQB14/C	Cabinet
RQB14/RS	Rack mount with slides
RQB14/N	Chassis only
RQB14/Y	Cabinet with mounting studs
17″ CRT	
RQB17/C	Cabinet
RQB17/RS	Rack mount with slides
RQB17/N	Chassis only
RQB17/Y	Cabinet with mounting studs
21″ CRT	
RQB21/C	Cabinet
RQB21/RS	Rack mount with slides
RQB21/N	Chassis only
RQB21/Y	Cabinet with mounting studs

QQA High Resolution Monitor



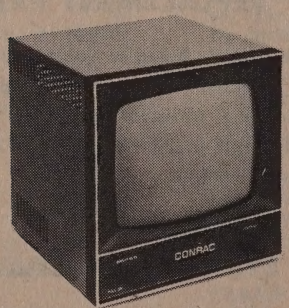
Conrac Number	Description
14″ CRT	
QQA14/C	Cabinet
QQA14/RS	Rack mount with slides
QQA14/N	Chassis only
QQA14/Y	Cabinet with mounting studs
17″ CRT	
QQA17/C	Cabinet
QQA17/RS	Rack mount with slides
QQA17/N	Chassis only
QQA17/Y	Cabinet with mounting studs
21″ CRT	
QQA21/C	Cabinet
QQA21/RS	Rack mount with slides
QQA21/N	Chassis only
QQA21/Y	Cabinet with mounting studs



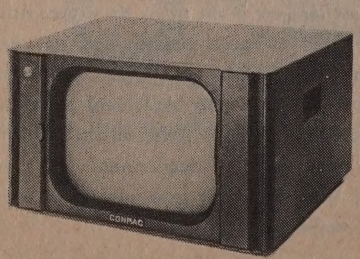
SNA Series Solid State Monitors, Broadcast/Industrial

Conrac Number	Description
9″ CRT	
SNA9/C	Cabinet
SNA9/RC	Rack mount; CRT centered
SNA9/2R	Twin 9″ CRT units, rack mount
SNA9/N	Chassis only
SNA9/RBL	Rack mount; L front panel blank
SNA9/RBR	Rack mount; R front panel blank
SNA9/RXL	Rack mount; accepts Tek 529 or 1480 on L side
SNA9/RXR	Rack mount; accepts Tek 529 or 1480 on R side
SNA9/RKL	Rack mount; accepts Tek 528 on L side
SNA9/RKR	Rack mount; accepts Tek 528 on R side
14″ CRT	
SNA14/C	Cabinet
SNA14/R	Rack mount
SNA14/RS	Rack mount with slides
SNA14/N	Chassis only
17″ CRT; with dynamic focus	
SNA17/C	Cabinet
SNA17/R	Rack mount
SNA17/RS	Rack mount with slides
SNA17/N	Chassis only
SNA17/Y	Cabinet with mounting studs
23″ CRT	
SNA23/C	Cabinet
SNA23/Y	Cabinet with mounting studs

ENA Series Solid State Low Cost Monitors



Conrac Number	Description
9″ CRT	
ENA9/C	Cabinet
ENA9/2R	Twin 9″ CRT units, rack mount
ENA9/N	Chassis only
ENA9/RBL	Rack mount; L front panel blank
ENA9/RBR	Rack mount; R front panel blank
ENA9/RKL	Rack mount; accepts Tek 528 on L side
ENA9/RKR	Rack mount; accepts Tek 528 on R side
12″ CRT	
ENA12/N	Chassis only
ENA12/C	Cabinet
ENA12/R	Rack mount



Conrac Number	Description
14″ CRT	
DZA14/C	Cabinet
DZA14/R	Rack mount
DZA14/RS	Rack mount with slides

DZA Series Solid State Broadcast Monitors

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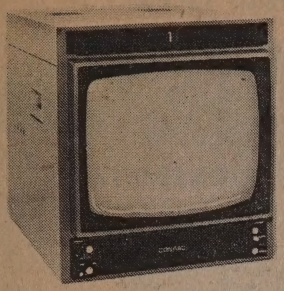
CONRAC CORPORATION Video Equipment

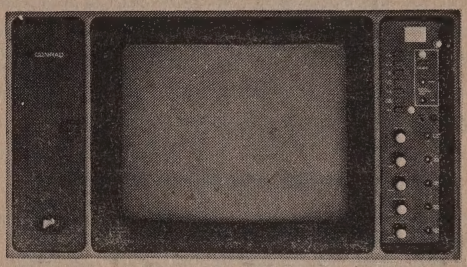


RHB/RHF/RHN Solid State Broadcast Color Monitors

Conrac Number	Description
19″ CRT; NTSC	
RHB19/C	Cabinet
RHB19/RS	Rack mount with slides
RHB19/Y	Cabinet with mounting studs
22″ CRT; NTSC	
RHB22/RS	Rack mount with slides
19″ CRT; PAL B, European	
RHF19/C	Cabinet
RHF19/RS	Rack mount with slides
RHF19/Y	Cabinet with mounting studs
19″ CRT; PAL M, Brazilian	
RHF19/C	Cabinet
RHF19/RS	Rack mount with slides
RHF19/Y	Cabinet with mounting studs
19″ CRT; RGB	
RHN19/C	Cabinet
RHN19/RS	Rack mount with slides
RHN19/Y	Cabinet with mounting studs
22″ CRT; RGB	
RHN22/N	Chassis only
25″ CRT; RGB	
RHN25/N	Chassis only
RHN25/C	Cabinet

5100 Industrial/ Educational Solid State Color Monitors

Conrac Number	Description
19″ CRT; RGB; preset controls	
5111C19	Cabinet
5111RS19	Rack mount with slides
5111Y19	Cabinet with mounting studs
19″ CRT; NTSC; preset controls	
5112C19	Cabinet
5112RS19	Rack mount with slides
5112Y19	Cabinet with mounting studs
19″ CRT; PAL B, European; preset controls	
5113C19	Cabinet
5113RS19	Rack mount with slides
5113Y19	Cabinet with mounting studs
19″ CRT; PAL M, Brazilian; preset controls	
5114C19	Cabinet
5114RS19	Rack mount with slides
5114Y19	Cabinet with mounting studs
19″ CRT; SECAM 50; preset controls	
5115C19	Cabinet
5115RS19	Rack mount with slides
5115Y19	Cabinet with mounting studs
25″ CRT; RGB; preset controls	
5111C25	Cabinet
5111Y25	Cabinet with mounting studs
25″ CRT; NTSC; preset controls	
5112C25	Cabinet
5112Y25	Cabinet with mounting studs
25″ CRT; PAL B, European; preset controls	
5113C25	Cabinet
5113Y25	Cabinet with mounting studs
25″ CRT; PAL M, Brazilian; preset controls	
5114C25	Cabinet
5114Y25	Cabinet with mounting studs
25″ CRT; SECAM 50; preset controls	
5115C25	Cabinet
5115Y25	Cabinet with mounting studs



5500 Professional, A/B Input, Preset Controls, Horizontal and Vertical Delay Solid State Color Monitors

Conrac Number	Description
12″ CRT; RGB	
5521C12	Cabinet
5521RS12	Rack mount with slides
5521N12	Chassis only
5521Y12	Cabinet with mounting studs
12″ CRT; NTSC	
5522C12	Cabinet
5522RS12	Rack mount with slides
5522N12	Chassis only
5522Y12	Cabinet with mounting studs
12″ CRT; PAL B, European	
5523C12	Cabinet
5523RS12	Rack mount with slides
5523N12	Chassis only
5523Y12	Cabinet with mounting studs
12″ CRT; PAL M, Brazilian	
5524C12	Cabinet
5524RS12	Rack mount with slides
5542N12	Chassis only
5524Y12	Cabinet with mounting studs
12″ CRT; SECAM 50	
5525C12	Cabinet
5525RS12	Rack mount with slides
5525N12	Chassis only
5525Y12	Cabinet with mounting studs
12″ CRT; NTSC, with vector output	
5532C12	Cabinet
5532RS12	Rack mount with slides
5532N12	Chassis only
5532Y12	Cabinet with mounting studs
12″ CRT; PAL B, European, with vector output	
5533C12	Cabinet
5533RS12	Rack mount with slides
5533N12	Chassis only
5533Y12	Cabinet with mounting studs
12″ CRT; PAL M, Brazilian, with vector output	
5534C12	Cabinet
5534RS12	Rack mount with slides
5534N12	Chassis only
5534Y12	Cabinet with mounting studs

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DUPONT
REG. U. S. PAT. OFF.

Video Tape

CROLYN® CHROMIUM DIOXIDE VIDEO TAPE
A NEW TECHNOLOGY FROM DUPONT

DuPont Crolyn® Video Tape is more than just a high energy tape. It represents a new technology in magnetic signal reproduction. Tape consists of a Mylar® Polyester base to which a chromium dioxide in the form of an easily dispersed and highly acicular pigment is carefully applied to form a tape with both high saturation, magnetization and coercivity. This tape combined with the "UMatic and compatible ¾" U Series Systems provides an ideal system for slow speed recording techniques used in this ¾" format equipment. Crolyn® Video Tape has excellent signal to noise ratio, low level of dropouts and minimum print-through. New. Shipping Weight, 2.5 lbs.

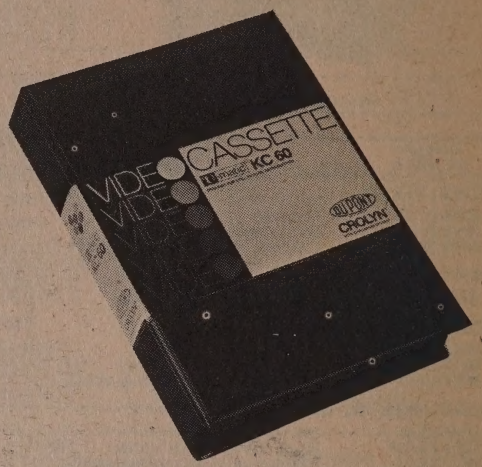
SPECIFICATIONS

Physical Properties: Coating Thickness, 0.18 mils; Base Thickness, 0.83 mils; Width, 0.75″

Magnetic Properties: Orientation, Longitudinal; Coercivity AC, 500 Oe; Flux Or, 1.50 lines; Remanence, Br, 1500 Gauss; Squareness, Br/Bs, 0.9

Tape Performance: Video S/N, 0 Passes, 54 dB CCIR Weighted; 150 Passes, 54 dB CCIR Weighted; RF Output, 0 Passes, 0 dB; 150 Passes, −2 dB; Audio Output, 0 dB; Audio Sensitivity, 0 dB; Headlife, 500–1000 hours typical

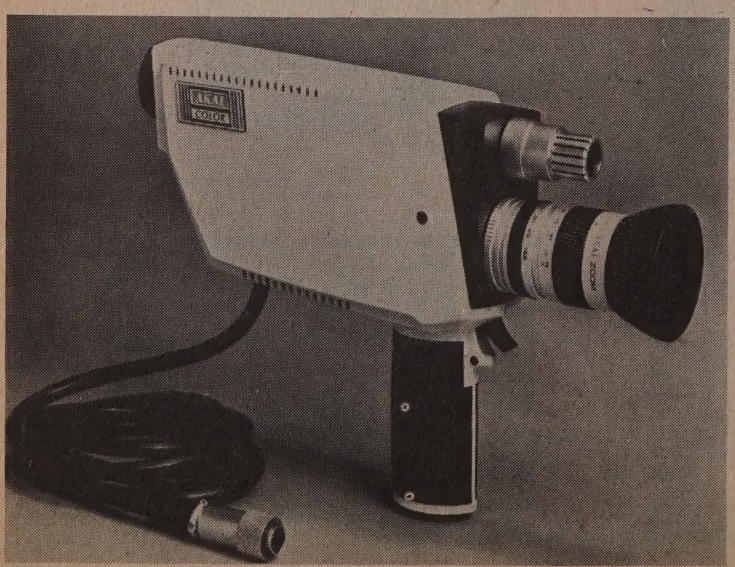
VIDEOCASSETTE



Model	Play Time	Weight	Size
KC-10	10 minutes	1.6 lbs.	8.75″ x 5.50″ x 1.25″
KC-20	20 minutes	1.7 lbs.	8.75″ x 5.50″ x 1.25″
KC-30	30 minutes	1.8 lbs.	8.85″ x 5.50″ x 1.25″
KC-60	60 minutes	2.2 lbs.	8.75″ x 5.50″ x 1.25″

AKAI™

Video Camera

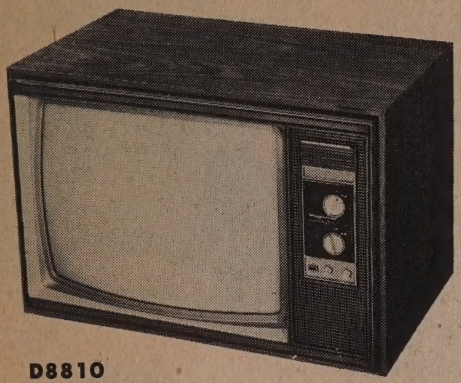


MODEL VC-150
COLOR VIDEO CAMERA

The VC-150 color video camera is the heart of the Akai VTS-150 and VTS-150B systems. Standard features include a six power zoom lens, built-in microphone, an electronic view-finder, automatic/manual aperture control and servo-iris sensitivity selector. The 2 vidicon tube system camera weighs less than 6 lbs. Unique to the Akai system, the Camera Control Unit (CCU) is an integral part of the recorder.

CALL OR WRITE YOUR NEAREST CRAMER BRANCH FOR LATEST PRICE INFORMATION.

Magnavox Video Equipment



D8810

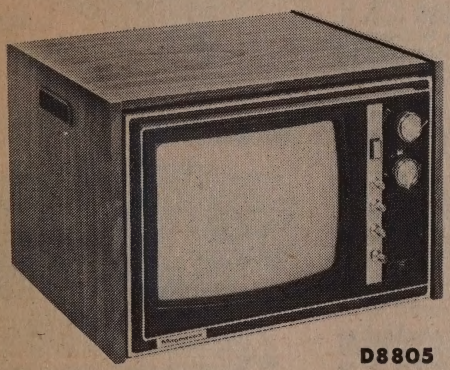
MAGNAVOX MODEL D8810 COLOR RECEIVER/MONITOR

The Model D8810 Receiver/Monitor features a 25″ diagonal (315 sq. in.) negative black matrix picture tube. Provisions are made for videotape playback or camera display; also, a standard TV receiver. Antenna inputs are 75 ohm unbalanced or 300 ohm balanced. The chassis is 100% solid state for maximum reliability and is fully transformer powered. Video input and output connections are BNC and 8-pin VTR connectors with looping input connector provided. The video input is 1 Volt P-P composite (0.3 to 2.0 V) sync negative.

Audio input and output connections are provided, phone jack and 8-pin VTR connector with looping input jack. The audio output is 3 watts rms to a 16 ohm speaker. Audio output is unaffected by receiver volume control. The color circuits are automatic and do not require setup adjustments.

The horizontal resolution for TV mode is 240 TV lines and 330 TV lines in Monitor mode.

Construction: Wood enclosure, walnut grain vinyl finish. **Power:** 108 to 132 Volts AC, 60 Hz, 2.2 amps. **Anode voltage:** 30 KVDC. **Certifications:** UL for safety, FCC and DHEW for radiation. **Dimensions:** 31⅝″ long, 24¼″ depth, 22″ high. **Weight:** 120 lbs.



D8805

MAGNAVOX MODEL D8805 PORTABLE COLOR RECEIVER/MONITOR

The Model D8805 functions as a monitor or receiver. Features a 13″ diagonal (90 sq. in.) in-line, slotted-mask picture tube. Antenna input is 75 ohm and 300 ohm. The chassis is 100% solid state, with transformer power. The video input and output connections are BNC and 8-pin VTR connector with looping input connector provided. The video input is 1 Volt P-P (0.5 to 2.0 V), sync negative. Audio input and output connections are phono jack and VTR connectors with looping input jack. The audio output is 1 watt, 3″ round speaker, 8 ohms. Most color and other adjustments are located on front panel.

Horizontal resolution is better than 240 TV lines. **Power:** 108 to 132 Volts AC, 60 Hz, 115 watts. **Certifications:** UL for safety, FCC and DHEW for radiation. **Dimensions:** 20½″ length, 17⅜″ depth, 14″ high. **Weight:** 49½ lbs.

CV400

MAGNAVOX MODEL CV-400 HAND HELD COLOR TV CAMERA

The CV-400 Hand-Held Color TV camera features a single-tube principle with the use of a single vidicon pick-up tube, in which color registration problems are eliminated. The CV-400 Color Camera also includes an electronic viewfinder and a 4:1 zoom lens (20–80 mm). The camera offers excellent stability of operation through automatic gain control, automatic chroma tracking, automatic chroma focusing and automatic dark current compensation. The only operating controls are the OFF/ON switch and normal lens controls including zoom and focus.

The video output is a composite NTSC compatible encoded, in compliance with EIA. Vertical sweep rate is 59.95 Hz, horizontal sweep rate is 15,734 Hz, interlaced 2:1, 525 lines/frame, 30 frames/second. Required illumination is 30 ft. lamberts at iris setting of f2.5.

Weight: 6.9 lbs. **Dimensions:** 5″ high, 5″ wide and 15″ long.

The processor, furnished with the CV-400 color camera, is 100% solid state with plug-in circuit boards. The cable from camera to processor is a standard 8 to 10 foot cable (mini cable 0.290 diameter; less than 1 ounce per/ft) but 50 ft or 100 ft. cables are available. **Output Impedance:** 1 volt, 75 ohms. The rear panel of processor features a switch which allows instant playback of recorded video on the camera viewfinder. **Weight:** 8.8 lbs. **Dimensions:** 3″ high, 14½″ wide, 11″ deep. **Voltage and power requirements:** 117 VAC, 60 Hz, 55 watts.

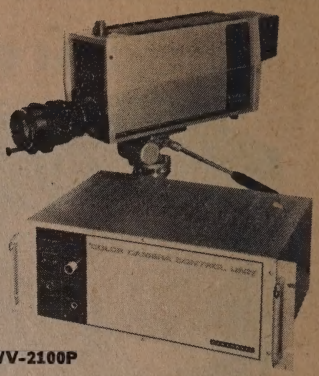
CRAMER ELECTRONICS CARRIES A COMPLETE LINE OF MAGNAVOX PRODUCTS. WRITE OR CALL YOUR NEAREST CRAMER BRANCH FOR INFORMATION OR PRICES ON PRODUCTS NOT LISTED.

PANASONIC. Video Cameras and Monitors

MODEL WV-2100P DELUXE COLOR STUDIO CAMERA

Color camera has one vidicon for luminance, another for chrominance. Simplified controls include vertical and horizontal centerings and white balance setting. Large 4½" CRT viewfinder has brightness and contrast controls. Automatic gain and automatic pedestal circuitries may also be operated manually. Includes remote Camera Control Unit which connects to camera head with a single multi-cable; contains camera controls, power on/off switch, pilot lamp, intercom jack and tally light. Rear panel has provision for subcarrier, sync, blanking, and horizontal and vertical drive UHF connectors as well as NTSC composite and non-composite video output connectors. **Scanning Standards:** 525 lines, 60 fields, 30 frames. **Required Illumination:** over 50 ft. candles min. (F2.0) 200 ft. candle standard (F2.8). **Taking Lens:** 6:1 zoom lens; F2.0 18–105 mm zoom (manual, push-rod or flexible-cable control); F 2.0 16.5–95 mm zoom (motorized). **View Finder:** 4.5" diagonal CRT. **Power Required:** 117 VAC, 60 Hz, 95 w. **Size:** Camera Head, 6.5" w. x 16" d. x 8.4" h. Control Unit, 16½" w. (19" w/angle) x 12¼" d. x 7" h. Weight, Camera Head, 22 lbs., Control Unit, 30 lbs.

Panasonic Model WV-2100 P Color Studio Camera and Camera Control Unit—



WV-2100P

MODEL WJ-1000P COLOR SYNC GENERATOR

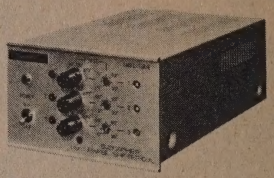
Designed for use with Panasonic's Color Studio Camera. May also be used in monochrome systems. EIA RS-330 color sync generator has frequency interleaving 3.58 MHz subcarrier and burst flag pulse signals. High reliability crystal oscillator gives exceptional time-base stability for jitter-free pulses. Available in EIA monochrome and NTSC color configurations. Has all digital circuitry. Front-panel test points are provided for easy maintenance. Mounts in 1¾" vertical rack space. **Monochrome Output:** HD, VD, Blanking, Sync. 4.0 p-p ±0.5 V, 75 ohms. **Subcarrier Output:** 2.0 V p-p, ±10% 3.579545 MHz ± 25 Hz, 75 ohms. **Pulse Rise and Decay Time:** Less than 150 nanosec. **Output Impedance:** 75 ohms ± 10%. **Burst Flag Pulse:** 4.0 V p-p ± 0.5 V, 75 ohms. **Power Required:** 117 VAC, 20 watts. **Size:** 16½" w. (19" w/angle) x 10" d. x 1¾" h. Weight, 9.3 lbs.

Panasonic Model WJ-1000P Color Sync Generator

MODEL WJ-1700P SUBCARRIER PHASE SHIFTER-DISTRIBUTION AMPLIFIER

Designed for distribution of subcarrier (3.58 MHz) signals, one input to WJ-1700P results in three identical isolated outputs, each with its own 0° to 360° phase adjustment. The input subcarrier is reformed into distortion-free outputs, each of which has a ± 6 dB gain adjustment. Fully silicon transistorized, mounts in a standard EIA rack with an accessory mounting frame. **Subcarrier Input:** 3.58 MHz 1.0 to 3.0 V p-p; 75 ohms or Hi-Z looping through UHF connectors. **Outputs:** Three, 75 ohms source terminated. **Output Level:** 2.0 V p-p ± 1.0 V. **Output Phase:** 0° to 360° adjustable for each output. **Power Required:** 117 VAC, 15 watts. **Size:** 5½" w. x 8" d. x 3½" h. Weight, 5.5 lbs.

Panasonic Model WJ-1700P Subcarrier Phase Shifter



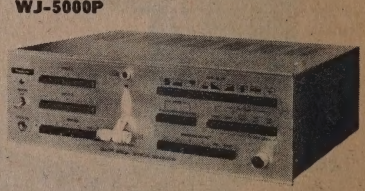
WJ-1700P

MODEL WJ-5000P COLOR SPECIAL EFFECTS GENERATOR

Color special effects generator has built-in vertical interval switcher for program output. Using an external sync generator such as WJ-1000P it synchronizes, switches, and effects inputs from up to five color CCTV cameras. Special effects include internal external key (monochrome), wipes, fade-in, fade-out, and superimpose. Has separate video busses for previewing and programming. Rugged and lightweight for use in mobile units, also adequate for studio use, the Model WJ-5000 P fits standard 19" EIA rack. **Video Input:** 0.7 V p-p non-composite only x 5/75 ohms or Hi-Z looping through UHF connectors. **Video Output:** 1.0 V p-p composite x 2/75 ohms UHF connectors. **Frequency Response:** 10 MHz ± 1.0 dB. **Signal-to-Noise Ratio:** Better than 50 dB. **Power Required:** 117 VAC, 50/60 Hz. **Size:** 16½" w. (19" w/angle) x 10⅘" d. x 5¼" h. Weight, 22 lbs.

Panasonic Model WJ-5000P Color Special Effects Generator

WJ-5000P



MODEL WV-240P CCTV CAMERA

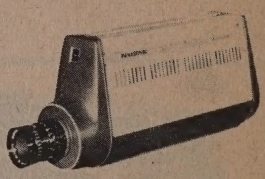
Versatile, solid state non-viewfinder CCTV camera for industrial studio and surveillance. Requires minimum illumination. Choice of sync systems: Internal random sync, external EIA 2:1 interlace, or sync generator. Automatic/manual light control, sync switch, video output, external sync input, pilot lamp, on/off switch. Beam, target and electrical focus adjustments. **Frequency Response:** 7 MHz. **Horizontal Resolution:** 550 lines. **Signal-to-Noise Ratio:** 40 dB. **Vidicon Tube:** ⅔" separate mesh vidicon. **Scanning Standards:** 525 lines/60 fields/30 frames. **Output:** 1.0 V peak-to-peak, composite/75 ohms load, no RF. **Automatic Light Compensation:** 5000 to 1. **Required Illumination:** 2 ft.-candles (20 lux) (F1.6 lens). **Lens:** F1.6, 16 mm, C-mount (no iris). **Operating Temp. Range:** +14° F to +122° F. **Power Required:** 8 watts, 117 VAC, 60 Hz. **Size:** 3¼" w. x 10" d. x 5⅝" h. Weight, 4.4 lbs.

Panasonic Model WV-240P CCTV Camera

Panasonic Model WV-200P CCTV Camera—Similar to Model WV-240P but without choice of sync systems. Sync synchronizing is random horizontal, line-locked vertical.

Panasonic Model WV-241P CCTV Camera—Similar to Model WV-240P, but also includes built-in industrial 2:1 interlace sync generator

WV-240P



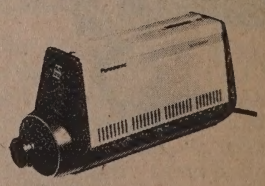
MODEL WV-260P HIGH SENSITIVITY CCTV CAMERA

Features ⅔" silicon-target vidicon camera (body only, without lens; use optional Panasonic auto iris lens); operable at low light levels (min. 0.1 foot candle). Camera designed for use in infrared light applications. Has 3 sync modes: internal random interlace, internal built-in 2:1 interlace, external 2:1 interlace. Optional remote control for beam and focus.

Panasonic Model WV-260P CCTV Camera

Panasonic Model WV-245P CCTV Camera—Same, but has ⅔" separate mesh vidicon instead of silicon-target vidicon.

WV-241P



HIGH-RESOLUTION AND STUDIO CCTV CAMERAS

Description and specifications on request.

Panasonic Model WV-380P High-Resolution Camera

Panasonic Model WV-341P Studio Camera

Panasonic Model WV-361P Studio Camera

WV-260P

MODEL CT-911E COMMERCIAL/EDUCATIONAL COLOR TV MONITOR RECEIVER

Color television monitor features "Quatrecolor" technology. Has all solid state circuitry, isolated power transformer chassis, and 3-prong power cord. Also has VHF/UHF tuner for normal color TV operation, and RF input signal for video cartridge/cassette playback. Specifications on request.

Panasonic Model CT-911E Color TV Monitor Receiver

MODEL TR-195M BLACK & WHITE CCTV MONITOR

Large screen, black and white CCTV monitor has 184 sq. inch viewing area (19" diagonal). Features all solid state circuitry. Provides UHF, RCA and 8-pin connectors for VTR playback function. Specifications on request.

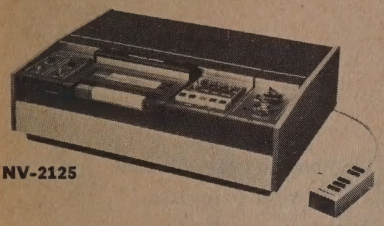
Panasonic Model TR-195M B&W CCTV Monitor

PANASONIC. COLOR AND BLACK/WHITE VIDEO RECORDERS

NV-5120

MODEL NV-5120 ½″ COLOR VIDEO CARTRIDGE RECORDERS

For record/playback on ½″ tape cartridges. Color and black and white, compatible with EIAJ #1 black and white and EIAJ ½″ color standards. Automatic tape threading, end-of-tape rewind and cartridge ejection. Patented HPF magnetic heads. Still framing, fast forward and rewind, automatic phase control circuit, audio dubbing, pre-set auto repeat. Built-in RF, channels 5 and 6. **Heads:** 2 rotary heads for video; 1 stationary for audio/control; 1 erase head for both video and audio; 1 erase head for audio dubbing. **Tape Speed:** 7½ ips. **Recording Time:** 30 min. with NV-P530 (1,200 ft.). **Frequency Response:** Audio, 50–12,000 Hz. **Signal-to-Noise Ratio:** video, more than 40 dB; audio, more than 42 dB. **Power Required:** 120 VAC, 60 Hz. **Size:** 22 1/16″ w. x 15¾″ d. x 8½″ h. Weight, 53 lbs.
Panasonic Model NV-5120 Video Cartridge Recorder
Panasonic Model NV-5125 Video Cartridge Recorder—Same as Model NV-5120, but with built-in VHF/UHF tuners for off-air recording. Weight, 55 lbs.



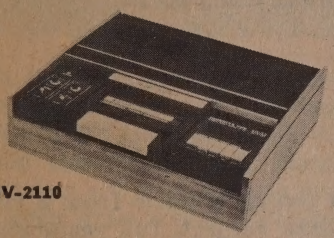
NV-2125

MODEL NV-5110 ½″ COLOR VIDEO CARTRIDGE PLAYER

Similar to Model 5120, but player only. **Heads:** 2 rotary heads for video; 1 stationary head for audio/control. **Size:** 19 1/16″ w. x 15¾″ d. x 8½″ h. Weight, 48½ lbs.
Panasonic Model NV-5110 Video Cartridge Player

MODEL NV-2120 ¾″ COLOR VIDEO CASSETTE RECORDERS

Records and plays color pictures and stereo sound from erasable magnetic tape. Ideal for home entertainment, education, training, and industrial applications. Color and black and white record/playback on compact ¾″ video cassettes. Two-track audio, audio dubbing, AGC on audio and video, automatic stop at end of tape, elevator tape loading system. Built-in RF, channels 5 and 6. **Heads:** 2 rotary heads for video; 1 stationary head for audio/control; 1 full track erase head. **Tape Speed:** 3¾ ips. **Recording Time:** 60 min. with NV-P26 (1,175 ft.). **Frequency Response:** Audio, 50–12,000 Hz. **Signal-to-Noise Ratio:** Video, more than 40 dB; audio, more than 42 dB. **Power Required:** 120 VAC, 60 Hz. **Size:** 24″ w. x 17¾″ d. x 7⅞″ h. Weight 62 lbs.
Panasonic Model NV-2120 Video Cassette Recorder
Panasonic Model NV-2125 Video Cassette Recorder—Same as Model NV-2120, but with built-in VHF/UHF tuners for off-air recording; pause/record and play control, remote control operation with optional NV-A150; timer record and playback, auto repeat, auto rewind, "auto-search" function tracks to specified program. Weight, 65 lbs.



NV-2110

MODEL NV-2110 ¾″ COLOR VIDEO CASSETTE PLAYER

Provides an economical, easily operable, and thoroughly reliable method for playing color pictures and stereo sound recorded on erasable magnetic tape. Plays directly on color or black and white home TVs or monitors. Color or black and white playback from compact ¾″ video cassettes. Complete array of controls; 2-track audio, automatic stop at end of tape, elevator tape loading system. Built-in RF, channels 5 and 6. **Heads:** video, 2 rotary heads; audio/control, 1 stationary. **Tape Speed:** 3¾ ips. **Frequency Response:** audio, 50–12,000 Hz. **Signal-to-Noise Ratio:** video, more than 40 dB; audio, more than 42 dB. **Power Required:** 120 VAC, 60 Hz. **Size:** 20 1/16″ w. x 17¾″ d. x 7⅞″ h. Weight, 54 lbs.
Panasonic Model NV-2110 Color Video Cassette Player

For information on Panasonic products not listed or latest prices write or call Cramer for a catalog.

NV-3010

MODEL NV-3010 ½″ BLACK/WHITE VIDEO TAPE PLAYER

Expertly designed tape player for classroom use has single lever control for easy operation. Can be played through conventional TV using optional RF adapter. Still framing allows study of detail. Automatic end of tape shutoff. Two rotary heads for video, 1 stationary head for audio/control. Playback time, 60 minutes with 2,400 foot reel. **Horizontal Resolution:** 300 lines. **Tape Speed:** 7½ ips. **Frequency Response:** Video, 2.5 MHz; audio, 80–10,000 Hz. **Signal-to-Noise Ratio:** 40 dB. **Impedance:** 75 ohms, video; 10K ohms, audio. **Power Required:** 117 VAC, 60 Hz. **Size:** 14 1/16″ w. x 13 3/16″ d. x 6¾″ h. Weight 27½ lbs.
Panasonic Model NV-3010 Video Tape Player

MODEL NV-3020 ½″ BLACK & WHITE VIDEO TAPE RECORDER

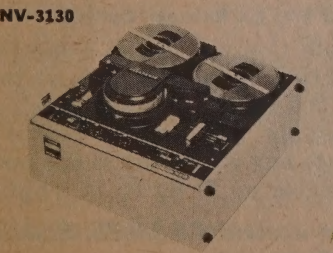
Expertly designed ½″ EIAJ #1 industry standard video tape recorder in portable case is lightweight, reliable and economical. Features rotary head drive system and standby circuit, still framing and audio dubbing. Operationally compatible with any TV camera and most monitors. Stop action, automatic and end of tape shutoff, single lever operation. RF adaptable. **Heads:** Video, 2 rotary heads; audio/control, 1 stationary head. Erase head, 1 full track; 1 for audio dubbing. **Tape Speed:** 7.5 ips. **Reel Size:** 7 inch. **Tape Width:** ½ inch. **Recording Time:** 63 min. with NV-P71 (2,400 ft.). **Horizontal Resolution:** more than 300 lines. **Frequency Response:** video, greater than 2.5 MHz; audio, 80–10,000 Hz. **Signal-to-Noise Ratio:** video, better than 40 dB; audio, better than 40 dB. **Power Required:** 117 VAC, 60 Hz. **Size:** 15⅜″ w. x 15 3/16″ d. x 6⅜″ h. Weight, 35½ lbs.
Panasonic Model NV-3020 Video Tape Recorder

NV-3020SD

MODEL NV-3130 ½″ COLOR VIDEO TAPE RECORDER WITH ELECTRONIC EDITING, SLOW MOTION PLAYBACK

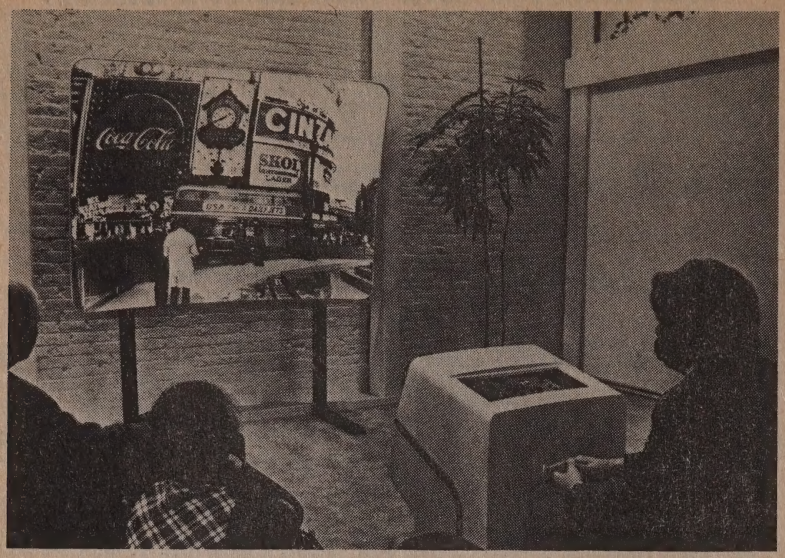
Features capstan servo electronic editing, stop action and slow motion playback. EIAJ ½″ color standard and EIAJ #1 ½″ black and white standard. Electronic editing permits instant editing of audio and video information from camera, monitor TV or prerecorded tape. Dropout/noise compensator virtually eliminates dropout. Automatic color lock control, audio dubbing. **Heads:** video, 2 rotary heads; audio/control, 1 stationary head; erase heads, 1 for both video and audio, and 1 for audio dubbing. **Tape Speed:** 7½ ips. **Tape Width:** ½ inch. **Reel Size:** 7 inch. **Recording Time:** 63 min. with NV-P71 (2,400 ft.). **Horizontal Resolution:** B/W, more than 300 lines; color, more than 240 lines. **Frequency Response:** video, greater than 2.5 MHz; audio, 80–10,000 Hz. **Signal-to-Noise Ratio:** video, B/W, better than 40 dB; audio, better than 40 dB. **Power Required:** 120 VAC, 60 Hz. **Size:** 15⅞″ w. x 16¾″ d. x 7¾″ h. Weight, 46 lbs.
Panasonic Model NV-3130 Color Video Tape Recorder
Panasonic Model NV-3020SD B/W Video Tape Recorder—Similar to Model NV-3130 except black and white only instead of color. **Power Required:** 117 VAC, 60 Hz. **Size:** 15⅜″ w. x 15 3/16″ d. x 6⅜″ h. Weight, 36 lbs.

NV-3130



MODEL NV-3040 ½″ B/W VIDEO RECORDER WITH MEMORY REWIND

Sophisticated ½″ EIAJ #1 black and white video tape recorder features feather-touch pushbutton operation and remote control capability. Memory rewind permits rewind to any pre-selected position of the tape and subsequent playback/record/dubbing. Automatic/manual control of video and audio recording levels. Still framing, audio dubbing, skew and tracking adjustment controls. Automatic end of tape shutoff. **Heads:** 2 rotary heads for video; 1 stationary head for audio/control; 2 erase heads, 1 for full track, 1 for audio dubbing. **Tape Speed:** 7½ ips. **Tape Width:** ½ inch. **Reel Size:** 7 inch. **Recording Time:** 63 min. with NV-P71 (2,400 ft.). **Horizontal Resolution:** more than 300 lines. **Frequency Response:** video, 2.0 MHz (−3 dB); audio, 80–10,000 Hz (±3 dB). **Signal-to-Noise Ratio:** video, better than 40 dB; audio, better than 40 dB. **Power Required:** 120 VAC, 60 Hz. **Size:** 15 5/16″ w. x 17⅛″ d. x 8⅞″ h. Weight, 48½ lbs.
Panasonic Model NV-3040 Video Tape Recorder



Advent Large—Screen Projection Television Video Beam 1000A

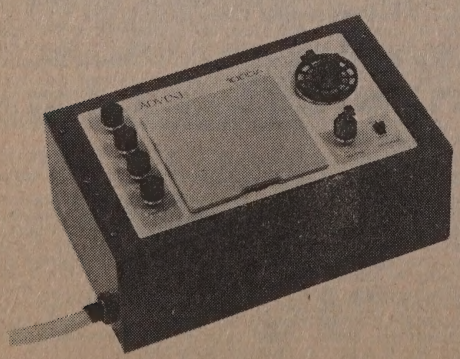
The model 1000A Advent Projection Television is a large screen projection receiver consisting of two pieces: a receiver/projection unit and a separate free-standing screen. The screen is a new highly reflective aluminum screen material measuring 4¼ ft × 5⅔ ft or 24.8 sq. ft. screen area. The attached legs give a total distance from floor to top of screen of 84 inches. Mounting brackets are available for wall mounting. The screen is slightly curved vertically.

The receiver is floor mounted, consisting of three projection tubes instead of a picture tube. The picture quality give a satisfying bright and sharp image when programming is viewed in a living room or public area with moderate background lighting. For best viewing, the background lighting must be at a minimum, since the highly reflective screen will reflect a certain amount of ambient light along with the picture, thus reducing maximum contrast. The circuitry is of the latest design to maintain good interlace and full restoration of black-level in the picture. When a sudden camera switch is made from a very light to a very dark subject, full restoration provides this detail, keeps large black (or dark) picture areas blacker, and improves contrast. Since final picture quality is dependent on reception conditions and the quality of the signal arriving at the antenna terminals, a good antenna (or connection to a good cable TV or other master antenna) is critical to realize full picture quality.

The loudspeaker is located at the front of the projector so that the sound is effectively directed back by the screen's curved surface so that it appears to originate from the screen itself.

Dimensions: Screen: 69″ wide × 52″ high; 84″ from floor to top of screen. Weight is approximately 68 lbs. (Shipping wt. 90 lbs). Projection receiver: 20⅝″ wide, 33″ high, 22″½ deep. Weight approximately 140 lbs. (Shipping wt. 176 lbs).

Power Requirements: 120 Volts AC, 60Hz, 180 watts.

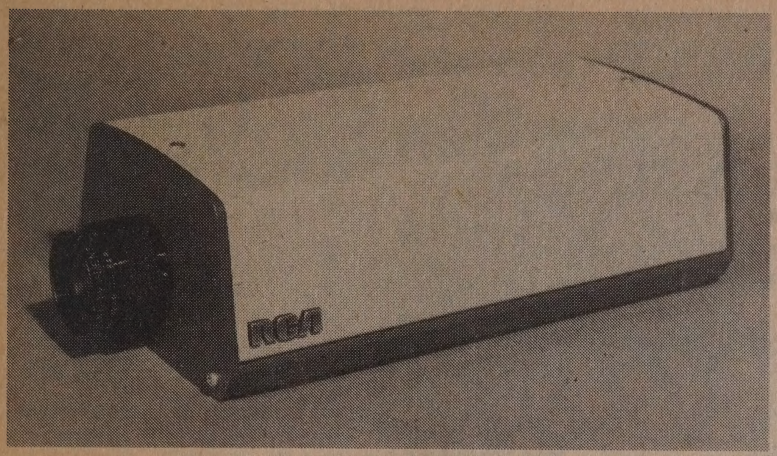


Advent Model 100 DA Remote Control

The Advent Remote Control unit is available at extra cost. Identical in performance to the regular Model 1000A, the remote control model features tuning and picture controls housed in a separate box connected to the projector unit via a cable up to 60 ft. in length.

Call or write your nearest CRAMER Branch for latest price information.

RCA Closed Circuit Cameras



Model TC1000 RCA Closed-Circuit Camera

The Model TC1000 closed-circuit camera is a general-purpose, low-cost camera which features: a ⅔" separate-mesh vidicon; All-solid-state circuitry; black clamp to maintain contrast; white clipper to prevent overdrive; ten-step gray scale; drive-loss protection by full horizontal shutdown; factory-preset controls and internal compensations to use without preliminary adjustment; all-purpose, 10,000:1 automatic light compensation; and horizontal resolution better than 500 lines. Video output: IV p-p composite, 75 ohms, can be adjusted to 1.4V. Lens mount: standard "C".

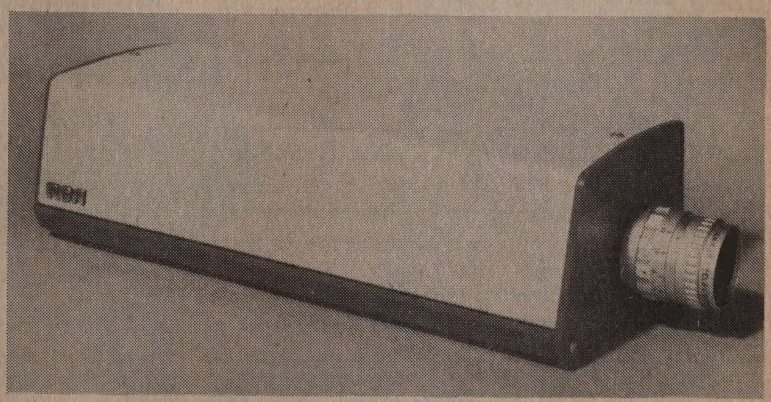
Dimensions: 9½" long, 2¾" high, 4½" wide. Weight: 3½ lbs.

Power Requirements: 120 volts AC, 60 Hz, 8 watts.

Model TC1000/02 same as TC1000 except for operation at 24 volts AC, 60 Hz, 12 watts. Can be mounted up to 1000 feet from standard bell transformer using #18 copper wire.

Model TC1000/03 same as TC1000 except for operation at 230 volts AC, 50 Hz, 8 watts.

Model TC1000/E same as TC1000 except has RF output factory set for channel 3 or 4.



Model TC1005 RCA Closed-Circuit Camera

The Model TC1005 closed-circuit camera features: all-solid-state circuits; keyed black clamp to maintain contrast; two isolated video outputs; accepts composite sync, or horizontal and vertical drives at 1V to 6V p-p; and non-reflecting beige and brown finish. Horizontal resolution is 600 lines. Automatic light compensation circuitry operates over a ratio of 40,000:1. An AGC amplifier permits use of a lower vidicon target voltage, thus reducing dark current. An internal switch changes circuitry to act on average or peak scene brightness. Video output is 1V p-p composite, adjustable to 1.4V. Sweep-loss protection utilizes full horizontal and vertical shutdown. The Model TC1005 uses a ⅔" vidicon.

Dimensions: 11¾" long, 3½" high, 5½" wide. Lens mount is the standard "C". Weight: 6 lbs. without lens.

Power Requirements: 120 volts AC, 60 Hz/ 230 Volts, 50 Hz, 20 watts. Model TC1005/01 same as TC1005 except uses one inch vidicon, with resolution of 800 lines.

Write or call your nearest CRAMER Branch for latest price information.

Scotch® BRAND Video Tapes and Accessories

SERIES 360 VIDEO TAPE

Longitudinally oriented video tape has many outstanding advantages: Heavy duty binder system, long wearing oxide, improved signal-to-noise ratio, excellent audio and video output characteristics, low dropout count, highly conductive coating, extended head life, and new back treatment prevents interlayer slippage, scratching and attraction of foreign debris.

TAPE WIND A

Scotch Number* 360-	Play Time Min.	For use with Recorders	Reel Size	Reels/ Carton	Net Each 1-9*
1-1500-R139	31	Ampex 4900, 5000, 6000, 7000 Series	1″ x 8″	5	
1-3000-R97B	62		1″ x 9¾″	5	
1-1250-R91B	32	Sony EV-200/300	1″ x 8″	5	
1-2460-R91B	63		1″ x 8″	5	

TAPE WIND B

B-2-300-VRB	16	Ampex VR-1500, VR-660B Series	2″ x 6½″	12	
B-2-600-VRB	32		2″ x 6½″	12	
B-2-900-R143B	48		2″ x 8″	2	
B-2-1200-R143B	64		2″ x 8″	2	
B-2-1800-R143B	96		2″ x 10½″	2	
B-2-2400-R143B	130		2″ x 10½″	2	
B-2-4800-R143B	260		2″ x 12½″	2	
B-2-700-VSRB	33	Sony PV-120 Series	2″ x 7″	2	
B-2-1350-VSRB	64		2″ x 7″	2	
B-2-2000-VSRB	94		2″ x 7″	2	
B-2-1800-VSRB	63	Sony PV-100	2″ x 7″	2	

SERIES 461 VIDEO TAPE

High energy longitudinally oriented video tape represents a significant improvement over all other types of helical video tape. Greatly improved signal-to-noise ratio, excellent head life characteristics, time proven conductive back treatment prevents physical damage and attraction of contaminants.

TAPE WIND A

For portables (7½ ips); Sony, Panasonic, Concord, Norelco.

Scotch Number*	Playing Time Minutes	Reel Size	Reels/ Carton	Net Ea., Lots of 1-9*
461-¼-1200-R154C104	20	¼″ x 5″	12	
461-½-845-R130B	20	½″ x 4⅝″	5	
461-½-1200-R148B	30	½″ x 5⅛″	5	
For EIAJ-1 standard (7½ ips) recorders.				
461-½-1250-R153‡	30	½″ x 7⅛″	5	
461-½-1800-R153B	45	½″ x 7⅛″	5	
461-½-2400-R153B	60	½″ x 7⅛″	5	
For IVC, RCA and GPL.				
461-1-1075-R139B	30	1″ x 8″	5	
461-1-2150-R139B	60	1″ x 8″	5	
For Panasonic, Concord, Shibaden, Craig and Diamond Power.				
461-1-1500-R139B	30	1″ x 8″	5	
461-1-2800-R104B	60	1″ x 8½″	5	
461-1-3600-R97B	90	1″ x 9¾″	5	
For Ampex.				
461-1-1500-R139B	30	1″ x 8″	5	
461-1-3000-R97B	60	1″ x 9¾″	5	
461-1-3600-R97B	70	1″ x 9¾″	5	
For Sony EV200/300.				
461-1-1250-R91B	32	1″ x 8″	5	
461-1-2460-R91B	63	1″ x 8″	5	

*For 1″ wide reels R97, R104 or R139 to be delivered in Cycolac plastic shipping and storage container add **C87** to Scotch No. and delete letter **B**; i.e., 461-1-3600-R97**C87**; add-on charge is **$4.00.**

SERIES UCA VIDEO CASSETTES

Fully compatible with all ¾″ U-Matic video cassette systems. The "cobalt energized" high energy video tape is specially designed to withstand rigorous use. Permanent lubrication and time proven back treatment assure low head wear and maximum tape life. Video cassettes are each packed individually in either a vinyl book-style storage box (specify C114) or in a combination shipper/storage box plastic container (specify C115). Example: UC-10 packed in C114 box.

Scotch Number	Playing Time Minutes	For Use With Recorder/Player	Reels/ Carton	Net Each, Lots of 1-19*
UCA-10	10	Sony, Panasonic, Wollensak, JVC, Concord, Sharp, Sanyo	5	
UCA-20	20		5	
UCA-30	30		5	
UCA-40	40		5	
UCA-50	50		5	
UCA-60	60		5	

SERIES 361 VIDEO TAPE

Longitudinally oriented video tape offer the same features as Series 360 video tape.

TAPE WIND A

For Roberts and Akai.

Scotch Number*	Playing Time Minutes	Reel Size	Reels/ Carton	Net Ea., Lots of 1-9*
361-¼-1200-R154C	20	¼″ x 5″	12	
361-¼-2400-R137B	40	¼″ x 7″	5	
For portables (7½ ips); Sony, Panasonic, Concord and Norelco LDL 1000.				
361-½-450-R130B	10	½″ x 4⅝″	5	
361-½-845-R130B	20	½″ x 4⅝″	5	
361-½-1200-R148B	30	½″ x 5⅛″	5	
All EIAJ-1 standard (7½ ips) recorders, Sony, Apeco, GE, B&H, Shibaden, Concord, Panasonic, Craig or Diamond Power.				
361-½-1250-R153B	30	½″ x 7⅛″	5	
361-½-1800-R153B	40	½″ x 7⅛″	5	
361-½-2400-R153B	60	½″ x 7⅛″	5	
For IVC, Bell & Howell, RCA, GPL and Chester.				
361-1-1075-R139B	31	1″ x 8″	5	
361-1-2150-R139B	62	1″ x 8″	5	
For Concord and Panasonic.				
361-1-1400-R139B	32	1″ x 8″	5	
361-1-2800-R104B	64	1″ x 8½″	5	
For Craig, Diamond Power and Shibaden.				
361-1-2400-R97B	64	1″ x 9¾″	5	
361-1-3600-R97B	96	1″ x 9¾″	5	

*For 1″ wide tapes for recorders using R97, R104 or R139 reels desired to be delivered in Cycolac† plastic shipping and storage containers add **C87** to Scotch Number and delete letter **B**; i.e., 361-1-3600R97**C87**; add-on charge is **$4.00.**

†Reg. Borg-Warner TM.

SERIES 363 VIDEO TAPE

Same magnetic characteristics as Series 360 and 361. Has thin ½-mil treated backing for long play requirements.

TAPE WIND A

For portables (7½ ips): Sony, Panasonic, Concord and Norelco LDL 1000.

Scotch Number	Playing Time Minutes	Reel Size	Reels/ Carton	Net Ea., Lots of 1-9*
363-½-1150-R130B	30	½″ x 4⅝″	5	
363-½-1550-R148B	40	½″ x 5⅛″	5	
For all EIAJ-1 standard recorders (7½ ips).				
363-½-3000-R153B	80	½″ x 7⅛″	5	

VIDEO TAPE REELS AND ACCESSORIES

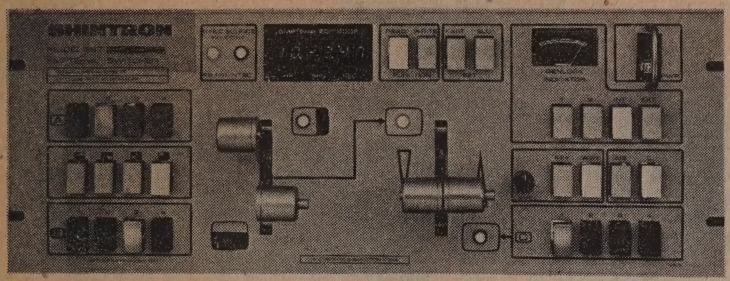
Scotch Number	Description	Size	Per Ctn.	Net Ea.*
R139B-1-8	Empty reel in box	1″ x 8″	5	
R91B-1-8	Empty reel in box	1″ x 8″	5	
R104B-1-8½	Empty reel in box	1″ x 8½″	5	
R97B-1-9¾	Empty reel in box	1″ x 9¾″	5	
R143B-2-8	Empty reel in box	2″ x 8″	2	
R143B-2-10½	Empty reel in box	2″ x 10½″	2	
R143B-2-12½	Empty reel in box	2″ x 12½″	2	
VSRB-2-7	Empty reel in box	2″ x 7″	2	
R150B-2-12½	Empty reel in box	2″ x 12½″	2	
VB-1-8½	Empty box	1″ x 8½″	5	
VB-1-10½*	Empty box	1″ x 10½″	5	
VB-2-8	Empty box	2″ x 8″	2	
VB-2-10½	Empty box	2″ x 10½″	2	
VSB-2-7	Empty box	2″ x 7″	2	
VSB-1-8	Empty box	1″ x 8″	5	
C88-2-14	Empty blue Cycolac container	2″ x 14″	2	
C87-1-10½		1″ x 10½″	5	
C-114	Soft, vinyl video cassette book pack container			
VRB-2-6½†	Empty plastic reel in box	2″ x 6½″	12	
R130B-½-4⅝	Empty reel in vinyl box	½″ x 4⅝″	5	
R153B-½-7⅛	Empty reel in vinyl box	½″ x 7⅛″	5	
R148B-½-5⅛	Empty reel in vinyl box	½″ x 5⅛″	5	
VB-½-5⅛	Empty vinyl box	½″ x 5⅛″	5	
VB-½-7⅛	Empty vinyl box	½″ x 7⅛″	5	
392-¼-66‡	Splicing tape, 0.5 mil§	¼″ x 66′	12	
392-½-66‡	Splicing tape, 0.5 mil§	½″ x 66′	12	
393-¼-66‡	Splicing tape, 0.25 mil§	¼″ x 66′	12	
393-½-66‡	Splicing tape, 0.25 mil§	½″ x 66′	12	

*To be used when purchasing empty boxes for 1″ x 8½″ or larger NAB reels. †Sold in minimum order quantities of 12. ‡Recommended for all video splicing requirements and are mandatory for use on all controlled wind video tapes. §Aluminized.

Write or call your nearest Cramer Branch for latest prices on all Scotch video and audio tapes.

SHINTRON Video Components

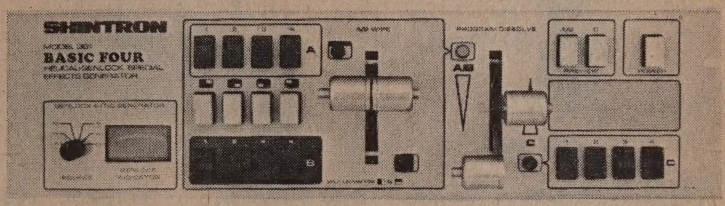
MODEL 367. CHROMATIC POST PRODUCTION SWITCHER



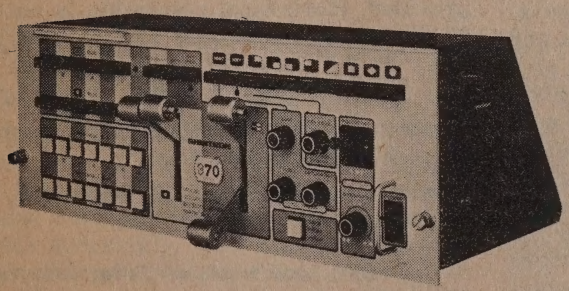
Combination of color NTSC Helical Genlock Sync Generator, a Production Switcher and SMPTE Code Generator/Reader. Universal Interface Panel for Sony and Panasonic cameras, NTDC auto detector, Genlock meter. A/B-C Bus structure. Gear reduction Lever, 7″ rack height. Data sheet DS-367.

MODEL 361. BASIC-FOUR™ SPECIAL EFFECTS GENERATOR

A professional monochrome Special Effects Generator with a built-in Helical Genlock Sync Generator. Genlock indicator, four corners and two wipes. A/B-C Bus structure. All momentary contact lighted push buttons.



MODEL 370. CHROMATIC COLOR SPECIAL EFFECTS GENERATOR



NTSC. Four corners, fade, wipe, diagonal, joystick control of circle, square, and diamond. Matting and keying. Vertical interval switching on preview and program buses. Automatic take button (preview to program) reentry bus for combination effects, and built-in colorizer. Built-in tally contacts. Gear reduction lever. 7″ rack height. Data sheet DS-370.

SYNC GENERATORS

Model 312	EIA RS-170 Genlock Sync Generator
Model 313	EIA RS-170 Sync Generator
Model 314	NTSC Color Genlock Sync Generator
Model 315	NTSC Chromatic Color Sync Generator

DISTRIBUTION AMPLIFIERS

Model 330	Video Distribution Amplifier
Model 336	Video Distribution Amplifier
Model 338	Pulse Distribution Amplifier
Model 316	Audio Distribution Amplifier
Model 346	Extended Dynamic Range Version of Model 316

PROFESSIONAL SOUND PRODUCTS

Model 340	Professional Microphone Mixer
Model 341	Audio Program Monitor
Model 3401	Rack Mount Adaptor for rackmounting Model 340

SPECIALIZED PRODUCTS

Model 380	Video Pointer

VIDEO SEQUENTIAL SWITCHES

Model 320	Video Sequential Switcher
Model 321	Remote Alarm Video Sequential Switcher
Model 324	Optional Remote Control Unit for the above

MODULINE CONSOLES

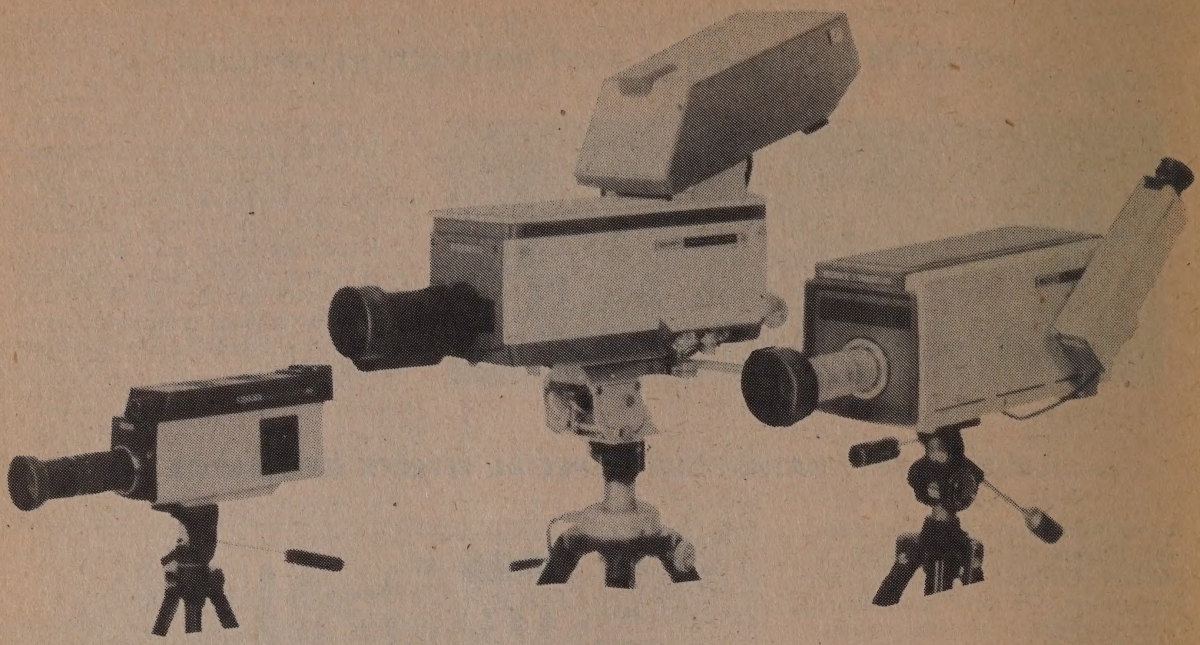
Model 300	Professional Console Cabinet

COMPONENTS

Model 3703	Professional split lever Gear Reduction potentiometer control

CALL OR WRITE YOUR NEAREST CRAMER BRANCH FOR LATEST PRICE INFORMATION.

SONY® Color Video Cameras



DXC 1600 DXC 1200 DXC 1000

DXC-1600 Portable Trinicon® Color Camera

The DXC-1600 camera is a compact, lightweight, single-tube color video camera. It is highly suitable for on-the-spot recordings in your original program production, both indoors and out. The camera features no color misregistration and three-way power operation: 12 volt DC, 117 volt AC power pack and built-in rechargeable battery. It consists of a lightweight camera head and camera control unit with automatic/manual video-level control, built-in color temperature compensation filters, changeable lens (C-mount), and internal or external sync. The camera comes equipped with an f2.5 lens with zoom (18-108 mm—6X) lens. The scanning system provides 525 lines at 2:1 interlace. Horizontal resolution is better than 300 lines.

Output Signal: NTSC, 1 volt p-p, 75 ohms.

Dimensions: 7¾" wide; 6 13/16" high, 13¼" deep. Weight: 12 lbs. 9 ozs.

Power Requirements: 12VDC, 40 watts.

DXC-1200 Studio Trinicon® Color Camera

The DXC-1200 camera is designed for original TV program production and is equipped with a 5" electronic viewfinder that also functions as a waveform monitor An NTSC encoder and sync generator are integrated into one self-contained unit. The optimum illumination is 150-10,000 footcandles. The DXC-1200 features a double-action, single-knob, zoom lens control. An f1.9, 14-140 mm, cable-control zoom lens is available as an optional item. The original equipment lens is f2.5, zoom (18-180 mm) lens with an MS mount. Manual chroma-level, white balance, pedestal, and automatic/manual video level controls are provided. Horizontal resolution is better than 300 lines. The scanning system provides 525 lines at 2:1 interlace. Video Output Signal: NTSC 1 volt p-p, 75 ohms, sync negative.

Dimensions: 9 13/16" wide, 14 5/16" high, 29⅛" deep. Weight: 39 lbs. 4 ozs.

Power Requirements: 120 volts AC, 60 Hz, 65 watts.

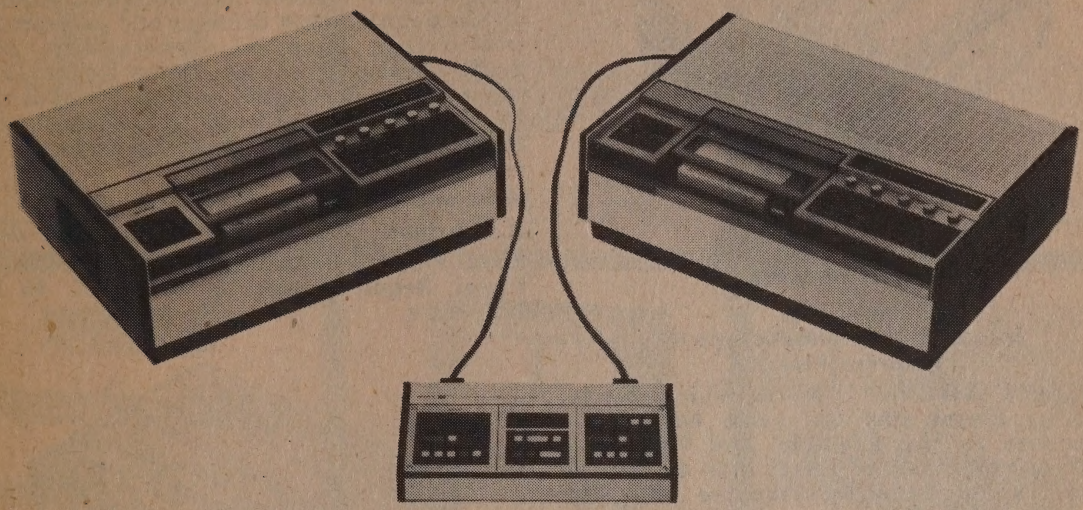
DXC-1000 Trinicon® Color Camera

The DXC-1000 camera features true color fidelity and no color misregistration over a wide range of lighting conditions and is the simplest of the Trinicon® series. It has a high quality picture and stable performance and is an ideal choice for a wide range of applications, such as in microscope and fiber scope systems. A 1.5" viewfinder is available as an option. Horizontal resolution is better than 300 lines. Optimum illumination is 150 to 10,000 footcandles. The output signal is NTSC 1.0 volt p-p, 75 ohm, sync negative. Dimensions: 7 5/16" wide, 7 11/16" high, 23 1/10" deep. Weight: 23 lbs. 6 ozs.

Power Requirements: 120 volts AC, 60 Hz, 40 watts.

Write or call your nearest CRAMER Branch for latest price information.

SONY® Cassette Record/Player



Sony Model VO-2850 U-Matic Color Video Cassette Recorder/Player

The VO-2850 offers a wide range of editing options; scenes from separate cassetts can create an entirely new program, even if they were recorded miles or months apart. New audio can be replaced without erasing the original soundtrack. Slow-motion playback and freeze controls make it easy to select edit points accurately. The VO-2850 features are: full editing capability; any combination of new video and/or audio can be added to existing program material; a separate head reads control track pulses for accurate editing; tapes are automatically rewound 5 seconds before each edit to permit the signal to stabilize before the edit is performed; memory rewind automatically returns a video cassette to its beginning, or to a specified location on the tape, and replays it from that point. The VO-2850 uses the M-Matic ¾" video cassette tape.

Video Signal System: EIA Standard, NTSC type color signal.

Video Recording System: rotary, two-head, helical scan system. Tape speed: 3¾" lps ± 0.2%. Wow and flutter: less than 0.15% rms. Video Input: 0.5V to 2.0V p-p, 75 ohm unbalanced. Video Output: 1V p-p, 75 ohm unbalanced. Horizontal resolution: monochrome, 320 lines; color, 250 lines. There are two optional units available that can be used with the VO-2850. One is the RM400 Automatic Editing Control Unit, with which two VO-2850 machines are used, one as a slave and one as a master unit, for tape editing. The other optional unit is the RM-410 Remote Control Unit, in which all VO-2850 control functions can be made from as far as 16 feet away.

Dimensions: VO-2850—25⅜" wide, 18¼" deep, 8¾" high. Weight: 77 lbs.

RM-400—15¾" wide, 7¾" deep, 1¾" high. Weight: 7 lbs. 7 ozs.

RM-410—6" wide, 6" deep, 1½" high. Weight: 3 lbs. 10 ozs.

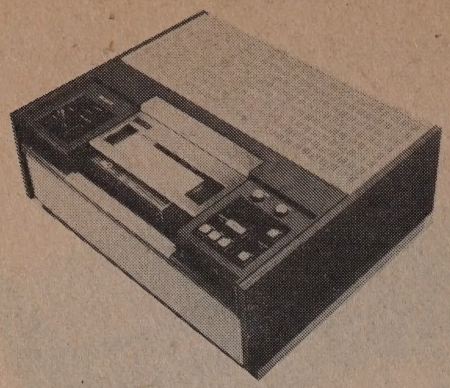
Power Requirements: VO-2850—120 volts AC, 60 Hz, 117 watts

RM-400—Supplied by VO-2850, 6.5 watts

RM-410—Supplied by VO-2850, 0.5 watt

Write or call your nearest CRAMER Branch for latest prices.

SONY® Recorders/Players



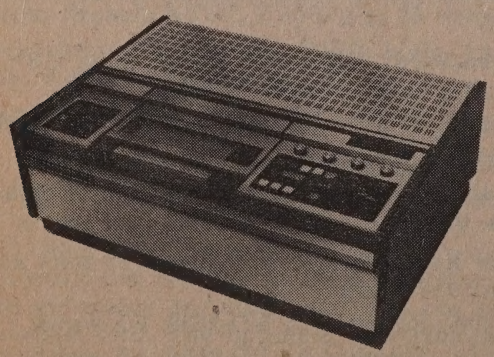
Model VP-2000

Model VO-2600 U-Matic Type II Recorder/Player

The Sony VO-2600 U-Matic Videocassette Recorder/Player has the same basic tape transport as the VO-2850 and features: signal-to-noise ratio of better than 45 dB; increased audio frequency response 50-15,000 Hz; solenoid controls; ease of operation with logic control circuits; slow-motion playback and freeze frame controls for accurate selection of edit points; pause-edit control; remote control capability; and integrated circuitry. The chroma signal system uses a converted-subcarrier, direct-recording, EIA standard NTSC type color signal. It has a new detector and tape-protection circuit, and timer operation capability. The video recording system uses rotary, two-head helical scan. Tape speed: 3¾ ips. Wow and flutter: less than 0.2% rms. Video input signal: 1.0, + 1.0-0.5 volt p-p; video output: 1.0 volt p-p; Horizontal resolution: monochrome, 320 lines; color, 240 lines

Dimensions: 23⅜" wide, 9" high, 16½" deep. Weight: 69.5 lbs.

Power Requirements: 120 volts AC, 60 Hz, 130 watts.



Model VO-2800

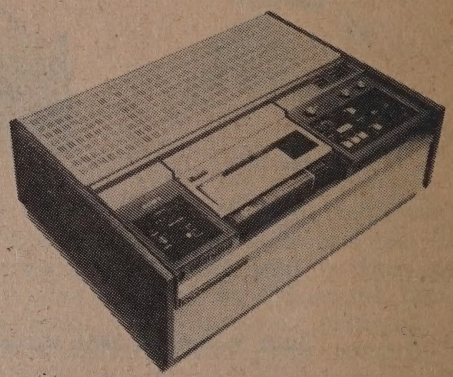
Sony Model VP-2000 U-Matic Type II Player

The Sony Model VP-2000 player features: a better signal-to-noise ratio (45 dB); increased audio frequency response (50-15,000 Hz); solenoid controls; ease of operation with logic control circuits; slow-motion playback and freeze frame controls for accurate selection of edit points; a new detector and tape-protection circuit; improved serviceability; integrated circuitry; and timer operational capability. Video signal output: 1 + 0.2 volt, 75 ohms. Horizontal resolution: monochrome, 320 lines; color, 240 lines. Tape speed: 3¾ inches/sec.

Wow and flutter: less than 0.2% rms.

Dimensions: 20⅜" wide, 9" high, 16⅜" deep. Weight: 59.5 lbs.

Power Requirements: 120 volts AC, 60 Hz, 130 watts.



Model VO-2600

Model VO-2800 U-Matic Type II Recorder/Player/Editor

The Sony Model VO-2800 features the capstan servo mechanism for noise-free, full-editing capability of adding any combination of new video and/or audio to existing program material; memory rewind which automatically returns a video cassette to its beginning or to a specified location on the tape, and replays it from that point. The VO-2800 also features playback-freeze frame controls that make it easier to select edit points accurately. The chroma signal system uses a converted-subcarrier, direct-recording, EIA Standard NTSC type color signal. The video recording system uses a rotary, two-head helical scan. Video input signal: 1V, + 1-0.5V p-p. Video output: 1.0 ± 0.2 volt p-p. Horizontal resolution: monochrome, 320 lines; color, 240 lines. Signal-to-noise ratio is better than 45 dB. Audio response; 50-15,000 Hz. Tape speed: 3¾ ips. Wow and flutter: 0.2% rms.

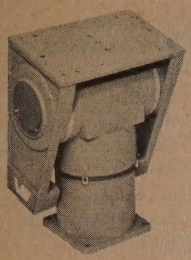
Dimensions: 23⅜" wide, 9" high, 16½" deep. Weight: 75.6 lbs.

Power Requirements: 120 volts AC, 60 Hz, 130 watts.

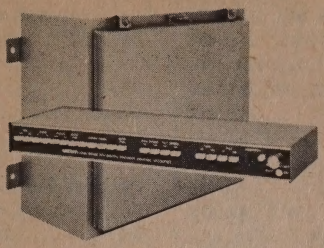
Write or call your nearest CRAMER Branch for latest price information.

VICON® means everything

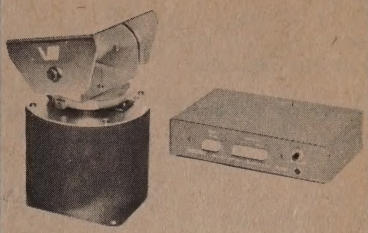
IT ALSO MEANS DOWN-THE-LINE RELIABILITY, FROM WALL BRACKETS TO PAN & TILT UNITS. VICON KNOWS, JUST AS YOU DO, THAT A CCTV SYSTEM IS ONLY AS RELIABLE AS ITS LEAST RELIABLE PIECE OF EQUIPMENT. WE STRIVE FOR SYSTEM RELIABILITY, AND SO SHOULD YOU.



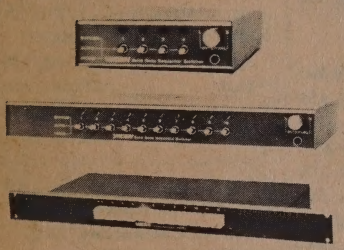
Every version of Pan and Tilt . . . Indoor, Outdoor, Light, Medium and Heavy Duty, Studio Silent, Explosion Proof, etc.



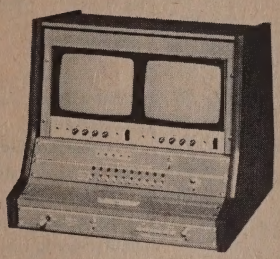
Long Distance Control through the use of Pulse Modulated Signals over simple twisted pair cabling for miles distant remote operation.



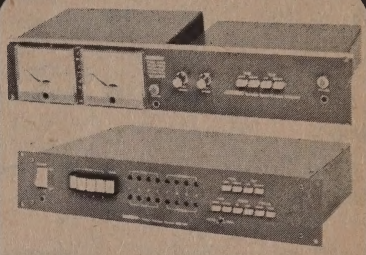
Indoor and Outdoor Scanners, with or without control, Light, Medium and Heavy Duty — all voltages.



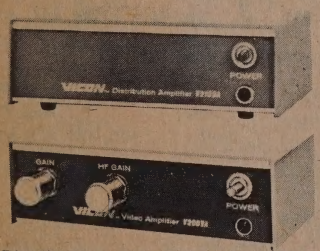
Every variety of Switcher: Manual, Illuminated, Sequential — both Local and Remote Control, Vertical Interval.



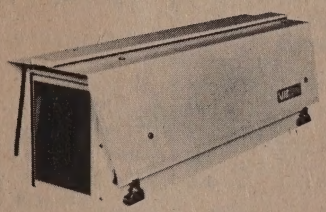
Modular Stylized Consoles, standard and custom from Small Executive Desk top to Full Systems.



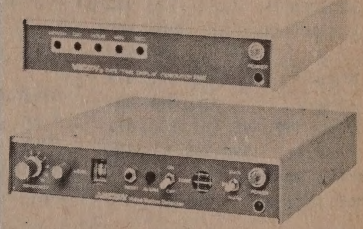
Controls of every description: Preset, Remote Setting, Auto Readout Multiple Function, etc.



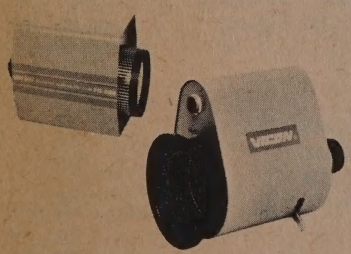
Distribution and Video Amplifiers. Relay Boxes for all cable distribution and distance compensation.



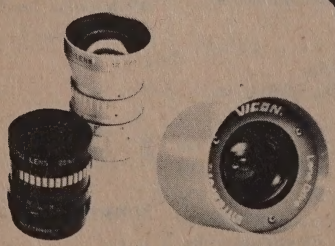
Indoor, Outdoor, Dustproof, Explosion-proof, hidden camera. Enclosures and Housings for every conceivable use.



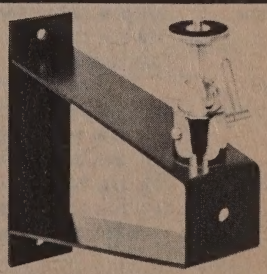
Time and Date Generators in many various versions. Image Motion Detectors.



Remote Controlled Motorized, Push-rod, Crank Driven, Cable Driven Zoom Lenses. Stock or Custom.



Fixed Focal Length Lenses, Motorized Spot and MFTM Filtered. Completely auto in addition to a wide range of Manual Lenses.



A complete line of Mounting Brackets, Pedestal or Ceiling Mounts and support hardware for all situations.

VICON® INDUSTRIES INC.

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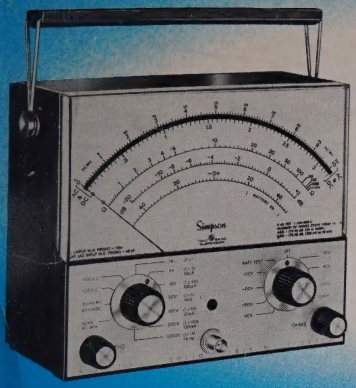

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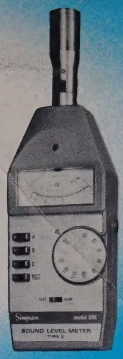

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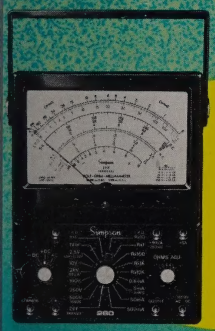

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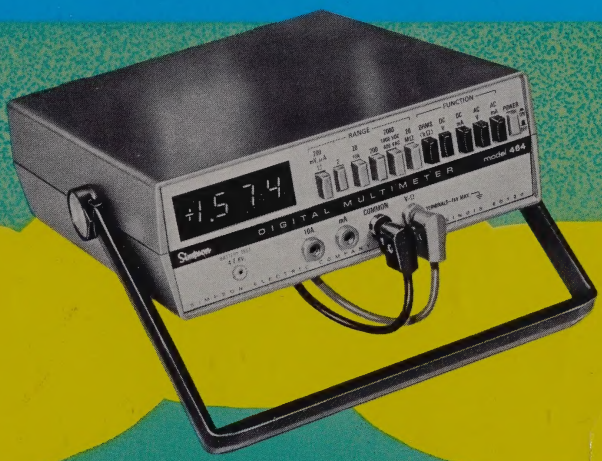

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